

1985

## Potential Impacts of Shipping Nationalism upon a Round-the-World Shipping Service

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POTENTIAL IMPACTS OF SHIPPING  
NATIONALISM UPON A  
ROUND-THE-WORLD SHIPPING  
SERVICE  
BY  
MARC BISSONNETTE

A MAJOR PAPER SUBMITTED IN  
PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF  
MASTER OF MARINE AFFAIRS

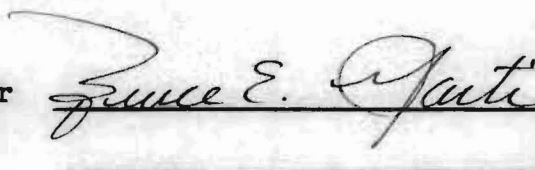
UNIVERSITY OF RHODE ISLAND

1985

MAJOR PAPER  
OF  
MARC BISSONNETTE

APPROVED:

Major Professor

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## ABSTRACT

Traditionally, carriers flying the American flag have concentrated on U.S. trades. The advent of new routing strategies in the container age has increased their ability to move cargo between foreign ports. As a result, their dependence on these cargoes is growing. An example is the "Sea Bridge" service, introduced by United States Lines. With a round-the-world itinerary, this service may very well depend upon cargo carried between foreign ports in order to succeed.

The ability of United States Lines to capture these foreign-to-foreign cargoes may be hampered by rising protectionism worldwide. The analysis presented here is in two separate disciplines. The first section is an analysis of the political impediments to cargo access United States Lines potentially faces with their new service. The second section is an economic analysis of the service itself to determine its viability.

The relevance of protectionism to the success of the Sea Bridge service was then inferred by combining the two sections. It was established that protectionism was a threat over the long term. However, other factors, such as the level of world trade, and the actions of competitors, would play a greater role in the success or failure of the United States Lines service.

## ACKNOWLEDGEMENTS

The author would like to acknowledge the roles played by certain people in the writing of this paper. The first is Professor Bruce E. Marti, at the University of Rhode Island, who provided guidance and a great deal of shipping expertise. Secondly, Lillian, who was a source of inspiration. Last, but not least, Kathleen, whose generosity and long hours put it all together for me.

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## CHAPTER ONE GENERAL INFORMATION

### Introduction

The introduction of fully cellular round-the-world container shipping services (RWS) caused a great deal of controversy and speculation in the maritime community. The actions of United States Lines (U.S. Lines) and, the Taiwanese carrier Evergreen Lines have the potential to seriously alter the shape of liner shipping. The systems created by these lines differ considerably; in that Evergreen appears to be seeking the optimum ship routing configuration, whereas U.S. Lines is introducing tremendous economies of scale in their new buildings. The fact that the systems vary to such a degree is an indication that no clear-cut formula exists for success in RWS. Although certain carriers, such as Neptune Orient, are introducing RWS, it does not appear the shipping community is rushing into the commencement of their own RWS.

There are unique advantages offered by RWS as compared to point to point shuttle services; however, they must compete in the same world marketplace. A major trend in this marketplace is protectionism. In order to encourage their national fleets, many nations practice cargo preference and flag discrimination. Protectionism in shipping is not a new phenomenon,



dating back to the Roman Empire (Von Sydow, 1978). Yet, the emergence of the developing states in the past forty years has increased the complexity of problems involved in protectionism. The idea of freely competitive cargo access may be archaic in light of developments in the last decade. Shipping nationalism appears to be gathering momentum, and serious changes to the world trading system are inevitable. However, the shipping industry does not easily lend itself to rapid change; therefore, the introduction of legitimized protectionism should be considered evolutionary in nature.

In order for the RWS to be successful, the operators must have access to crosstrade cargoes. Crosstrade cargoes are cargoes carried between two nations aboard a vessel that flies a different flag from those of the trading nations. The focus here will be on the U.S. Lines service. It is hypothesized that the denial of access to crosstrade cargoes will be a key element in the success or failure of the RWS. An important factor in keeping crosstrades open will be the response of the United States Government to protectionist actions of foreign governments and shipping interests.

This paper will attempt to measure the potential impacts of protectionism upon the U.S. Lines RWS. The very nature of protectionism, as well as the fact that the RWS has yet to be fully developed, places much of the subject matter in the realm of speculation. Both economic and political factors will be

subjected to analysis. From the combination of all the considerations a conclusion will be established which will determine whether the RWS is sufficiently marginal economically to be rendered unprofitable by protectionist actions.

### An Overview of Maritime Economics

Maritime economics is a discipline which is associated with the volatile field of world trade. Shipping is a "derived industry, versus an industry which stands alone. The increasing politicization of world trade increases the complexity of maritime economics, as in excess of 99 percent of world trade is seaborne.

The reasons for world trades, as Branch, 1982 discussed, include:

1. The uneven distribution of natural resources worldwide.
2. The effects of climate upon cultivation.
3. The inability of certain nations to produce items needed.
4. The implication of "Comparative advantages", that it is advantageous for nations to specialize in the forms of production in which they have superior production factors.

Benefits of trade include reduction in prices of certain goods, greater product variety, and wider markets which can create economies of scale in production.

The idea of a world in which nations specialize in producing those goods in which they are most efficient, and trade those goods for needed items, is clouded by political considerations. Governments have differing priorities, and may divert from a free trade attitude because of security, or internal economic conditions. The emergence of the Third World, since World War II, has caused a shift of world trades toward developing countries. The world shipping community has followed this trend, and more ships are owned and operated by developing nations.

Shipping is an "invisible" rather than "visible" factor in world trade. Visible factors are tangible goods for which costs are readily apparent. Invisibles, such as shipping or finance, can exert a great influence on the landed costs of a commodity; thus determining whether or not that commodity can move in world trade (Juda, 1981). Shipping also exerts a major behind-the-scenes effect on the health of nations. It has been suggested that maritime economists evaluate the social costs of shipping service to a nation, in addition to financial costs.

As an invisible expense, shipping can also effect a nation's balance of payments with other countries. The industry also provides employment opportunities. If a nation produces products in which the comparative advantage is small, or the demand is fairly elastic, the cost of shipping can influence that nation's ability to sell its products in the world market. Thus, investment in shipping may be warranted, although the service itself may not be a profit maker.

Maritime transportation involves long-term investment of substantial amounts of capital in a business which can be altered by short-term political and economic events. A shipowner must make judgements concerning the design of his vessel, which may effect his operations ten to twenty years into the future. A general rule is that a shipowner seeks the slowest, smallest vessel to do the job it is intended to do. However, a versatile vessel can be a hedge against short-term fluctuations in trades (Branch, 1982).

Vessels are designed for certain trades, but standardized designs are accepted when the costs involved in designing and building the vessel become excessive. The process involved in weighing the myriad of factors involved and producing the perfect ship for a trade is a science in itself, and a major subset of maritime economics.

The ships themselves are merely vehicles in marine transportation. Procurement of cargo is the primary consideration. In order to effectively capture cargo, a shipowner must create a schedule for his given on a given route.

Branch (1982) gives twenty factors to consider in planning these schedules, including:

1. Number of vessels employed.
2. Types of vessels.
3. Volume and type of cargo traffic.
4. Seasonal traffic fluctuations.
5. Availability of crews.
6. Climatic conditions.

7. Competition within a trade.
8. Availability and reliability of labor and port facilities.
9. Time involved in cargo operations.
10. Voyage time between ports.
11. Potential hostilities which may cause re-routing.
12. Imbalances of trade flows.
13. Potential traffic growth.
14. Necessary time for dry docking and surveys.
15. Fuel requirements.

Efficient ship scheduling requires continuous monitoring of market conditions and various costs involved in a trade. A shipowner must also have plans for emergencies or changes in a trade.

The four key elements of any shipping operation are:

1. Speed of service.
2. Frequency of service.
3. Reliability of service.
4. Cost of service (Branch, 1982).

It would appear that costs of service would predominate over the other factors. This is not necessarily true in all cases. The value of a commodity being shipped is a prime consideration as to the service a shipper selects. Shippers of high value items may place more emphasis on speed or frequency, whereas shippers of lesser value items would tend to emphasize

cost of service. This occurs for several reasons, higher value items incur greater inventory costs, so a speedier service may reduce these costs. Shipping costs of low value items are usually a greater percentage of the landed costs, thus the emphasis would be towards a lower cost service. Dependent upon his production schedule, a shipper will choose the line which offers a frequency of service which will best suit his needs, whether it be weekly, bi-weekly, or monthly. Reliability and reputation can also have a major impact on the choice of a shipping operation.

All shipowners must contend with the same basic types of operating expenses. The percentage that each factor contributes to overall operating costs can vary widely, depending upon the type of shipping operation. A common definition of operating costs has yet to be established, and there is a variety of different breakdowns (Heaver, 1985) which suit different shipping operations. The focus here will be on liner operations, the cost structures of which will differ considerably from those of bulk operations.

The first type of costs to be considered are voyage costs. These are costs which are incurred as a direct result of the particular voyage being accounted for. These costs are related to the length of sea transit and the particular ports called at. Examples of voyage costs include expenses for fuel, port and canal charges, and cargo handling.

The next type of costs are those which can be considered as unrelated to a particular voyage, but, vary little with any particular route. These costs include those for crew,

supplies, insurance, maintenance, and repairs, and administration. Capital costs are those which are associated with the ownership of a vessel.

The definitions of operating costs vary from one of the total costs of the shipping operation to one where both voyage costs and capital costs are deducted from total costs. The latter is the most commonly used, and this provides for a breakdown of total costs into operating, voyage and capital costs (Heaver, 1985).

Another classification which is used to differentiate ship's costs is that between fixed and variable costs. It has been said that a troubled shipping line will continue to operate as long as variable costs are covered, and some contribution can be made to fixed costs. In a liner service such as the Round-the-World Service (RWS) to be examined, many of the costs which can be considered variable are indeed more of a fixed nature which points to a serious flaw in this cost differentiation. For various reasons the breakdown used in this analysis will be that given by Frankel (1982) which utilizes the fixed/variable approach. Chief among these reasons is the fact that the service is not fully developed and changes could cause alteration of costs considered variable. A secondary reason is the fact that capital costs will be on the mind of the operator, as a tremendous debt burden has been incurred. Debt service may indeed have a major impact on operating strategy, and thus, operating costs, and because of this the separation between operating, voyage, and capital costs was not deemed necessary.

The following breakdown of operating expenses will be used in this study (Frankel, 1982):

FIXED COSTS

1. Financing.
2. Crew and Manning.
3. Insurance - Hull, P & I.
4. Administration.
5. Overhead.

VARIABLE COSTS

In Port

1. Fuel and Lube Oil.
2. Maintenance and Repair.
3. Port Dues and Canal Costs.
4. Supplies.
5. Cargo Handling.

At Sea

1. Fuel and Lube Oil.
2. Maintenance and Repair.
3. Supplies.



Shipowners must also conform to standards set by certain organizations which may effect the cost of operating their vessels. In the liner trades, shipowners form cartels called conferences in which freight trades and sailing schedules are regulated to benefit all members. The International Maritime Organization (IMO) sets standards for ship construction. The International Labor Organization (ILO) sets standards for quality and care of shipboard personnel.

The field of maritime economics is broad, and the shipping business is multi-faceted and dynamic. The efficient shipowner must have a firm grasp of all factors which could effect his operations. Considering the international nature of the business, events thousands of miles away can make or break a shipping operation. National policies and conference practices can also determine the success or failure of a service. Errors in ship design, scheduling, or marketing could potentially cause a shipping line to lose profitability.

### The Development of Containerization

Liner shipping is performed for the carriage of mostly high value, finished goods. This can be differentiated from bulk shipping, in which shipload lots of homogenous, lower value cargo is carried.

Liner services require an extensive shoreside support staff, and provide shippers with regularly scheduled sailings at frequent intervals. A major economic element in liner shipping is termed "cross subsidization". As freight rates

are a proportion of the landed cost of an item in international trade, the rate would naturally be a higher proportion of the cost of a low valued item versus a higher valued item over the same trade route. As a result, shipowners charge "what the traffic can bear", with higher valued items charged a higher rate.

In effect, the high value items subsidize the movement of low value items in order to keep the low value items flowing. This results in higher load factors (percentage of vessel utilization). Shipowners involved in multiple trade routes also cross-subsidize lower revenue earning routes with profits earned from higher revenue routes.

Liner shipping was revolutionized in the late 1950s, with the advent of containerization. Prior to containerization, goods were carried in small lots which were carefully stowed in holds of ships by longshoremen. This method (break-bulk) was both labor and time intense. Ships spent up to 60 percent of their lives in port (Goss, 1967).

The maximum size of vessels using the break-bulk method was governed by the need to reduce the turn-around time as much as possible. Ships do not earn revenues while sitting in port. A smaller vessel is able to turn-around in port much faster than a larger vessel. Economies of scale were overcome by the need to reduce the turn-around time.

