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## THESIS

FLAGS OF CONVENIENCE  
AND THEIR EFFECT ON  
NATO MERCHANT MARINE MANNING

by

Dorothy Lou Tate

December 1987

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Flags of Convenience  
and Their Effect on  
NATO Merchant Marine Manning

by

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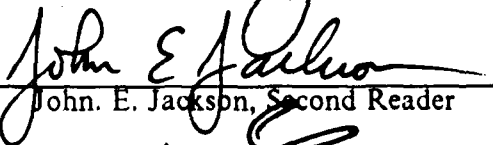
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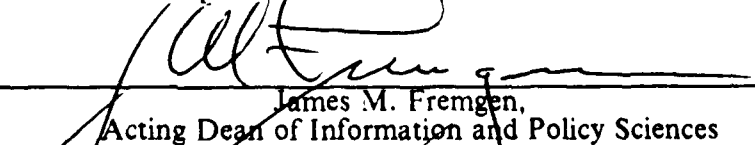
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ABSTRACT

This paper is a study of Flags of Convenience and how their use has affected the number of British and Norwegian merchant mariners available for crewing NATO ships. A trend and regression analysis is presented to describe the relationship between the decline in ship registration and the decline in merchant marine officers in the United Kingdom and Norway.



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## I. INTRODUCTION

### A. BACKGROUND

When the North Atlantic Treaty Organization (NATO) alliance is involved in a war or emergency situation, different NATO members have agreed to transfer ocean ships in their respective flag fleets to a common pool. The pool's purpose is to ensure that shipping assets are used in the overall best interest of the alliance. The ships will be managed by the Defense Shipping Authority (DSA) which is an agency set up by NATO on its behalf. The DSA is concerned with the pooling and allocation of all oceangoing ships under control of the participating countries to meet military and civilian needs. [Ref. 1: p. 2-1]

The DSA only functions during war and emergency situations. In times of peace the NATO Planning Board for Ocean Shipping (PBOS) coordinates and administratively handles contingency plans in the specific area of ocean shipping. The PBOS is made up of representatives from all NATO countries. It is a primary concern of the PBOS to monitor NATO merchant shipping assets. Additionally it must monitor member government policies to see how they will affect the availability of ships. [Ref. 2: p. 157]

### B. STATEMENT OF THE PROBLEM

- The NATO merchant fleets have been experiencing a steady exodus from their respective flag fleets. This exodus is a result of owners' transferring flag registry of their ships to another country's flag registry. This reflagging makes for fewer and fewer ships under control of the individual NATO member governments and to the NATO alliance as a whole. When the merchant fleets decline there is also a decline in the number of NATO merchant officers. The decline of officers is a direct result of a reduction in available jobs, inability to maintain licenses, lack of job security, and foreign labor filling jobs that no longer require national labor. The lack of NATO merchant officers could cause major difficulties during a NATO emergency. These difficulties would be in the area of providing the required number of NATO mariners to man the pool of ships. NATO mariners are required because of concerns with security, loyalty, and dependability of the crews. [Ref. 3: p. 83]

### C. METHODOLOGY OF THE STUDY

Data from the U.S. Maritime Administration (MARAD) was compiled on the number of ships registered to the United Kingdom and Norway. Additional data was collected from the Organization for Economic Co-Operation and Development on masters, deck, radio and engineering officers employed in the merchant marines of Norway and the United Kingdom (UK). The data makes possible a trend analysis to shed some light on the ability to crew DSA pooled ships with the required number of NATO mariners. A regression analysis is also used to determine the exact relationship between the ship data and the merchant officer data. The analysis can also give the general overall capability of Norway and UK to meet NATO manning requirements during times of contingency and war.

### D. LIMITATIONS

This study is limited to the United Kingdom and Norwegian merchant marine ships in order to make it manageable, and the data is based on ships of 1,000 gross registered tons (grt).<sup>1</sup> In addition, the study is further restricted to encompass only master, deck, radio, and engineering officer personnel levels. The employment figures are tabulated by 100 grt. The DSA intends to deal only with ships 1,600 grt. unless specific exception is made by them, or the PBOS [Ref. 1: pp. 2-5]. This limitation causes some difficulty in matching the data. The total number of ships required of DSA by member nations is constantly changing because of changing ship types available in the flag registries. As of September 1987 the total ships ear-marked for use in the pool was 456. [Ref. 4]

### E. CONTENTS

The NATO merchant marine manning problems that must be faced by the PBOS and DSA are a result of reflagging to flag of convenience. NATO members' government policies and the ship owners' quest to operate their ships at the most efficient cost are both contributors to the NATO merchant marine situation of today. Chapter II provides a brief overview of the history of flags of convenience and the reasons for their rise in popularity. Chapter III describes United Kingdom and Norway present and proposed policies and how they may affect the merchant marine officer levels and ships available NATO use. Chapter IV provides for a discussion and analysis of the data. Chapter V presents the conclusions of the study.