In the late 1950s an American trucking magnate, Malcolm McLean established a liner shipping service between New York and Texas which proved to be a model for a worldwide transportation network. McLean stowed cargo in boxes which fit onto truck

trailers. Their easy removal allowed cargo to be carried at sea, or on land without bulk breakage. Since the loads were of homogenous size, loading and offloading was facilitated. The larger weight per lift enabled container vessels to drastically reduce their turn-around time in port, enabling larger ships to be economically employed. Any additional fuel costs incurred by the higher operating speeds were justified by the increased efficiency of port operations.

Containerization requires large amounts of capital input, which is a main reason for shipowners in liner shipping not immediately embracing it. To combat this capital intensiveness, shipowners formed consortia to divide the costs among several countries/companies.

The Atlantic Container Line (ACL) was formed in 1967 with Swedish, Dutch, French and English partners. This consortium was formed in direct response to the introduction of containerized service on the North Atlantic route in 1966 by the three American lines of Moore McCormack, U.S. Lines, and Sea-Land (Kendall, 1983).

The first containerships were break-bulk vessels which had been converted to carry containers on deck. As containerization became more widely accepted, purpose-built containerships were constructed. These vessels feature cellular guides to place the containers in, and facilities to securely store the containers.

In order to utilize economies of scale, these vessels were larger and faster than break-bulk vessels. The oil crisis of 1973 caused shipowners to examine fuel costs. Reduced speeds and replacement of steam turbines with diesels increased fuel efficiency.

Ships such as the 26 knot, Sea Land SL-7, became too costly to operate efficiently. The subsidized U.S. carriers were handicapped by this conversion to diesel, as the U.S. Navy required a certain design speed be incorporated into subsidized vessels. As a result, American operators were placed at a disadvantage, as compared to their European and Japanese counterparts.

Containerization has manifested itself in other ways. Besides the growth in number and size of full containerships, additional innovations included the semi-containership, the roll-on/roll-off, and the container/bulk ship.

The semi-container ship is designed to carry break-bulk as well as container cargo. The roll-on/roll-off (RO/RO) carries the container, as well as the chassis, and features faster unloading than the full containerships. The container/bulk ships are full containerships with strengthened hulls, allowing the carriage of bulk cargoes.

There are also hybrid combinations of these basic types, and other carriers which compete with full containerships for cargo. The percentage of these types of vessels is growing annually.

In 1981, the percentage of world containership fleet for these basic types totalled 56 percent (CSR, 1984), and consisted of:

- |                     |            |
|---------------------|------------|
| 1. Semi-container   | 32 percent |
| 2. Roll-on/roll-off | 18 percent |
| 3. Container/bulk   | 6 percent  |

In addition to other types of vessels, full containership operators must compete with land modes of transportation due to the intermodal nature of containerization.

The Trans-Siberian Railroad offers competition in the Europe/Far East trade, and has captured an estimated 20 percent of cargoes flowing from the Far East to Europe (Seatrade, 1985 b). Landbridge operations from the Far East to Europe and the East Coast of North America (and vice-a-versa) have secured a market share competing with all-water carriers.

World containerized traffic increased over 600 percent between 1970 and 1982 (CSR, 1984). This growth was primarily recorded on three major trade routes:

1. North Atlantic/Europe
2. Europe/Far East
3. North America/Far East

Given its capital intensiveness, many third world trades were not balanced or large enough to warrant containerization. Many of these trades are now in the process of being containerized.

One manifestation of the capital intensiveness of containerization was the concentration of vessels among a few carriers. In 1980, twenty carriers owned 60 percent of the world fleet. In 1981, 73 percent of the total slot capacity could be attributed to carriers from Western Europe, Far East and North America (Pearson and Fossey, 1984).

Regardless of the fact that certain developing nations have recorded increases in containerized traffic, the main impetus for container growth has remained with developed and emerging developed nations. Considering the current surplus of vessels, and the ability to lease containers, the capital intensiveness of containerized shipping is decreasing, and market entry has been facilitated. This will lead to major changes in the geographic distribution of containerized traffic, as well as ownership of the world's container fleet (Pearson and Fossey, 1984). Despite the aforementioned financial restrictions placed upon containership operations, the world market is currently overtonnaged, especially in the North/North trades.

Containerization International Yearbook 1984 places the world fleet at 2,961 ships with a capacity of 1.75 million TEU. Ships on order aggregated another 330,000 TEU, to be delivered by 1986. These new slots will aggravate a market already overtonnaged by up to 30 percent. Other forecasts are considerably higher; one estimate as much as 2.4 million TEU by 1986 (CSR, 1984).

Nearly one third of the TEU slots on order in 1984 were the result of orders by two operators, the American carrier U.S. Lines, and the Taiwanese carrier Evergreen Lines. In a time when there is existing overcapacity, and the growth of manufactured goods is expected to increase only 4.6 percent per annum, one can only wonder where the cargo to fill these massive orders will come from (Containerization International, 1985).

## Protectionism in Shipping

It has been stated that the "megatrend" in international maritime policy is the politicization of formerly private decisions and commercial accommodations (Schrier, 1985). This politicization can take many forms, and there seems to be no common definition of protectionism which is accepted on a global basis. The driving forces behind this wave of protectionist actions in the maritime world are the general recession worldwide, and the desire of many nations to establish or expand their merchant fleets (Totland, 1980).

Protectionism can be broadly defined as reduction of competition through non-market forces to favor national interests. Protectionism can be categorized into three general categories:

1. unilateral cargo reservation and flag preference
2. bilateral division and allocation of cargo
3. multilateral cargo sharing schemes

Many nations, including the United States, practice cargo reservation of government-impelled cargoes. Bilateral agreements between nations are proliferating worldwide, whether they are governmental or commercial in nature. An example of a multilateral sharing scheme is the United Nations Conference on Trade and Development (UNCTAD) Code of Conduct for Liner Conferences which came into force in October of 1983.

The UNCTAD Liner Code evolved from the desire of developing

countries to form a "New International Maritime Order" (Bohme, 1984). Developing nations sought to:

1. Have a substantial and increased share in the carriage of oceanborne cargoes and a corresponding portion of the world fleet.
2. Form their national fleets on the grounds of sound economic principles and equity.

In 1970, the developing nations accounted for approximately 17 percent of world trade, but, only slightly more than 6 percent of world tonnage (UNCTAD, 1982). Besides the inequity in the number of vessels, the developing nations were hampered by the difficulties experienced in gaining entry into closed liner conferences serving their trades (Juda, 1981). Liner conferences are defined as organizations of international liner carriers that collectively agree on routes, schedules, rates, and other aspects of liner services (Office of Technology Assessment, 1983). Since conferences were in existence prior to the emergence of the Third World, they were viewed as a vestige of colonialism. Developing countries also felt they had no control over freight costs, and their inability to ensure cargoes made financing a fleet a difficult proposition (Juda, 1981). In response to these difficulties, the United Nations Conference on Trade and Development (UNCTAD) adopted a Code of Conduct for Liner Conferences in 1974. Basic provisions of the UNCTAD Code include:

1. The right of national flag lines to enter conferences serving their trades.



2. Cargo sharing through tonnage/revenue pooling, or sailing agreements.
3. Dispute resolution mechanisms.
4. Conference decision making and consultation.
5. Freight rate determination.
6. Procedures for grant of membership.

The focus here will be on Article 2.4 of the Code which states:

- a) The national flag lines in a trade shall each carry an equal proportion of their mutual conference trade.
- b) Third-country shipping lines shall have the right to acquire a significant part such as 20 percent in the freight and volume of traffic generated in that trade.

These provisions have become known widely as the 40-40-20 clause, the numbers representing the respective shares of a trade given to the national flag lines in a trade and third-flag carriers, which are named crosstraders.

By January, 1984, fifty-nine nations had ratified the Code. The European Economic Community (EEC) has become signatory to the Code with a set of reservations dubbed the "Brussels Package" (EEC Regulation 954/79), which exempts cargo carried between EEC members, and also between reciprocating members of the Organization of Economic Cooperation and Development (OECD), from the cargo sharing provisions of the Code. It is postulated that the combination of viable nonconference carriers and the Brussels Package has left only 5 to 10 percent of the world's

liner cargo under the auspices of the Code (Odeke, 1984). Many nations have been disinclined to make the Code operative. Other problems which implementation of the Code faces include:

1. Non-acceptance by major trading nations, such as the United States, Australia and Brazil.
2. Lack of provisions for administration.
3. The questionable legal status of Conferences if governments police the Code (Sturmey, 1984).
4. Questions of status of transshipment cargo, as well as unidirectional services such as Round-the-World Service (Frankel, et al, 1981).
5. If developing nations take measure more restrictive than the Code, such as applying it to all liner cargo, (excluding independents), or bulk cargoes, it will tend to make the Code irrelevant dependent upon the interpretation of the Code (Odeke, 1984).

Comments on the Code in the developed countries have ranged from "a license for protectionism" to "codifying the best conference principle" (Schrier, 1985 and Sturmey, 1984). Such polarization will lead to problems in implementation, but the Code will not just go away. It has legitimized existing political impediments, and it will change the traditional conference structures to a yet to be seen form, if it is implemented. The vexing problem of the role of government regulation under the Code will undermine its implementation in its present form. One of the strengths of the Code is that it can be radically altered after five years, which will occur in 1988. The Code will have to deal with current practices of certain nations, which are either different from, or in opposition to, the provisions and spirit of the Code. Another issue which must be

dealt with is the fact that conference practice has changed since the Code was drafted, therefore, the Code will have to be changed to reflect current conference practice (Containerization International Yearbook, 1984). The review conference in 1988 may well determine whether or not an international instrument, such as the Code, will have much relevance in the future of liner shipping.

Another form of political impediment is unilateral protectionist actions taken by governments to aid their national fleets. These include:

1. Cargo preference of certain commodities or government impelled cargoes.
2. Flag preference against foreign vessels
  - a. currency exchange control
  - b. preferential clauses in trade agreements
  - c. import and export licensing systems
  - d. port regulations and berth preference
  - e. taxation measures.
3. Other practices include:
  - a. heavy fines for minor offenses
  - b. imposition of heavy port dues in response to freight increases
  - c. discrimination against non-national, multi-modal operators
  - d. refusal of transshipment
  - e. requiring lines to obtain "associate line status"
  - f. discriminatory government purchasing (OECD, 1983).

If a multilateral or bilateral scheme is not adopted by the nations in a trade, especially trades between developed and developing nations (LDCs), it seems almost certain that these LDCs would impose any measures needed to ensure the growth or development of their merchant fleets; if they were indeed intent on developing a national shipping industry. The danger to world shipping would seem to be greater if each of a multitude of nations were given free rein to impose any of a long list of impediments to foreign flag carriers.

Of increasing importance are commercial impediments; those which appear to be commercial in nature. The distinction between commercial and government impediments is becoming increasingly blurred (American Shipper, 1985). Commercial protectionism includes:

1. Shipping associations which favor national carriers.
2. The requirement of certain governments to hire local agents, and pay them a minimum commission.
3. Cargo booking offices and freight bureaus which favor national carriers.
4. Agreements between national shipping lines, which lock up mutual trade between two nations.
5. Closed conferences which exclude outsiders.
6. Other impediments such as letters of credit which specify certain lines, increased paperwork, burden on non-national carriers, etc. (Manalytics, 1984, Vol. 3).

Most commercial impediments can be seen as a replacement for direct Government impediments, as the Government plays a major role in the conduct of nations practicing these impediments (Manalytics, 1984, Vol. 3).

The final type of impediments which a crosstrader may face is bilateral agreements. These agreements can serve to lock up cargo between two nations, or group of nations, so that a third flag line is effectively blocked. Many of the agreements in force are 50/50, with each principal carrying 50 percent of their mutual trade. Since these are governmental actions, and do not lie within the conference structure, a third flag line can only appeal to its own government when blocked from a trade. Given the imbalanced nature of many trades, and the flexibility of multi-national port calls at each end of given trade routes, it has been stated that multilateralism is preferable to bilateralism in many cases, as the latter may cause routing efficiencies. The UNCTAD Code provides for regional cargo-sharing schemes.

Cargo-sharing, as a whole, may lead to increased participation of Governments, due to the need to regulate cargo-sharing pools (Sturmey, 1984). Totland (1980) has stated that cargo preference will result in lack of innovation, and increased freight rates in the long run.

Protectionism is on the rise, and nations espousing free-trade, such as the United States, must develop policy responses to combat this growing trend, integrating national security, foreign relations, and domestic aspects.

## Development of U.S. Maritime Policy

The Shipping Act of 1916 marked the commencement of U.S. Government regulation of the liner shipping industry. The Act created the U.S. Shipping Board, investing in the Board the duty of encouraging the U.S. flag merchant marine. The Act made certain practices illegal, such as the use of "fighting ships" and deferred rebates by liner conferences. Discrimination against American shippers was also made illegal. Section 14(a) of the Act (46 U.S.C. 813) gave the Board the power to retaliate against foreign nationals found in violation of the Act. The prescribed penalty for foreign nationals in violation of the Act was to deny their vessels entrance to U.S. ports (U.S. Government Printing Office, 1983).