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<sup>1</sup>Gross Registered Tons is a common measurement of internal volume of a ship with certain spaces excluded. One ton equals 100 cubic feet.

## II. BRIEF HISTORY OF FLAGS OF CONVENIENCE

### A. INTRODUCTION

NATO merchant ships involved in the reinforcement or resupply of Europe are to be manned by NATO merchant mariners. The availability of these merchant mariners may determine whether or not the reinforcement and resupply are accomplished. The availability of NATO crews may affect the smoothness of the operations. The ability to find, assign, and deploy merchant officers will greatly affect the movement of vital cargo to Europe. In addition, the unqualified loyalty, which may be expected from NATO merchant mariners whose countries are at war, may be far greater than the loyalty of a non-NATO merchant officer in the same situation. The present status of NATO merchant marine shipping and officer availability is the result of a long history of political and economic conditions giving rise to registering ships to foreign flags, flags of convenience.

### B. DEFINITION OF FLAGS OF CONVENIENCE

A flag of convenience (FOC) is the flag of any country permitting the registration of foreign owned and foreign controlled ships under circumstances which are convenient and favorable for the persons who are registering the ships [Ref. 5: p.21]. These flags represent countries that have lenient tax laws and little or no restrictions on the nationality of the labor force employed on ships carrying their flag. FOC nations may also have less stringent safety regulations than other nations.

### C. EARLY HISTORY OF FLAGS OF CONVENIENCE

Use of flags of convenience began many years ago. It occurred for many reasons different from those we find in today's shipping industry. The history of shipping provides several cases of what today is called a flag of convenience.

Ship owners who in days gone by saw any advantage in changing their flag of registration would affix their ships to a foreign merchant fleet. English merchants sailed under the Spanish flag in the sixteenth century. These English merchants found that changing their flag from British to Spanish was the only way to engage in the highly profitable West Indies trade. The Spanish government prohibited all vessels but those flying the Spanish flag to use the West Indies trade routes. [Ref. 5: p. 5]

The Newfoundland "boat fisherman" of the seventeenth century were faced with deportation by the English. The English were concerned over the competition that the "boat fisherman" were giving English fisherman. The Newfoundland fisherman simply changed their registration to the French flag and went on with their business. [Ref. 5: p. 5]

In the nineteenth century, trawlers changed their flag from English to Norwegian. The trawler owners were hoping to evade new British legislation which prohibited trawling activities in the Moray Firth. They changed their flag to evade the legislation. They thought the legislation would no longer apply to them if they flew the Norwegian flag. In this case the reflagging did not change their status. Britain had, and still has, the authority to control fishing in its waters no matter what flag the vessels were carrying. [Ref. 5: p. 6]

During times of war, many owners and whole fleets found it advantageous to change flags. Many owners reflagged from a hostile state to that of a neutral to avoid capture. A fine example occurred when Napoleon blockaded the continent. English ships were reflagged under the flags of German principalities, such as Knyphausen and Pappenburg, so they could trade freely through the blockade. The merchant marine fleets of these tiny states expanded rapidly, almost a hundred fold, because of the reflaggings. In the War of 1812, Massachusetts merchant ship owners reflagged to Portugal to avoid being captured by the British. [Ref. 5: p. 8]

#### **D. PRE-WORLD WAR I**

By the 1900's many ships flew flags different from their actual and ultimate owners' nationality. The difference was largely due to the rise of corporate ownership. The reflagging occurred even under rigid provisions which attempted to regulate the problem of flagging out. Investors placing their financial support into foreign enterprises were very much the norm for the pre-World War I time-frame. There were several countries, mostly South American and Central American, at this time who were interested in attracting foreign capital. These countries allowed foreign owned shipping to fly their flag. As early as 1854 Argentina, then known as Buenos Aires, and Honduras had such a policy. [Ref. 5: pp. 8-9]

The United American Line, during the prohibition period of U.S. history, felt they were unable to compete successfully with other cruise lines who could serve alcoholic beverages. The prohibition regulations were considered applicable to all United States territory. A vessel flying the flag of any country is considered a territory

of that country and is therefore governed by its regulations. The United American Line simply changed its flag of registration to Panama. To change their flag, the company organized a base company in Panama under the corporate laws of Panama. The ownership was transferred to the company and the reflagging took place. The United American Line transfer occurred in 1922. The reregistration allowed the owners to replace the expensive U.S. union labor with cheaper non-union foreign crews, if they so desired. This initial reflagging led the way for other U.S. ship owners who saw their operating costs rising due to union labor. [Ref. 5: p. 10]

#### **E. PRE-WORLD WAR II**

Prior to the out break of World War II many reflaggings occurred. Esso Shipping Co. changed 25 of their ships from the German registry, the Free City of Danzig, to the Panamanian flag. They reflagged to remove the German crews and replace them with Americans. Once the the reflagging and crew change was accomplished, they could continue to trade with Europe as neutrals. Later these ships changed to Panamanian crews to avoid violating the Neutrality Act. The act prohibited these vessels from trading with the European allied nations because they had U.S. citizens on board. [Ref. 5: pp. 10-11]