During the course of World War I, the U.S. merchant marine grew from a nominal to a huge fleet of over 1,750 ships. The principle objectives of the Merchant Marine Act of 1920 were the disposition of this fleet, and to expand the function of the Shipping Board (Frankel, 1982). This expanded function was to create rules and regulations, in addition to enforcing existing laws.

Section 19(b)(46 U.S.C. 876) of the Act reads as follows:

The Board is authorized to make rules affecting shipping in the foreign trades, not in conflict with law and order, to adjust or meet general or special conditions unfavorable to shipping in the foreign trade.

Conditions warranting a Section 19 proceeding are any foreign laws, regulations or anticompetitive methods employed by foreign nationals which discriminate against carriers in U.S. trade. The law also gave the Board the right to request other government agencies to change or revise rules affecting shipping, and a Presidential review, if conflicts arose in that context (U.S. Government Printing Office, 1983).

Both the 1916 Shipping Act and the 1920 Merchant Marine Act enunciated the need for a merchant marine. The Merchant Marine Act of 1936 went further than the previous acts, specifying how the merchant marine would be promoted.

The Act introduced the essential trade route and subsidy systems which would form the cornerstone of U.S. promotional policies. The U.S. Shipping Act Board was abolished and replaced with the U.S. Maritime Commission. The Commission was charged with promotional programs, as well as the regulatory functions of the Shipping Board.

In addition to the powers granted in Section 14 of the 1916 Act, and Section 19 of the 1920 Act, the Commission was directed to investigate any discriminatory actions in foreign trade, and recommend legislation to correct the situation under 46 U.S.C. 1122 (U.S. Government Printing Office, 1983).

The U.S. Maritime Commission was in existence throughout World War II, which saw a rapid growth of the U.S. Merchant Marine. Under Reorganization Plan 21 (75 STAT. 203) of 1950, the U.S. Maritime Commission was abolished and replaced by the Federal Maritime Board in the Department of Commerce (U.S. Government Printing Office, 1983).

In 1961, the Federal Maritime Board was abolished in Reorganization Plan 7 (75 Stat. 840). The regulatory functions of the Board were transferred to the Federal Maritime Commission (FMC), an independent regulatory agency. The Commission consists of five commissioners, who are appointed by the President; and a Chairman, who is appointed from one of the five commissioners (U.S. Government Printing Office, 1983).

The FMC inherited Section 14 and Section 19 powers to protect carriers in the U.S. trades. As U.S. carriers adopted new routing strategies (given containerization), more opportunities for cross-trading were created. The question arose as to the applicability of Section 19 and Section 14 to non-U.S. trades (Senate Report 98-3). Section 19 is applicable "in the foreign trade", but is silent as to trades between foreign ports (U.S. Government Printing Office, 1983).

Section 14 is applicable in the foreign to foreign trades; however, it has the stipulation that the foreign nationals have committed one of a list of prohibited acts (Senate Report 98-3). This did not give the FMC much leeway in the event impediments existed, yet did not fall within the range of prohibited acts.

In hearings before the House Merchant Marine and Fisheries Committee on the Shipping Act of 1983 (H.R. 1878), Albert May, Vice President of the Council of American Flag Ship Operators, (CASO) requested an amendment to the bill authorizing the FMC to suspend tariffs of foreign carriers unduly impairing access of a U.S. carrier trade between foreign ports (House of Representatives Hearings, March, 1983).



In a lecture at the University of Rhode Island, Gerald Siefert, Counsel of the House Merchant Marine and Fisheries Committee, stated that in response to requests by United States Diplomats negotiating with Consultative Shipping Group (C.S.G.), Article 13(b)(5) was added to bill H.R. 1878, which eventually became the Shipping Act of 1984.

The C.S.G. is composed of European and Japanese interests. Talks have centered on the C.S.G. adoption of the UNCTAD Liner Code, as well as United States access to closed conferences in European and Japanese trades. As it echoes of retaliation for any acts which prevent U.S. carriers from crosstrading, it was felt that Article 13(b)(5) would provide the United States with a stronger position in these talks. Article 13(b)(5) of the Shipping Act of 1984 reads:

If, after notice and hearing, the Commission finds that the action of a common carrier, acting alone or in concert with any person, or a foreign government, has unduly impaired access of a vessel documented under the laws of the United States to trade between foreign ports, the Commission shall take action as it finds appropriate. , (98 Stat. 83, Section 13(b)(5).

Appropriate action includes the suspension of tariffs which are required for a foreign operator to operate in U.S. trade. If the foreign carrier wishes to continue working in the United States trades, it is necessary to file new tariffs naming only home ports. This effectively bars foreign carriers from crosstrading in the U.S. trades.

Article 13(b)(5) has been termed a reactive rather than active response, whereby impediments to U.S. cross-trading would be met by the termination of crosstrading opportunities in U.S. trades (Schrier, 1984).

The final rules implementing Article 13(b)(5) state conditions for "unduly impaired" are found only where a U.S. flag carrier is commercially able to enter a trade. Conditions in which a judgement of "unduly impaired access" is required include:

1. Imposition upon U.S. flag vessels or shippers of fees, charges, or restrictions different from those imposed upon national flag carriers or other carriers.
2. Reservation of a substantial portion of the total cargo in a trade to national flag, or other lines, without providing U.S. flag carriers competitive access.
3. Use of predatory practices including closed conferences employing fighting ships or deferred rebates.
4. Any other Government or commercial action which unduly impairs access to crosstrade cargoes (U.S. Government Printing Office, 1984).

When a U.S. flag carrier has exhausted all commercial remedies available, a petition can be filed with the Federal Maritime Commission (FMC) under Section 13. If the FMC finds indications of conditions unduly impairing access to cross-trade cargoes, a proceeding will be instituted; with the commencement published in the Federal Register.

After gathering information from all interested parties, the FMC may conduct hearings before rendering judgment. If the judgment affirms the petition of the affected carrier, the FMC is directed to notify the Secretary of State; requesting that the State Department resolve the matter through diplomatic channels. If not accomplished within a specified period of time, the FMC may order sanctions against foreign carriers, or any national flag line, of the nation responsible for the impediment. These sanctions include:

1. Imposition of equalizing fees or charges.
2. Cargo limitations on cargo carried to, or sailing from U.S. ports.
3. Tariff suspension, with fines up to \$50,000 per shipment for violation of suspensions.
4. Any other action the Commission considers appropriate.

Notice of the decision is then published in the Federal Register; and, simultaneously, is submitted to the President, for approval. Within ten days, the President may disapprove the action because of national security or considerations of foreign policy. Thus, the machinery is in place for the United States to respond to political and commercial impediments, thereby preserving the crosstrading rights of U.S. carriers.

Section 13(b)(5) will be an effective deterrent to impediments of nations which are major crosstraders in our trades. However, Section 13 is just one of many potential

policy responses to protectionist actions of foreign nations. Should responses in the maritime sector fail to produce the desired results, non-maritime policy responses may be invoked. Possible Governmental responses to political impediments are:

1. Formal protest.
2. Tariff suspension under Section 13(b)(5).
3. Port closure under Section 14(a)(2) of the Shipping Act of 1916.
4. Cargo reservation by executive order.
5. Imposition of operating restrictions.
6. Increased taxes or currency control by executive order.

Non maritime responses which can be invoked' include:

1. increased duties (Tariff Act of 1930).
2. trade restrictions (various Acts).
3. alteration of economic or military aid.
4. abrogation of treaties (Manalytics, 1984).

The enforcers of U.S. maritime policy have considerable clout and many tools to work with. However, they are handicapped by the fact that shipping is a small part of the total economic and geopolitical considerations in U.S. foreign economic and commercial policy. In view of that, it is

evident that, when sanctions are being considered, a host of other government agencies will be involved in the process of making decisions. Many will have vested interests in the foreign nation or nations involved. Opposition by one or more of these agencies may handcuff the FMC in its ability to keep crosstrades open.

Other major actors in the foreign policy process are:

1. Department of State.
2. Department of Defense.
3. Department of Transportation.
4. Department of Agriculture.
5. Department of Commerce.
6. Export-Import Bank.
7. Office of the Trade Representative.
8. Overseas Private Investment Corporation.
9. International Development and Cooperation Agency.
10. Agency for International Development.

As evidenced in the information provided above, the FMC will have to exert considerable influence on the domestic front, before any influence is exerted in the international sphere.

CHAPTER TWO  
THE ROUND-THE-WORLD SERVICE

Developing the Service

United States Lines is probably best remembered for their passenger ship operations which included the superliner S.S. United States, holder of the blue ribbon for fastest transatlantic crossing. United States Lines was also a pioneer in the transatlantic container trade, commencing the carriage of containers on the deck of four breakbulk vessels in March 1966 (Kendall, 1983).

In 1974, United States Lines was purchased by Malcolm McLean, pioneer of containerization and founder of Sea-Land Corporation. McLean inherited a fleet of vessels which were too small for the routes they were involved in, as well as being fuel-inefficient steam-turbine vessels. High manning scales also caused the line's inability to compete with foreign operators and more efficient American operators.

McLean had an idea to revolutionize the container business by introducing greater economies of scale than those being used. The theoretical maximum size of a container vessel was considered in the range of 5,000 TEU. However, in 1978, the average size of fully cellular container vessels was 842 TEU (Pearson and Fossey, 1984).

McLean employed C. R. Cushing Company to design panamax, (maximum dimensions to fit through the Panama Canal) containerships to run in an around-the-world itinerary. At the time, containerships were growing in size; the Hapag Lloyd vessel, Frankfurt Express, held the lead with 3,045 TEU (American Bureau of Shipping, 1984). McLean's idea went beyond that, and plans were drawn for a 4,400 TEU vessel.

The proposed itinerary for this fleet of superships was also a first in container circles. The idea of an around-the-world service was not a new one. Several lines, notably American Export Lines, ran break-bulk vessels around the world successfully. Barber Blue Sea and several other operators ran semi-container and roll-on/roll-off (RO/RO) operations worldwide. Never before had anyone run a fully cellular container vessel on a worldwide itinerary.

Before his dream would come to fruition, McLean would face many obstacles, the first of which was the Maritime Administration (MARAD). In order to initiate the new service it was necessary to buy out of the operating differential subsidy to enable the line to charter foreign flag feeder services. It is stated in Section 804(A) of the Merchant Marine Act of 1936 that it is illegal for a subsidized U.S. carrier to operate or charter foreign flag tonnage which competes with any essential U.S. flag service (Government Printing Office, 1983).

The money obtained from the buy out also assisted in McLean's financing of his new vessels. In June 1982, MARAD approved the buy out of a U.S. Lines long-term subsidy, in return for a cash settlement and a five year short-term subsidy on vessels not involved in Round-the-World Services (RWS). In October 1984, MARAD approved the request for foreign feeder vessels for a period of two years. Both the subsidy buy out and the foreign flag feeders are being challenged by various United States maritime interests on the grounds that the MARAD decisions will adversely affect their interests (Seatrade, 1985a).

Another obstacle McLean faced was gaining permission to build his ships abroad. Permission was received in 1983, as the Government granted a twelve month waiver for United States-flag subsidized carriers to build their vessels abroad. An order was placed with Daewoo Shipyard in South Korea for twelve "Econships" (named by the designer) which U.S. Lines will call the "New York Class".

The \$570 million contract was the largest shipbuilding order in history. In order to finance this staggering amount, McLean obtained 80 percent of the required financing from the shipyard over a ten year period. Other lenders, most notably American Express and General Electric, provided funding for down payments over a twelve year period. U.S. Lines established a \$10 million account for each ship and agreed to maintain certain financial obligations (American Shipper, 1984). During this same period of time, in addition to developing his



RWS, McLean made two other major acquisitions. In January 1983, U.S. Lines acquired Moore McCormack, operating thirteen vessels running to the East Coast of South America. Moore McCormack was renamed U.S. Lines S.A., and in late 1984, Delta Steamship Lines was acquired. Delta Lines ran eleven vessels operating in the East and West Coasts of South American and South African trades. Presumably, once South American trades have been containerized, cargo will be fed into the RWS at Panama.

In mid-1984, the first vessel, "American New York" was launched. This initiated the largest peacetime expansion of the U.S. Merchant Marine in United States history. U.S. Lines Chairman, William Bru, called it a "new era in American shipping". If successful, this new service, along with another RWS initiated by Evergreen Lines of Taiwan, could upset traditional notions of maritime economics, and force the departure of many inefficient lines from the world shipping community (Sagar, 1985).

#### The Econships

Malcolm McLean sought to expand his original idea, which had taken the world by storm. Containerships continued to make multi-port calls at each end of a trade route, rather than only servicing major ports. Secondary ports were still serviced by mainline vessels. The idea of "load centers" had not occurred for several reasons. McLean's idea was to introduce the largest ships with economical power plants and reduced manning to run "the cheapest container slot".

McLean presented his idea to C. R. Cushing Company of New York, and plans were made for the Econships. The size of the vessels was constrained by the size of the Panama Canal. They are nine hundred fifty feet in overall length, with a beam of one hundred six feet, and a summer draft of thirty five feet. They are rated at 4,200 TEU, however, on her maiden voyage the American New York carried 4,400 TEU. Figure 1 shows the dimensions and capacities of the Econships.

The vessels are virtually rectangular above the waterline. Below the waterline they are fine to allow greater fuel economy. The beam is the same at the stern as to midships. The seventy foot depth gives the vessel a very high freeboard. Other features built into the vessel are lack of flared bow and minimum dead rise from the keel to the bilge stroke. This minimizes dry-docking and repair complications.

The ratio of length to beam is nine to one, compared to an average ratio for most panamax vessels of approximately seven to one. There are two large box girders running the length of the vessel, which allow increased longitudinal strength and provide the crew with access to the bow by acting as passageways.

Econships are powered by a Sulzer two-stroke diesel producing 28,000 horsepower and driving a 7.6 meter diameter five-bladed propeller. Service speed of these vessels is eighteen knots, and they are expected to burn approximately seventy three tons of fuel per day. The fuel capacity is fifty six hundred tons enabling the vessels to circle the

FIGURE 1

## The "NEW YORK CLASS" Full Container Ships

Christening May 31, 1984

American New York  
American Maine



American New Jersey  
American Alabama

### Outline of Vessel:

These vessels are single screw, single rudder, diesel-propelled with f'cle deck and bulbous bow. The engine room and accommodations are located aft. The design is principally for carrying ISO type, forty-foot long, cargo containers.

### Principal Particulars:

#### a) Main Dimensions:

Length overall:	289.500 M/950 ft.
Beam (Panamax):	32.218 M/ 106 ft.
Depth:	21.500 M/ 70' 6"
Draft:	10.670 M/ 35 ft.

#### b) Deadweight and Tonnage:

DWT at scantling draft	57,800 metric tons
Gross tonnage	52,000 metric tons
Net tonnage	18,700 metric tons

#### c) Capacities:

Containers:	in hold, 1232 FEU (forty-foot equivalent units)
	on deck, 996 FEU
	Total 2228 FEU

Includes capacity for 146 FEU refrigerated units on deck.

Breakbulk capacity: 102,500 cu ft.

Particularly suitable for heavy lift rolling stock.

#### d) Speed—Cruising Range:

These vessels will carry sufficient fuel to cruise 30,000 nautical miles at 18 knots.

#### e) Main Engine:

Model Sulzer 7RLB90, Slow speed diesel  
Horsepower: 28,000

#### f) Safety Features:

- Containers are secured by "Peck and Hale", ridged rod with locking stacker lashing system.
- Longshoreman catwalks provided throughout the structure.
- U.S. Coast Guard Safety Regulations applicable.
- Class: ABS, + A1, (E) + AMS, + ACCU.

#### g) Guidance/Navigation/Communication Equipment

- SATNAV Satellite guidance system.
- Loran/Decca electronic navigation system.
- Sperry autopilot SRP 2000—Steering control and autopilot, and hydraulic backup systems.
- Sperry radar plant (short and long range) including collision avoidance systems.
- Satellite communication system allowing contact by telex or voice to any office or ship in the world.

Source: MARAD

globe without bunkering (Marine Engineering Log, 1984).

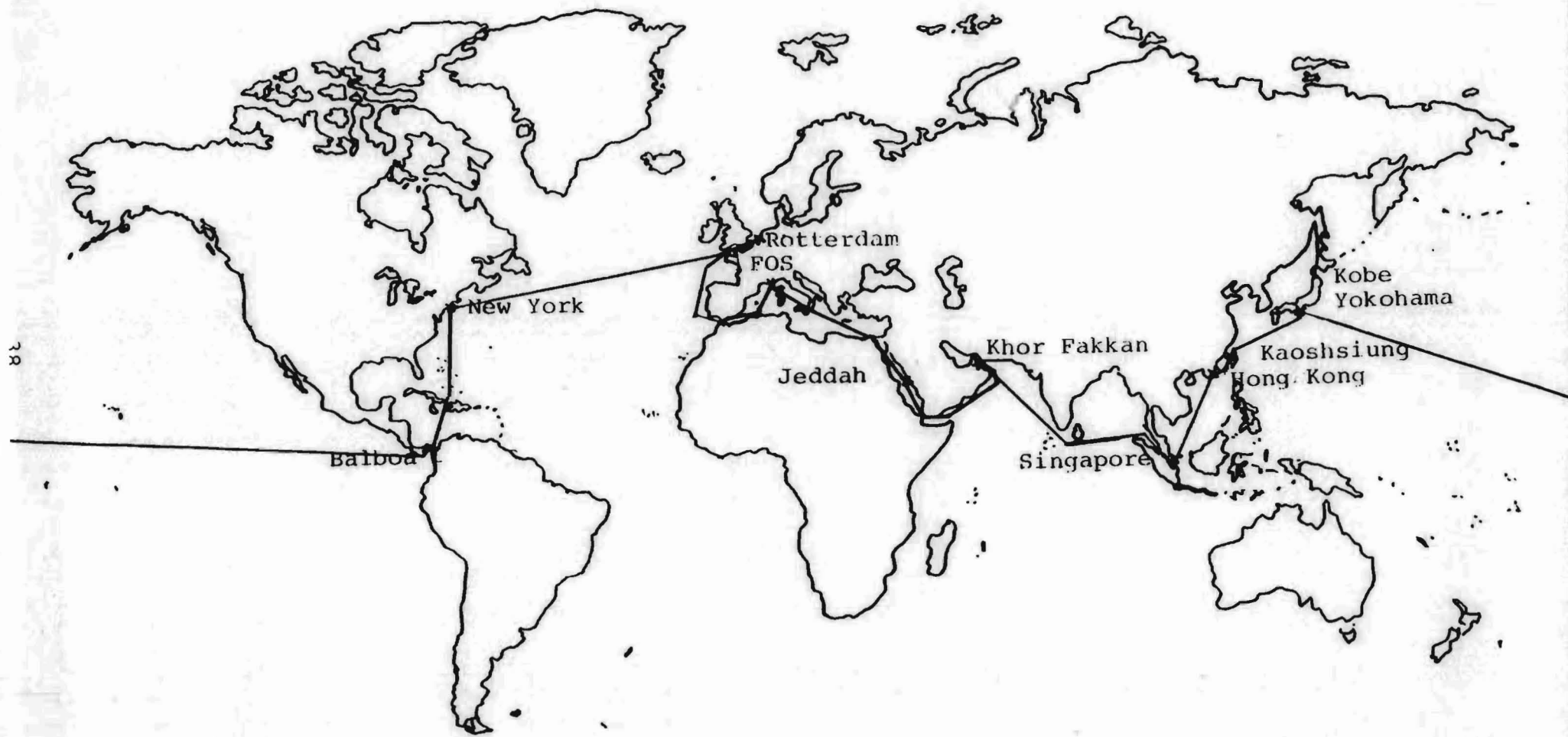
Twenty one crewmen operate the vessels, including:

1. One Master.
2. Three Deck Officers.
3. Chief Engineer and Three Assistant Engineers.
4. One Radio Officer.
5. Six Seamen.
6. Two Engine Mechanics.
7. One Wiper.
8. Three Stewards.

This represents a considerable reduction in crew over former U.S. Lines vessels which carried a crew of thirty nine. The vessels are American Bureau of Shipping (ABS) classified, and represent the state of the art in containership design (American Bureau of Shipping, 1984).

#### The Route

U.S. Lines has been extremely secretive in the development of the "Sea Bridge" service. A proposed itinerary is presented in Table 1, along with distances and transit times. Figure 2 shows the route on a world map. Table 2 depicts the feeder service distances. The service began in December 1984. The interim service deletes the Northern Europe port as well as port calls in the Persian Gulf, and Balboa, Panama.



ROUTE OF THE ROUND-THE-WORLD SERVICE

Source: Various Trade Journals

Table 1

ROUND-THE-WORLD SERVICES  
DISTANCE AND TRANSIT TIMES

	DISTANCE (N.M.)	TRANSIT TIMES (Days)
New York - Rotterdam	3,484	7.0
Rotterdam - Marseilles - FOS	2,153	5.0
Marseilles - FOS - Jeddah	2,240	5.2
Jeddah - Khor Fakkan, UAE	2,578	6.0
Khor Fakkan - Singapore	3,200	7.4
Singapore - Hong Kong	1,454	3.4
Hong Kong - Kaoshiung	341	.8
Kaoshiung - Kobe	1,075	2.5
Kobe - Yokohama	357	.8
Yokohama - Panama	7,682	17.8
Panama - Savannah	1,606	3.7
Savannah - New York	634	1.5
TOTALS	<u>26,774</u>	<u>61.1</u>

Sources: U.S. Navy Oceanographic Office  
Distances Between Ports, 1965  
Author's Calculations (Utilizing Mercator Method)

TABLE 2

## PROPOSED FEEDER SERVICE DISTANCES

LINE HAUL PORT/VESSEL	FEEDER PORT	DISTANCE
<u>Rotterdam:</u>	Felixstowe	115
	Dublin	686
1 - 110 T.E.U.	Greenock	856
2 - 175 T.E.U.	Aarhus	454
3 - 450 T.E.U.	Goteburg	553
	Hamburg	307
<u>Marseilles/FOS</u>	Leghorn	236
	Genoa	204
1 - 175 T.E.U.	Barcelona	189
	Valencia	347
<u>Khor Fakkan, UAE</u>	Damman	180
	Kuwait	336
2 - 275 T.E.U.	Muscat	347
	Cochin	1600
2 - 225 T.E.U.	Bombay	1193
	Karachi	689
<u>Singapore</u>	Madras	1583
	Calcutta	1649
	Chalna	1578
3 - 225 T.E.U.	Columbo+	1581
	Chittagong	1517
	Bangkok*	842
	Penang*	367
	Jakarta*	490
<u>Kaoshiung</u>	Manila	---
<u>Kobe</u>	Busan	308
1 - 110 T.E.U.		

+ Colombo may be used for a line haul port

\* Space Charter Agreements

Sources: Distances Between Ports, 1965  
Author's Calculations

The backbone of the route lies in the eastbound trans-Pacific leg. This is the trade route containing the most traffic. Vessel operators have been experiencing load factors between 80 and 85 percent on this vital leg.

The weakest link in the system is the Europe to Far East trade. This trade is overtonnaged with load factors running from 60 percent to 80 percent (Seatrade, 1985b). The service is also running in the wrong direction across the North Atlantic, as load factors are higher in the westbound direction. Given the current strength of the dollar, the load factors eastbound on the North Atlantic are low. A decline in the strength of the dollar could spark U.S. exports in the future, thereby improving this situation.

In Northern Europe, the line haul port (stop made by the trunkline vessels) will be Rotterdam. There will be several services feeding cargo into Rotterdam. Two vessels will feed cargo from Greenock, Scotland and Dublin, Ireland into Felixstowe, England. From Felixstowe the cargo will be transshipped to Rotterdam and loaded aboard the large ships. Two other feeder services will supply cargo from Sweden and Denmark. As Rotterdam has a natural attraction for German, French, and Belgian cargo, U.S. Lines will have good market coverage in Northern Europe.

The Mediterranean port will be in Marseilles, FOS; a container terminal built thirty miles from Marseilles. Cargo from Spain and Italy will be fed into FOS, as well as shipped in by rail from interior regions. U.S. Lines has been practicing "price absorption" in Europe, a practice where an ocean



carrier will subsidize the inland movement of cargo to a port in order to garner cargo.

The service will make two port calls in the Middle East. The first will be at Jeddah, Saudi Arabia. This is a major container port in the area with the seventeenth largest throughput of containers in 1982 (Containerization International Yearbook, 1984). The second mid-eastern call will be at the new container port of Khor Fakkan, which lies outside of the Straits of Hormuz in the United Arab Emirates (UAE). Cargo will be fed into Khor Fakkan from Kuwait, Pakistan, and Western India.

To date, no decision has been announced as to whether or not Colombo, Sri Lanka will be a line haul port. If not, the southern and southeastern Asian cargo will be fed into Singapore. It would make sense to stop in Colombo, Sri Lanka as it would drastically decrease feeder distances and related costs. Singapore will be serviced and cargo fed from Malaysia, Thailand and Indonesia.

The following port will be Hong Kong, then on to Kaoshiung which will receive cargo from the Philippines. Kobe, Japan will be serviced with cargo from Busan, Korea. The final port in the Far East will be Yokohama.

The vessels will proceed across the North Pacific to Balboa, and there is a great deal of speculation as to how much cargo will be transshipped at Panama from the former Delta and Moore McCormack operations. The United States line haul ports will be Savannah and New York with barge feeder services servicing other East Coast ports.

The total trip will take eighty four days, with service provided on a weekly basis. The ships will service seven of the top ten container ports in the world (Containerization International Yearbook, 1984). As proposed here, the total of thirty four countries will be served, including the South American nations. The route appears to give extensive worldwide coverage, which will enable the feeder services to capture more north/south cargo which is expected to increase in importance in the future, as well as link the three main cargo-producing regions in the northern hemisphere.

#### Advantages and Disadvantages of the RWS

If developed and operated properly, the RWS can give a shipowner flexibility which the operator of the point to point service does not enjoy. This flexibility can manifest itself in numerous ways, but, there are also some serious disadvantages of the system which could overcome this increased flexibility. The idea of running vessels on triangular and multi-leg routes has been used successfully in the past, most notably in the bulk trades. The application of this type of routing to the highly capital intense container business brings its own unique advantages and disadvantages.

The main advantage of the RWS is the fact that slots can be utilized more economically. The ships will load at one port for a multitude of ports, and the myriad of short haul possibilities can lead to greater slot utilization. The U.S. Lines system may be able to earn freight three or four times from one

slot on one global voyage. As each ship will service several trading areas, it will also be possible to obtain an optimum cargo stowage to effectively utilize the ship's time.

The route selected by U.S. Lines also offers certain advantages. The route connects the three main trading areas of the world, and is running in the right direction on the Pacific, which is the world's strongest route. There are numerous opportunities to feed in North/South cargoes which are expected to grow as the developing nations industrialize. There is room for expansion built into the system, and feeder services will be able to link certain geographic regions (Indian subcontinent, East Africa, etc.) with a truly economic linehaul service normally not available to them.

As a basically synergistic system, the RWS offers unique flexibility in its actual operation. Because it services multiple routes, the shipowner is able to cross-subsidize capital and marketing efforts from the stronger routes to the weaker routes. This will be especially important to U.S. Lines, which is operating under a high debt burden, and must work from a zero cargo base on certain routes.

Despite the aforementioned advantages, there are numerous disadvantages in the system leading many to believe that the RWS is not the formula for success. The users of the service will have to be introduced to its advantages and alter their shipping schedules accordingly. Although the RWS offers certain unique advantages to shippers, such as the ability to send unsold

merchandise around the world in search of a market, unless the benefits of the RWS are passed onto the shippers they may be led to believe the system is advantageous to ship operator's cost structures, while providing marginal benefits to the users of the system.

The system is complex, and requires constant fine tuning. A high degree of proficiency in cargo stowage will be needed to avoid problems of overstowage of containers, as well as overcarried and short-landed cargoes. The logistical problems of container positioning can be reduced by off-loading and onloading an equivalent number of containers in each port. In the context of positioning the containers, the Evergreen counter-rotating system provides superior flexibility over the U.S. Lines system, and requires less containers per ship in the pipeline.

Pertaining to costs, the U.S. Lines' RWS will suffer from high costs for worldwide administration, canal tolls, equipment and feeder services, in addition to the costs associated with double-handling of cargo. The RWS must also service non-economic routes. To fill these giant vessels will be quite a chore. The bottom line is that U.S. Lines will have to offer significant rate reductions or finance a tremendous marketing effort. The savings in per-slot ship costs afforded by the Econships may well be consumed by increased costs associated with running the entire system.

Round-the-World services have been shown to be only marginally superior to point-to-point services by computer model (Pear-

son and Garratt, 1982). The various approaches which have been utilized in the past by American President Lines and Barber Blue Sea, as well as current services by U.S. Lines, Evergreen, and Neptune Orient Lines, show significant differences in their philosophies. By adding to this equation the economies of scale of Econships, the debate is further complicated. Variations such as a horseshoe-shaped global itinerary have also been suggested as an alternative to RWS (Pearson and Fossey, 1984). Time will tell if RWS is indeed the direction toward which liner shipping will move.

CHAPTER THREE  
STORMCLOUDS ON THE HORIZON

Potential Protectionist Problems

As previously described, the RWS will provide service (direct or indirect) to thirty four nations practicing all forms of protectionist impediments. An attempt to analyze the impediments of all thirty four nations would be a major work in itself; therefore, the focus here will be on a regional basis.

The major crosstrades which U.S. Lines will be able to participate in include:

1. Europe/Middle East.
2. Europe/Far East and Southeast Asia/Europe.
3. Middle East/Far East and Southeast Asia.
4. Far East and Southeast Asia/Latin America.
5. Latin America/Europe.

There are numerous short haul trades in which the line could provide service. A. U.S. Lines spokesman has stated that up to 50 percent of the Company's revenues could be generated in the crosstrades in the future (American Shipper, 1983).

The degree to which a nation will impose an impediment is perhaps a direct manifestation of a nation's desire to establish, expand, or in some instances, halt the decline of its merchant fleet. Table 3 shows the merchant fleets of thirty four nations serviced by the RWS in 1972 and 1982. Although certain factors, such as the development of open registries, and increased efficiency of the newer container vessels are not taken into full account in this example, the table can be used to detect trends in these nations' merchant fleets.

Another assumption is that nations having government controlled fleets tend to have increased desires to protect those fleets, compared to nations having strictly commercially owned merchant fleets. Table 4 shows 18 of 34 nations operate government controlled fleets. It should be noted that all but two of these nations, France and Taiwan, will be indirectly served with foreign flag feeder services.

U.S. Lines could appease some of these governments by utilizing their flag vessels as feeders. Problems could still arise if one ship serviced several nations. If U.S. Lines line-haul service is in direct competition with services offered by a national line, hiring that nation's vessels as feeders may not reduce the impacts of impediments.

The different types of impediments employed by these thirty four nations are presented in Table 5. Eight of the thirty four nations practice all four types, while five do not

TABLE 3

NATIONS SERVED BY ROUND-THE-WORLD SERVICE  
Number of General Cargo Vessels  
1972-1982

	1972	1982
United Kingdom	819	375
Ireland	7	-
Netherlands	316	351
Denmark	202	315
Sweden	175	126
France	219	161
Spain	230	317
Italy	223	229
Saudi Arabia	6	82
UAE	-	4
Kuwait	27	21 (1983)
Oman	-	9
Pakistan	54	-
India	183	231
Bangladesh	2	-
Sri Lanka	-	-
Singapore	135	400
Malaysia (All Vessels)	19	86 (1983)
Indonesia	87	214
Thailand (All Vessels)	21	83 (1983)
Taiwan	101	111
Philippines	102	176
Korea	74	250
Japan	1148	707
Panama	528	1849
Columbia (All Vessels)	35	37
Ecuador (All Vessels)	8	42
Peru (All Vessels)	34	64
Chile (All Vessels)	47	35
Venezuela (All Vessels)	43	60
Brazil	148	192
Argentina	61	105
Uruguay (All Vessels)	18	19
Hong Kong		

Sources: Maritime Administration, A Statistical Analysis of the World's Merchant Fleets, 1972 and 1982

Seatrade Publications: Arab Shipping 1984, Far East Shipping 1984, Latin American Shipping, 1983



TABLE 4

NATIONS OWNING NATIONAL FLEETS SERVED BY  
ROUND THE WORLD SERVICES

Argentina  
Brazil  
Chile  
Columbia  
France  
India  
Indonesia  
Ireland  
Italy  
Kuwait  
Malaysia  
Pakistan  
Peru  
Spain  
Taiwan  
Thailand  
Uruguay  
Venezuela

Source: Records of the Federal Maritime Commission, 1980

TABLE 5

NATIONS SERVED BY ROUND-THE-WORLD SERVICE  
Political Impediments to Crosstrading

Nation	Codist	Government Protection	Commercial Practices	Treaties & Agreements
United Kingdom	Y*	Y	Y	Y
Ireland	Y*	Y	Y	Y
Netherlands	Y	Y	Y	Y
Denmark	Y*	Y	Y	Y
Sweden	N	N	N	N
France	Y*	Y	Y	Y
Spain	Y*	Y	Y	Y
Italy	Y*	Y	Y	Y
Saudi Arabia	N	N	N	N
UAE	N	Y	N	N
Kuwait	N	N	N	N
Oman	N	N	N	N
Pakistan	Y	N	Y	N
India	Y	Y	N	Y
Bangladesh	-	-	-	-
Sri Lanka	Y	N	Y	N
Singapore	N	N	Y	N
Malaysia	Y	N	N	N
Indonesia	Y	Y	Y	N
Thailand	N	Y	N	N
Taiwan	N	Y	Y	Y
Philippines	Y	Y	Y	N
Korea	Y	Y	Y	Y
Japan	Y*	N	N	N
Panama	N	N	N	N
Columbia	N	Y	Y	N
Ecuador	N	Y	N	N
Peru	Y	Y	N	Y
Chile	Y	Y	N	Y
Venezuela	Y	Y	N	Y
Brazil	N	Y	N	Y
Argentina	N	Y	N	Y
Uruguay	-	-	-	-
Hong Kong	N	N	N	N

\* Has stated Intention of Ratifying the Code.

Source: Manalytics, Inc. U.S. Flag Cross-trading, 1984

impose any impediments to crosstrading. An analysis of this type is weakened by not showing the intensity of the application of an impediment.

An example of this weakness is evident in the case of Brazil, which practices only two forms of protectionism. However, Brazilian trades are among the most restricted in the world, due to a plethora of bilateral agreements, and severe government protection. In spite of this weakness, Table 5 can be used to detect potential problem areas when used in conjunction with a priori knowledge.

The first region to be considered is Europe. Of the eight nations considered, three show a decline in number of vessels between 1972 and 1982. The others recorded modest growth. Four of the nations owned government fleets. All of the nations practiced all forms of protectionism; except for Sweden which practices none. It would seem that Europe has incentive to increase their impediments to halt the decline of certain fleets, and encourage the growth of national fleets.

U.S. Lines is especially interested in the crosstrades between Europe and the Middle East, Southern Asia, and the Far East regions. The main impediments to U.S. Lines' success in these trades are the existing strong, closed conferences.

In 1984, the Far Eastern Freight Conference (FEFC), carried 73 percent of the Europe/Far East trade. U.S. Lines has been running as an independent; however, a time may come when U.S. Lines may choose to enter appropriate conferences, to assure stability of cargo and rates as supplied by these

conferences. This may be disallowed due to the closed nature of the conferences. This subject has been the central issue in the C.S.G. negotiations (Seatrade, 1984).

In addition to closed conferences, a corollary issue in the C.S.G. talks has been ways in which various nations in the EEC implement the UNCTAD Liner Code. Although all nations in the EEC have become signatory to the Code with the Brussels Package reservations, each nation has retained ability to ratify the Code as they feel fit. Of these survey nations, only the Netherlands has ratified the Code at present. One United States fear concerning the Code is that unused shares of cargo flowing between the EEC and developing nations would be allocated to the fleets of other EEC members. If the Code is applied in a very broad sense in European crosstrades, the independent operators, such as U.S. Lines, and Taiwanese lines Yang Ming and Evergreen, could suffer considerably.

In the Middle East, Saudi Arabia experienced a rapid increase in merchant ships between 1972 and 1982. The other nations have nominal fleets of general-cargo vessels. A trend in this region is cooperation between nations. The United Arab Shipping Company (UASC) is the national flag line of six countries: Bahrain, Iraq, Kuwait, Qatar, Saudi Arabia, and the U.A.E. In 1983, the UASC increased its container capacity by 50 percent. UASC has filed an application for entrance into the FEFC, which would put it in competition with U.S. Lines in the Europe/Far East trades. The National Shipping Company of

Saudi Arabia (NSCSA) has increased its containership fleet considerably, and will vie for cargo flowing to the Far East with U.S. Lines (Rose, 1984).

The Arab countries are attempting to achieve the goals of the development strategy for the third United Nations Development Decade, which is trying to create a situation where 20 percent of the world's fleet is owned by developing nations (Salman Ad-Hashim, 1983). At the present time, none of the study nations in the Middle East practice impediments. Because of their low labor costs and petroleum self sufficiency, these fleets may be able to increase their market share without resorting to protectionist measures.

The Southern Asian region is typified by a great deal of protectionism. Of the study nations, only India showed an increase in the size of her merchant fleet according to the data available. Pakistan and India have nationally controlled fleets. All of the nations in this region practice some form of protectionism. At present, with no port calls by the line-haul vessels made public by U.S. Lines, this region will be served by feeder services to the U.A.E. and Singapore. Sri Lanka has taken the unprecedented step of chartering vessels from Maersk Line of Denmark to act as its national flag carrier. There are no indications of a serious increase in protectionist actions in South Asia in the near future (Manalytics, 1984).

In the Southeast Asian region, all five of the nations belonging to the Association of South East Asian Nations Bloc (ASEAN) showed sizeable gains in general-cargo fleets from 1972 to 1982. These five nations consist of Thailand,

Singapore, Malaysia, Indonesia, Phillipines, four of which own national fleets. These nations are split on the Code, as Thailand and Singapore have not become signatory, and the remaining three have all ratified. The ASEAN nations are polarized as to protectionism. Singapore and Malaysia are in the "open seas" camp, the Philippines and Indonesia support cargo reservation, and Thailand has no clear-cut policy. ASEAN recently agreed to the need to reserve as much trade as possible for ASEAN flags, using modified UNCTAD type legislation. In spite of this agreement, it seems the ASEAN camp will remain divided with increasing problems in Indonesia and the Philippines and no changes in the other nations (Journal of Commerce, 1985).

The nations serviced in the Far East region consist of Hong Kong (territory of U.K.), Taiwan, Korea and Japan. Between 1972 and 1982, Japanese and Korean fleets were greatly expanded, while that of Taiwan grew modestly, and the fleet of Hong Kong remained the same. In this region, only Taiwan has a national fleet. Concerning protectionism, Korea is the problem child which practices all forms of protectionism. The Korean Government has increased its involvement in maritime affairs. Its financial community has a large stake in the RWS, therefore, it is doubtful that Korea will take any action which would hurt U.S. Lines, such as strict enforcement of the Korea - Taiwan bilateral agreement.

Japan has announced intentions to ratify the UNCTAD Code, and the way the Japanese implement the Code may have bearing upon the success of U.S. Lines in Japanese trades. Hong Kong has no cargo preference laws. Taiwan has erected protectionism for certain commodities, but, as Taiwan has built a huge fleet of vessels which will offer round-the-world services, it seems in Taiwan's best interests to keep cross-trades open.

Of nine Latin American nations potentially serviced, six showed substantial gains in number of general-cargo vessels between 1972 and 1982. Seven of these nine operate government fleets. Thus, it is obvious that Latin nations are heavily emphasizing the development of their merchant fleets. With the acquisition of Moore McCormack and Delta Lines, U.S. Lines will be a force in the Latin/U.S. trade. However, the ability of U.S. Lines to crosstrade in this region is questionable.

Only three of these nine nations have acceded to the Code: Chile, Peru, and Venezuela. However, government protectionism is practiced by all nations, with the exception of Panama. Bilateral agreements, government impelled cargoes, and pooling arrangements abound in Latin trades. The U.S. Lines' strategy in Latin America seems to be carriage of cargoes from the Far East to Panama for transshipment by smaller vessels. Outbound, the service could accept cargoes for the United States, Europe, or the Middle East. Due to the preponderance of agreements between Latin and European nations, and the strong presence of carriers from both sides, the ability of U.S. Lines to capture

outbound crosstrade cargoes is considered questionable.

The biggest trend in Latin shipping is the fact that it is rapidly being containerized (Fells, 1982). Another trend which may develop is the rise of "continentalism" in shipping (Climent, 1983). The pooling of resources and expertise will make growing Latin shipping presence even more powerful, if achieved.

With the exception of the Middle East, U.S. Lines faces impediments to cargo access in every region in which it provides RWS. The intensity of application of cargo preference measures is dependent upon many factors. These factors include our international relations, as well as the general state of the world economy.

#### Measuring the Effectiveness of U.S. Policy

The attempt to measure the effectiveness of any policy is based on a great many assumptions due to the large number of intangible factors. An effective policy is one which can obtain the stated objectives without causing due harm to other, sometimes unrelated interests. Maritime policy falls within the field of foreign affairs. Any international policy must fall within the general philosophy of a nation towards other nations. Many considerations must be taken into account, including geopolitical, as well as cultural and economic interests. To further complicate matters, foreign policy must strive to appease domestic interests as much as possible in achieving its objective.



Table 6 shows the level of bilateral liner trades (by weight) and, also the balance existing in those trades. European level of trades are generally heavy. Most trades are fairly balanced, with the exceptions of trades with France and Italy, which are balanced in favor of Europeans. The United Kingdom is also an exception which is balanced in favor of the United States; and, in the case of Saudi Arabia, grossly so. The trades of ASEAN nations are fairly balanced by weight. In the Far East regions, Japanese trade, by far the heaviest, shows a balance in favor of the United States. The imbalanced trades in Latin America are the Venezuelan trade, which favors the United States and the Brazilian trade, which favors Brazil.

An assessment by weight does not give a good indication of the balance of trade value. However, trades which are imbalanced by weight can have significant impacts on ship operations, which can be exacerbated by political impediments:

Table 7 shows nine elements which should be taken into account by United States maritime policy-makers when responding to crosstrade impediments. These factors will be analyzed with regard to nations involved in the U.S. Lines Round-the-World service. Some factors will be more heavily considered than others. Using a great amount of assumptions, an attempt will be made to measure the effectiveness of certain policy initiatives in certain geographic regions.

TABLE 6

NATIONS SERVED BY ROUND-THE-WORLD SERVICE  
Level of U.S. Liner Trade 1982

Nation	Imports From U.S. (Tons)	Exports To U.S. (Tons)
United Kingdom	1,136,643	805,315
Ireland	67,691	62,037
Netherlands	880,531	738,646
Denmark	116,988	196,520
Sweden	227,688	241,086
France	580,289	929,986
Spain	367,864	521,979
Italy	628,658	1,394,219
Saudi Arabia	1,479,381	5,225
UAE	229,360	2,389
Kuwait	145,736	973
Oman	31,508	103
Pakistan	169,918	40,695
India	532,993	257,356
Bangladesh	150,927	88,102
Sri Lanka	78,090	41,099
Singapore	455,505	169,448
Malaysia	154,045	279,113
Indonesia	543,944	488,954
Thailand	218,147	273,152
Taiwan	1,671,510	1,980,320
Philippines	443,383	335,992
Korea	1,493,816	927,650
Japan	4,277,047	3,424,935
Panama	191,244	64,828
Columbia	326,293	148,202
Ecuador	211,040	336,775
Peru	311,510	193,667
Chile	213,910	314,425
Venezuela	1,017,620	24,896
Brazil	351,288	1,210,119
Argentina	267,015	258,914
Uruguay	22,454	15,614
Hong Kong		

TABLE 7

SECTION I:

Factors To Consider When Responding To  
Crosstrade Impediments

1. Level of bilateral trade with the United States.
2. Balance of trade between Imports and Exports.
3. Level of Flag Carriage of bilateral trade.
4. Extent of crosstrades in U.S. trades.
5. Treaties in force between the two nations.
6. Economic Aid extended to the Foreign country.
7. Military Aid and Military Importance.
8. Supplier of Strategic Materials
9. The level of cargo at stake, and the economic impact to U.S. carriers at loss.

\* Source: Manalytics, Inc.  
U.S. Flag Crosstrading, 1984

\*(Includes Section II, Table 8)

The top ten crosstraders in U.S. trades are presented by nationality as well as flag, in Section II of Table 7. Of these top ten crosstraders shown, seven of the top ten by nationality, and six of the top ten by flag are serviced by Round-the-World service, and have a vital interest in keeping the crosstrades open.

Table 8 shows the percentage of U.S. trade compared to each nation's total trade, and vice-a-versa, as well as the ranking of the United States as a trade partner. The United States was the number one partner in eleven of thirty-four cases, and in the top five of trading partners in all cases. The United States trade was most important to several Latin and Far Eastern nations. Japan is overwhelmingly the most valuable trading partner, with the United Kingdom placing second, and Saudi Arabia in third place.

Table 9 shows the amount of direct economic and military aid given to survey nations receiving funds from the Agency for International Development (AID). Also shown in Table 9 is the amount of aid those nations receive from international organizations which the United States contributes to. There are other private and public organizations which provide direct aid, as well as numerous loans and other forms of economic assistance. The AID contribution is a representative case to show where funds may be flowing. A majority of direct aid flows to the Southern Asian regions, with ASEAN countries next in line.

The problem of military assistance is complex, as large amounts of covert aid and arms sales are financed under the

TABLE 7 (Continued)

SECTION II:

Top Ten Crosstraders in U.S. Trades

A. By Nation:

1. West Germany
2. Denmark
3. Norway
4. United Kingdom
5. Australia
6. Japan
7. Hong Kong
8. Sweden
9. Taiwan
10. Netherlands

B. By Flag: \*

1. Panama
2. West Germany
3. Liberia
4. Denmark
5. United Kingdom
6. Singapore
7. Greece
8. Norway
9. Netherlands
10. Sweden

\* 13 (b)(5) would be an effective response

TABLE 8

## NATIONS SERVED BY ROUND THE WORLD SERVICE

Percentage of U.S. Trade to Total Trade  
Percentage of Nations Trade to Total U.S. Trade

Nation	Value US \$		Nation Trade/Total US %
	US Trade	Total Trade	
United Kingdom	11	(2)*	5.0
Ireland	13	(2)	0.2
Netherlands	9	(3)	1.0
Denmark	7	(4)	0.3
Sweden	14	(3)	0.8
France	8	(4)	2.3
Spain	14	(1)	0.6
Italy	7	(3)	2.3
Saudi Arabia	21	(1)	3.1
UAE	13	(2)	0.8
Kuwait	14	(2)	-
Oman	7	(3)	-
Pakistan	10	(2)	-
India	12	(1)	0.6
Bangladesh	11	(3)	-
Sri Lanka	6	(5)	-
Singapore	13	(3)	0.9
Malaysia	15	(2)	0.8
Indonesia	15	(2)	1.8
Thailand	13	(3)	0.4
Taiwan	--	-	-
Philippines	23	(1)	0.8
Korea	23	(2)	2.4
Japan	18	(1)	15.8
Panama	34	(1)	-
Columbia	35	(1)	0.3
Ecuador (1981)	39	(1)	0.5
Peru	34	(1)	0.4
Chile	22	(1)	0.3
Venezuela	48	(1)	2.0
Brazil	15	(2)	1.8
Argentina	23	(1)	0.5
Uruguay	10	(3)	-
Hong Kong	10	(3)	2.3

Source: 1982 Yearbook of International Trade Statistics,  
 United Nations

\* ( ) : U.S. Ranking as a Trade Partner

TABLE 9

## NATIONS SERVED BY ROUND-THE-WORLD SERVICE

1982 Aid Recipients (In Millions/U.S. Dollars)

NATION	Direct Aid Received	Military Assistance	Total From Int'l Organizations
United Kingdom	--	--	--
Ireland	--	--	--
Netherlands	--	--	--
Denmark	--	--	--
Sweden	--	--	--
France	--	--	--
Spain	22	127	40
Italy	52	--	--
Saudi Arabia	--	--	--
UAE	--	--	--
Kuwait	--	--	--
Oman	15	30	17
Pakistan	200	260 (1983)	555
India	221	.1	2,287
Bangladesh	172	.2	599
Sri Lanka	71	2.1	170
Singapore	--	--	--
Malaysia	--	--	--
Indonesia	91	42	1,394
Thailand	36	80	874
Taiwan	--	--	--
Philippines	107	51	694
Korea	--	--	--
Japan	13	16	127
Panama	--	--	--
Columbia	23	5	444
Ecuador	--	--	--
Peru	--	--	--
Chile	--	--	--
Venezuela	--	--	--
Brazil	--	--	--
Argentina	--	--	--
Uruguay	--	--	--
Hong Kong	--	--	--

Source: Agency for International Development  
Congressional Presentation, Fiscal Year 1986, 1984

Foreign Military Sales Program (FMS). The primary recipient of direct assistance was Pakistan, followed by several ASEAN countries next in line for arms. In geopolitical terms, the Round-the-World service stops in most of the more strategically important areas of the world. Of vital importance to military strategy in the United States are Europe (NATO), the Middle East (oil), Japan and the Philippines (allies and sites of major overseas deployments), as well as the Panama Canal; and this could have profound effects on maritime policy.

Another strategic consideration is the supply of materials considered vital to the United States economy and military. Of prime importance is oil, and the Middle East and Venezuela are key suppliers. Of non-oil materials, Brazil supplies manganese (19 percent of imports from 1977-1980), and the Philippines supplies chromite (15 percent of imports from 1977-1980).

The nature of treaties in force between two nations can also exert an influence on maritime policies. Besides treaties for security reasons, there are treaties named Treaties of Friendship, Commerce and Navigations (FCN). The United States has FCN treaties with twelve of the thirty four survey nations in all regions except Southern and Southeast Asia. Since an FCN treaty is basically a statement of goodwill, the application of equal access to trade provisions may be of questionable relevance to U.S. maritime policy.

The final two factors to be considered in assessing the potential policy responses are the level of carriage of the two nations at either end of a crosstrade route, and amount of cargo



potentially at risk. These are situation-dependent variables which are difficult to analyze.

Table 10 shows the effectiveness of several maritime responses to crosstrade impediments in the survey nations. The parameters for the effectiveness of responses is also included at the bottom of the table. Tariff suspension under Section 13(b)(5) would be effective in eight of thirty four cases; primarily in European and Far Eastern nations, as well as open registry nations crosstrading in U.S. trades. Denial of access to U.S. ports, or the imposition of operating restrictions would be effective in twenty three of thirty four cases, which reflects the importance of U.S. trade to many nations.

Table 11 shows the effectiveness of non-maritime responses to crosstrading, including parameters listed at the bottom of the table. Increased duties or the imposition of embargoes or quotas, which can be protectionist as well as punitive, would be effective in twenty eight of thirty four cases. The exceptions are in the EEC where the nations' mutual trade is as important as U.S. trade.

The alteration of direct economic assistance would be effective in thirteen of thirty four cases. This would be effective in the Southern and Southeast Asian regions, and certain Latin nations as well. The alteration of direct military aid would be effective in nine cases. Some of the complexities of military aid and arms sales were alluded to earlier.

TABLE 10

NATIONS SERVED BY ROUND-THE-WORLD SERVICE

Effectiveness of Maritime Responses

Nation	13(b)(5) Tariff Suspension	Deny Nat'l Vessels Port Access/ Impose Operating Restrictions
United Kingdom	Y	Y
Ireland	N	N
Netherlands	Y	Y
Denmark	Y	Y
Sweden	Y	Y
France	N	N
Spain	N	Y
Italy	N	Y
Saudi Arabia	N	N
UAE	N	N
Kuwait	N	N
Oman	N	N
Pakistan	N	Y
India	N	Y
Bangladesh	N	Y
Sri Lanka	N	N
Singapore	Y	Y
Malaysia	N	N
Indonesia	N	Y
Thailand	N	N
Taiwan	Y	Y
Philippines	N	Y
Korea	N	Y
Japan	Y	Y
Panama	Y	Y
Columbia	N	Y
Ecuador	N	Y
Peru	N	Y
Chile	N	Y
Venezuela	N	Y
Brazil	N	Y
Argentina	N	Y
Uruguay	N	N
Hong Kong	N	N

13(b)(5): Yes, if top ten crosstraders in U.S. trades by nation or flag.

Deny Access: Yes, if nation's flag carriage in U.S. trades is greater than 10 percent (imports/exports) or a major crosstrader in U.S. trades.

TABLE 11

NATIONS SERVED BY ROUND-THE-WORLD SERVICE  
Effectiveness of Non-Maritime Responses

Nation	Increased Duties	Alter Aid	
	Embargoes-Quotas	Economic	Military
United Kingdom	Y	N	N
Ireland	Y	N	N
Netherlands	N	N	N
Denmark	N	N	N
Sweden	Y	N	N
France	N	N	N
Spain	Y	Y	Y
Italy	N	Y	N
Saudi Arabia	Y - Oil	N	N
UAE	Y - Oil	N	N
Kuwait	Y - Oil	N	N
Oman	N	Y	Y
Pakistan	Y	Y	Y
India	Y	Y	N
Bangladesh	Y	Y	N
Sri Lanka	N	Y	N
Singapore	Y	N	N
Malaysia	Y - Tin	N	N
Indonesia	Y	Y	Y
Thailand	Y - Tin	Y	Y
Taiwan	Y	N	N
Philippines	Y - Chromite	Y	Y
Korea	Y	N	N
Japan	Y	N	N
Panama	Y	Y	Y
Columbia	Y	N	N
Ecuador	Y	Y	Y
Peru	Y	Y	Y
Chile	Y	N	N
Venezuela	Y - Oil	N	N
Brazil	Y - Manganese	N	N
Argentina	Y	N	N
Uruguay	Y	N	N
Hong Kong	Y	N	N

Increased Duties: Yes, if trade with U.S. greater than  
10% total trade by value.

Alter Aid: Yes, if significant amount given.  
Materials have strategic importance which may effect policy.

In conclusion, the most favored policy responses, on a regional basis, would be:

Europe:	13(b)(5), tariff suspension or operating restrictions
Middle East:	none, given survey parameters
Southern Asia:	alteration of economic and military aid or quotas
Far East:	13(b)(5), tariff suspension or operating restrictions
Latin America:	operating restrictions and embargoes

The use of embargoes, quotas and alteration of aid have not proven effective in other areas of foreign affairs. The emphasis in our maritime policy should be on maritime responses. The linkage to non-maritime responses should only be made in cases of severe damage to U.S. carriers. This type of policy is effective with major maritime nations. The response to non-maritime nations should be to continue the current policy of tailoring responses to each situation. Thus, there are no specific policies which U.S. Lines can request the Government to implement that would satisfy their needs in all geographic areas.

#### Outlook for the Future

Protectionism is a trend which will surely continue, and increase in strength in the future. Indeed, the current

strength of the dollar has increased protectionist pressures in our own nation. It is evident that U.S. Lines faces impediments in every region, and the level of aid it can expect from the Government in fighting these impediments varies considerably by region. Future events which may very well bring protectionism to a boiling point include:

1. A newly revised and more implementable UNCTAD Liner Code in 1988.
2. The proliferation of bilateral agreements.
3. A serious shake-out in liner shipping, which many believe will occur in the next several years (Muller, 1985).
4. A serious loss of cargo carried by conferences such as the FEFC, causing a backlash upon independents.
5. An increase in commercial impediments and agreements, such as the Maersk/Sri Lanka pact, which exclude other carriers from certain trades.
6. The sale of older container tonnage, in lieu of scrapping, to developing nations.

The United States has already successfully, if only temporarily, imposed its will to keep the seas open in dealings with the Philippines, Korea, and several Latin nations. The application of our policy to crosstrades awaits its first usage; however, speculation as to its effectiveness abounds. In any case, it is certain that any United States response to crosstrading impediments will have only limited international support.

Perhaps a more viable method of combatting protectionism is to utilize a more commercial tact. Increased cooperation between

United States carriers and foreign carriers is now underway. American shippers are participating in C.S.G. and other negotiations through the Shippers for Competitive Ocean Transportation (SCOT) organization (Jessen and Davis, 1985). The goal of both carriers and shippers should be to reduce the government's role in solving maritime problems.

U.S. Lines will have to develop an effective dialogue with both foreign governments and carriers in order to exhaust all remedies before the FMC is forced to step in and deal with the linkages that cause such complexity in foreign policy.

## CHAPTER FOUR BREAKDOWN OF OPERATING COSTS

### Introduction

In order to properly assess the impact of political impediments upon an RWS, it is necessary to understand the economic viability of the system. Due to the lack of proprietary information, as well as the complexity of certain factors, (freight rates, port pricing, administration), this breakdown of costs is merely a thumbnail sketch. As the RWS is a "through" system which incorporates feeder service and land transport aspects, a ship's costs are only a fraction of system costs. A recent estimate places this ration between 25 percent and 35 percent (Seatrade, 1985b).

Three sources were used primarily in the analysis of vessel operating costs. The differences in the methods of describing ship costs has been elaborated upon in Chapter One. The breakdown used in this study was presented in Management and Operating of American Shipping, by E. Frankel. A second source was a 1979 Maritime Administration study on daily operating expenses, using a C-8 containership's expenses. The final source is a study of the U.S. Lines RWS by the accounting firm of Laurence Prust and Co., the results were published in Fairplay Shipping Weekly (Fairplay, 1985). The Prust

data was used as a reference point, and some data was used to fill in gaps in the analysis.

### Fixed Costs

The first class of costs to be studied are fixed costs. These include costs for capital, crew, insurance, and general administration. Fixed costs are those which remain steady, in spite of changes in scheduling or routing of the vessel.

The largest single element involved in the daily operating costs of a containership is the debt incurred in building the vessel and the necessary amount of containers. In the case of the Econships, the hulls cost \$47.5 million each. It is estimated that each vessel will require two full sets of containers (estimated at \$6,000 per 40 foot container). Factors such as depreciation and taxation will not be considered to simplify the analysis.

There are various methods in estimating the actual costs involved in purchasing a ship. These include the net present value method, the payback method, and the internal rate of return, among others. Many of these methods utilize "net cash flows" which represent the change in the company's cash receipts and expenditures as a result of the project in question.

If some estimate of future cash flows could be made, the aforementioned methods would be useful in measuring viability of the RWS system. However, since we are merely attempting to breakdown the financial costs associated with a single vessel,



a good starting point is to utilize the present value of an annuity method. This method measures the value at present of annual payments made over a given time period at a certain rate of interest (Slogget, 1984). The formula for this method is:

$$PV = \text{Annuity (x)} \times \text{PVIF}$$

where PV = Present Value of Investment

X = Yearly Payment

PVIF = Present Value Interest Factor

To calculate PVIF, tables are used which are derived from the following formula:

$$PVIF = \frac{1 - \left( \frac{1}{(1+r)^t} \right)}{r}$$

where r = Interest Rate

t = Time over which financing is arranged

In the case of the hull, the shipyard financed 80 percent of the \$47.5 million cost at 9 percent over ten years. The line financed the 20 percent down payment by taking various loans with a floating rate (approximately 12 percent) over a twelve year period.

The present value of both down and deferred payments were calculated, along with the present value of the annuity for both, in order to determine a total annual payment. The resulting

annuity totalled \$6,519,265 per ship/year, which translates to a hull financing cost of \$17,861 per day.

In calculating the number of containers purchased per vessel, several factors must be considered. The first is that two and one half to three sets of containers are required per vessel. Other factors to be considered include the fact that U.S. Lines is stressing forty foot containers, and already owns a considerably large amount of containers and chassis (1982 - U.S. Lines owned thirty thousand containers and fifteen thousand chassis). In view of this information, two sets of forty foot containers per vessel seem sufficient. At an estimated cost of \$6,000 per container, the present value of the annuity for forty-four hundred containers was calculated at \$4,667,976, translating to a daily finance cost for containers of \$12,788.

Frankel (1981) stated an average yearly cost of an American seaman in 1981 to be \$51,020, including wages and benefits. This cost was appreciated at 6 percent per year, providing an estimated annual cost of \$72,885 per seaman in 1985. The annual costs of two complete crews of twenty one seamen totaled \$3,061,200, translating to a daily cost of \$8,500, as stated in the Prust study (Fairplay, 1985).

Frankel, Prust and MARAD all state insurance costs to be \$1,800 per day, which was used in this analysis. Both hull and Protection and Indemnity insurance are included in this amount.

The cost of administration is a thorny issue. The amount to be attributed to ship costs versus system costs is difficult to determine. However, one certain fact is that RWS will require

a worldwide administrative network. With the exception of the Europe/Far East route, U.S. Lines has an existing administration; due to former service in those areas or through the acquisition of Delta Lines and Moore-McCormack Lines.

Frankel (1981) estimated administration costs account for 22 to 35 percent of operating costs. RWS would certainly be in the top of that category. These costs will be borne by twelve vessels on an identical route. In this analysis, administrative costs were considered to be 36 percent of total operating costs. This figure was then divided by twelve to estimate per ship costs, which amounted to \$1,700 per day. This daily costs figure is considerably higher than the \$1,000 per day figure as provided in the Prust study.

As a result, fixed costs accounted for a total of \$42,650 per day in operating costs, or 66 percent of total operating costs. As such a high percentage of operating costs are not within a shipowner's ability to change, this can explain why shipowners act as they do in many cases (i.e., inflexibility to change, etc.).

#### Variable Costs

Variable costs are those within a shipowner's ability to alter given changes in routing, scheduling, or operating procedures. In a routing strategy such as the RWS, some costs may indeed be fixed in nature, but the service has yet to be developed so they are considered as variable. A further distinction

will be made between those incurred at sea versus those incurred in port.

Of variable costs, fuel and lube costs make the largest contribution to operating expenses. The Econships are rated to burn approximately seventy three tons of bunker C fuel per day. An average of \$190 per ton for 180 C.S.T. bunker fuel, or a daily average of \$13,870 was derived from the Journal of Commerce for a week's period of April 8 through April 12, 1985.

Lube oil costs, obtained from MARAD data and Frankel as no figures could be found, resulted in the daily cost of approximately \$1,000. Econships carry enough fuel to make a full trip, allowing bunkering where prices are cheapest. At the time of this writing, Singapore was the port with the cheapest bunkers on the proposed route, with a price of \$180 per ton.

It can be assumed that in port one of three 1000-kilowatt generators on the Econships will be running at all times. From industry sources, it has been determined that a generator of this capacity will burn between sixty-two and sixty-three gallons per hour. At a cost of one dollar per gallon for diesel fuel, daily fuel costs for periods in port will be approximately fifteen hundred dollars.

The next major variable cost is that of supplies and miscellaneous expenses; the general category allocated for any unexpected expense. U.S. Lines will have the advantage in the acquisition of deck and engine stores, as it is able to buy in large quantities where these items are cheapest worldwide. In

conjunction with computerized inventories, supply costs can be kept down. Frankel (1981) uses an estimate for supply and miscellaneous expenses of 3.8 percent of operating expenses. This figure was utilized, and a figure of \$2,300 per day was the result. Although this figure is considerably higher than that provided by Prust, until potential problems with the vessels or their designs are resolved, a higher figure for miscellaneous expenses is justified.

Maintenance and repairs are another variable cost. Included in this category are annual surveys, as well as regular hull and engine maintenance. Maintenance costs increase as a vessel ages, constituting an increasing percentage of operating costs. The size of a vessel is also a factor to be considered. Econships will require special dry-docking facilities, as well as specialized equipment to effect engine and hull maintenance.

A non-economic factor is the policy of the U.S. Government on taxation of items acquired abroad, in addition to the use of foreign shipyards. Although the Econships are not subsidized, other U.S. Lines vessels are; therefore, the company must abide by certain subsidy obligations. Recent legislation may ease the burden in this regard. Both the Prust study and Frankel concur on the figure of \$1,800 per day, thus, this figure was used in this analysis.

The final costs to be considered are those for port and canal charges. The figure of \$1,500 per day, provided by Prust, was utilized, given the complexity and dynamic nature of port pricing. Many ports develop their own formulas for charging for use of their facilities, causing prices to be in a state

of constant flux. This can be attributed to intense inter-port competition, as ports vie for load center status.

Table 12 provides the tolls for the Suez and Panama Canals. One feature of the RWS is it incurs a great amount of canal related costs. Per information from an industry source, \$1,600 per day could be accounted for; however, the data was incomplete in costs associated with the Panama Canal, and the Prust figure of \$3,000 per day is more realistic. Despite its shortcomings, Table 12 indicates the high expenses an Econship incurs in transmitting the canals.

Table 13 is a summary of the breakdown of operating costs. It can be seen that the costs involved in operating an Econship total \$23 million per annum, or \$63,000 per day. This is several thousand dollars higher than the Prust study given more emphasis on miscellaneous and administrative costs.

For the large amount of container capacity they afford, the Econships compare favorably with any other containerships on a per day basis. Seatrade, (1985, c), states a figure of \$38,000 per day for an Evergreen G-class vessel, and \$42,000 for a five year old, 1500 TEU European vessel. On the basis of hardware, U.S. Lines is more than competitive.

#### System Costs and Potential Earnings

The major goal of most containership operators today is to reduce the cost per container-mile to the lowest possible level, sometimes called a unit or slot cost. Given the



TABLE 13

U.S. LINES "ECONSHIPS"  
OPERATING COSTS

A. General Information

Eastbound Voyage	83 days	
Nautical Miles	26,744	Total Distance
Time At Sea/Voyage	62 Days	
Time In Canals/Voyage	3 Days	
Port Time/Voyage	19 Days	
Voyage/Annum	4.3	
Distance/Annum	157,999.2	
TEU Miles/Annum	690 Million	
At Sea/Annum	267	
Canal Time/Year	12	
Port Time/Year	86	

B. Fixed Costs Per Day

Hull Financing	\$17,861
Container Financing	12,789
Crew Costs	8,500
Insurance Costs	1,800
Administration Costs	<u>1,700</u>
Total:	\$42,650

C. Variable Costs Per Day At Sea

Fuel Costs	\$13,870
Lube Oil Costs	1,000
Maintenance and Repair	1,800
Supplies and Miscellaneous	<u>2,300</u>
Total:	\$18,970

D. Variable Costs Per Day in Port/Canal

Fuel and Lube Costs in Port	\$ 1,500
Port Charges	6,200
Maintenance and Repair	1,800
Supplies and Miscellaneous	<u>2,300</u>
Total:	\$11,800

Canal Charges Per Day: 3,000 (365 days)



TABLE 13

U.S. LINES "ECONSHIPS"  
OPERATING COSTS - ANNUAL TOTALS

E.	<u>Fixed Costs</u>	
	Hull Financing	\$ 6,519,265
	Container Financing	4,667,985
	Crew Costs	3,102,500
	Insurance Costs	657,000
	Administration Costs	<u>628,628</u>
	Total Per Annum	\$15,575,378
F.	<u>Variable Costs</u>	
	AT SEA:	
	Fuel and Lube	\$ 4,040,804
	Maintenance and Repair	488,700
	Supplies/Miscellaneous	<u>670,075</u>
	Total Per Annum/At Sea	\$ 5,199,579
	IN PORT:	
	Fuel and Lube	\$ 141,900
	Port Charges	547,500
	Maintenance and Repair	170,280
	Supplies/Miscellaneous	217,580
	Canal Charges	<u>1,095,000</u>
	Total Per Annum/In Port	\$ 2,172,260
	TOTAL PER ANNUM	\$22,947,217
	TOTAL PER DAY	\$ 62,869
G.	<u>Cost as Percentage of Total Costs</u>	
	Fixed Costs:	66 Per Cent
	Variable/At Sea:	24 Per Cent
	Variable/In Port:	4 Per Cent
	Canal Charges:	6 Per Cent

proposed itinerary and cost structure, the unit costs for an Econship are shown in Table 14, for various load factors. The unit costs calculated are approximately one half of those associated with a five year old European ship (Seatrade, 1985 c). A major reason for the current excess of containerships on the world market is the fact that decreased manning, increased fuel efficiency, and economies of scale can reduce costs.

However, it must be remembered that the seaborne leg of a door-to-door container shipping service may not constitute a major part of the total shipping costs. As for U.S. Lines, even a great reduction in unit costs offered by Econships may not warrant the kind of investment which has been made, given current market conditions. The numbers for daily operating costs and unit costs for the Econships are impressive, but one must consider the system as a whole to get an idea of the viability of the RWS. The fact that U.S. Lines is concentrating their efforts on forty foot containers indicates a desire to extend economies of scale to the feeder and inland legs of the RWS.

If the ship costs represented only a third of system costs, the RWS would require fairly high load factors, utilizing the operating cost structure given in this analysis. This assumption is based on a simplified freight rate structure. The goal of Malcolm McLean must be to achieve economies of scale on land, which would increase the ratio of ship costs to system costs nearer to forty or fifty percent. Table 15 illustrates the freight rates which could be offered on certain routes if the ship cost/system cost ratio reached 50 percent. In this type of analysis, the ability of U.S. Lines to undercut is high.

TABLE 17

U.S. LINES "ECONSHIPS"  
OPERATING COSTS

UNIT COST PER CONTAINER MILE

<u>Utilization</u>	100%	3.5 Cents/Container/Mile
	75%	4.6 Cents/Container/Mile
	50%	6.9 Cents/Container/Mile
	25%	13.8 Cents/Container/Mile

COST OF DIVERSION OF VESSEL

<u>Per Mile of Diversion</u>	\$146.00
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POTENTIAL REVENUES PER VOYAGE

<u>Utilization</u>	100%	\$ 21,000,000
	75%	15,750,000
	50%	10,500,000
	25%	5,250,000

POTENTIAL REVENUES BASED ON:

<u>Full Load</u>	-	Europe/Middle East/Far East	\$1500/TEU
<u>Full Load</u>	-	Far East/North America	\$2000/TEU
<u>Full Load</u>	-	North Atlantic	\$1500/TEU

TABLE 15

## REQUIRED FREIGHT RATES AT 75% UTILIZATION

ROUTE	TO MEET SHIP'S COSTS	TO MEET SYSTEM'S COSTS*	ESTIMATED CURRENT RATE
N. America/N. Europe	160	320	1,000
N. America/Mediterranean	260	520	1,200
N. America/Mideast	362	724	1,500
N. Europe/Mideast	222	444	1,000
N. Europe/Far East	435	870	1,500
Far East/N. America	509	1,018	2,000
Far East/Europe	670	1,340	2,000

\*Ship Costs =  $\frac{1}{2}$  System Costs

POTENTIAL ANNUAL EARNINGS  
(Revenues - Costs, 11 Ships)

Utilization Percentage		U.S. Dollars (Millions)
100%	=	486
75%	=	245
70%	=	195
65%	=	145
60%	=	100
55%	=	46
50%	=	-4
45%	=	-54
40%	=	-110

The potential annual earnings for the RWS are also given in Table 15. The breakeven point occurs at a load factor of 50 percent. Even in heavily overtonnaged routes, such as the Eastbound North Atlantic, operators are achieving this type of load factor. However, it must be remembered that half of a load on an Econship is a full load for most of the competition. Unless high load factors are achieved, the economies of scale offered by Econships are virtually eliminated. If U.S. Lines achieves load factors greater than 75 percent, the high return on investments, as well as their ability to undercut freight rates, would appear to make the system unbeatable.

A final consideration is the ability of U.S. Lines to cross-subsidize from other operations not connected to RWS. If South American trades pick up steam, the company is in a good position to generate high revenues. Likewise, the established operations in both the Atlantic and Pacific trades were making profits in 1984, and some of these revenues are destined to be invested in the RWS. At present, the RWS appears to be marginal in economic terms. The system has the potential to be a major force; and, if high enough load factors can be reached, the competition may have to match the investment to continue to compete. Events in the years 1986 and 1987 will prove which scenario is accurate.

## CHAPTER FIVE CONCLUSION

The great number of intangible factors involved in analyzing the possible effects of protectionism in shipping renders the ability to make projections virtually impossible. Equally frustrating is the attempt to predict the success or failure of a policy which has yet to be used. The bottom line is that protectionism will increase, despite any policy the United States pursues.

The RWS meets this protectionism threat head-on. The system must have access to crosstrade cargoes, even if they are merely hauled a short distance. Slot utilization, not unit costs, will be the dominant factor which determines the success or failure of the RWS. The marginal nature of the system has already been established; thus, any loss of cargo from non-commercial means spells trouble for U.S. Lines.

A recent forecast states the G.N.P. of the United States will increase by only 4 percent in 1985, as compared to an increase of 6.8 percent in 1984 (Magnier, 1985). In contrast to the world fleet, the outlook is bleak for all operators. The question of who survives may be dependent upon financial support, rather than superior management or equipment.

In view of this, it appears that U.S. Lines has overextended themselves in their substantial investment in the RWS, and acquisition of Delta Lines. Although the level of government backing which Evergreen Lines received is not known, it can be safely said that, unless the bottom falls out of the market, Evergreen will remain in business. The same is true for the other government controlled lines, as well as the communist bloc fleets capturing cargo on certain routes. The conference lines are cooperating more, due to the threat of independent lines. Another occurring trend is rationalization agreements between developing nations, and commercial lines in developed nations.

U.S. Lines is competing with lines not necessarily having to show a profit, and conferences which may soon be fighting for their survival. This comes at a time when the company has a substantial amount of debts, and may have to endure a few lean years. The system does not lend itself to rationalization, except through feeder services.

Although it is growing, protectionism is not an immediate problem. The UNCTAD Code has legitimized the concerns of the developing nations; however, it does not seem to be the instrument to create cargo-sharing schemes nationwide. At present, the real threat is the possible rise in bilateralism and commercial impediments, which could mean a loss of Southern Asian and Far Eastern cargoes for U.S. Lines. U.S. Lines' options for non-U.S. trade in Latin America are already limited.

The U.S. Government has supported the development of the RWS, and will continue to support the line in gaining free access to cargoes. With the European nations and certain Far Eastern nations, the United States should be able to maintain reasonably free trades. Access to closed conferences may continue to present problems; however, it is believed that U.S. Lines prefers to remain an outsider as long as they are able to maintain reasonable load factors. The greatest loss of cargo directly resulting from protectionism is intraregional cargoes in Latin America and the Far East. In Europe/Far East trades, and vice a versa, competition will be the prevalent factor, not protectionism.

Projecting future developments in the shipping industry is a precarious task. The attempt here has been to outline problems, and consider potential impacts upon a new shipping service. In the long run, protectionism may be a key factor in the success or failure of the RWS. However, the system faces pressing problems, and the performance of the market is of overriding concern.

The revenues desperately needed by U.S. Lines may be provided by the eastbound Pacific leg. A load factor of approximately 75 percent on this leg would ensure ship's cost are met for a voyage. Thus, the line haul service can provide for itself. The system costs are more vexing, requiring U.S. Lines make strategic decisions concerning feeder services, inland transport, and dealings with shippers. Two key elements will be successful marketing in the United States, and cooperation with foreign nationals.



As of the present time U.S. Lines has not made a major advertising push in trade journals and magazines. Behind the scenes, however, the company is most likely very busy gearing up for the full scale introduction of the RWS. A major advantage that U.S. Lines enjoys versus Evergreen is a home market which is the largest in the world whereas Evergreen has a fairly small home market which is showing signs of slowing down. The Evergreen RWS is thus even more dependent upon crosstrades, and more vulnerable to protectionist impediments.

In the foreign sphere it is obvious that U.S. Lines must develop good relations with foreign governments and shipping interests. This could be achieved by cooperative training and information exchange programs. As barter trade grows in importance, shipping companies may well need some kind of inside line to gain cargoes which are subject to barter agreements. The solutions to protectionism seem to be in commercial actions, rather than government intervention. In severe cases the FMC may well play a major role, but linkages undermine government effectiveness despite the strong wording of 13(b)(5) of the 1984 Shipping Act. Another impediment to government effectiveness is the protectionist pressures being exerted from within the United States itself. It would be difficult to forcefully oppose protectionism internationally at a time when it is growing in strength domestically.

In summary, protectionism is not a key element in the success or failure of the RWS, but, rather it is a threat to the long term. However, it is believed that proper behaviour by the company, along with prudent policy enforcement by the FMC, will allow U.S. Lines to develop the RWS on a commercial basis. The success or failure of the RWS will depend upon its performance in the first three or four years. The economies of the system, as well as the world market, will determine if Malcolm McLean's dream will come true.

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