When WWII began, many U.S. and European ships were transferred to the neutral Panamanian flag. The U.S. was not yet in the war, and trading with those countries already engaged in hostile actions would have violated U.S. neutrality. United States ships were transferred so they could continue to trade with European nations without fear of capture. The U.S. government in many cases encouraged these reflaggings by quickly approving requests for change of registration. In addition, the U.S. government used the reflagging as a way of providing support to the allies without becoming politically involved. European ship owners switched flags to avoid war-time requisitioning of their ships. [Ref. 6: p. 193]

#### **F. POST WORLD WAR II**

After WWII the use of flags of convenience rose sharply. There was an international shipping boom in the 1950's. Shipping firms posted high profits and governments looked at those high profits as a source of taxation. The higher the profits rose the higher the taxation became; thus ship owners began the exodus to other flags with nominal, if not any, taxation. Taxation at this time was the primary motivation for owners to use a FOC registration. Also under consideration by the ship

owners was the high cost of labor. The convenience states had less demanding labor-legislation requirements thus allowing for greater freedom in operations. [Ref. 7: p. 268]

Lack of safety regulations was also cited as a benefit of flags of convenience. Slack safety regulations permitted owners to save money by cutting corners. Opponents of FOC were not particularly concerned about safety for safety sake. They were concerned about the cost savings FOC provided that they could not experience in their own flag registry. Safety was used as a red herring to get unions and environmentalists involved in the fight against flags of convenience. The safety records of FOC have only been shown to be marginally worse than other flag registries. [Ref. 7: p. 268]

The growth in the popularity of FOC is clearly evident by the rise of the Liberian flag. Prior to WWII Liberia had no shipping tonnage. By 1958 Liberia was ranked third in the world with 10,078,778 grt. Panama's fleet increased from 715,525 grt. to 4,357,800 grt. during the same period [Ref. 7: p. 268]. Table 1 presents the rapid rise of FOC during this period.

The Honduran flag also grew rapidly during this time as a FOC. Together with Panama and Liberia these three flags of convenience became known as PANLIBHON. They were considered the primary flags of convenience and bore the brunt of the animosity.

During the period from WWII to 1958, resentment grew among owners who had not changed to flags of convenience. Those who did not change lost some of their competitive edge. The various seamen's unions saw flags of convenience as a lost job for their union members because these ships were now free of labor contracts and collective agreements.

By 1958 the trend toward reflagging was snowballing. Representatives of the British shipping industry voiced their views as follows:

The growth of flag of convenience fleets has reached menacing proportions. Some means of meeting this tax-free competition must be found. So far, a resolution has eluded governments, international organizations and the ship owners whose future depends on one being forthcoming {here the Geneva Conference on the Law of the Sea is meant}... What must be sought is a solution which will provide an effective means of adjusting the competitive balance between Panhonlib operator and those of other countries. The present disparity is such as to give Panhonlib operator overwhelming advantage over their competitors. [Ref. 5: pp. 83-84]

TABLE 1  
NUMBER OF SHIPS REGISTERED TO FLAGS OF CONVENIENCE

YEAR	PANAMA	LIBERIA	HONDURAS
1920	0	0	*
1922	2	0	*
1924	15	0	*
1935	40	0	*
1939	130	0	27
1949	462	15	82
1950	495	39	94
1951	545	78	79
1952	545	121	81
1953	540	182	66
1954	519	363	67
1955	513	486	58
1956	535	655	56
1957	560	894	53
1958	548	1,020	39
1959	542	1,015	32
1960	495	875	27
1961	487	836	21

SOURCES: Data collected from Boczek and Gold.

NOTE: \* Data not available.

The international Law Commission (ILC) proposed in 1958 to the United Nations Conference on the Law of the Sea (UNCLOS) that there must be a "genuine link" between the state and the ship. The ILC did not provide a definition of genuine link, but their intent was to remove flags of convenience from the seas. The legal aspect of the nationality of ships was the basis for the ILC presentation; the members totally ignored the economic motivation behind the reflagging.

The United Kingdom and Norway were leaders in the fight against flags of convenience. These two maritime nations depended heavily on earnings from shipping for their economic viability. The UK was the second largest shipping state in the world at this time. Norway was the fourth largest shipping state. British shipping provided 11 percent of total earnings. In Norway earnings varied, but on occasion it provided up to 45 percent. It is easy to understand why flags of convenience were dubbed

"Public Enemy No. 1" by Robert Ropner, President of the Chamber of Shipping of the United Kingdom [Ref. 5: p. 83].

In 1958, the British and Norwegians placed all their hope on UNCLOS conference. If the flags of convenience could be required by international law to have a genuine link requirement, the reflagging would slow down if not stop. Article 5 of the High Seas Convention addressed the situation in this manner:<sup>2</sup>

Each State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag. Ships have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship; in particular, the State must effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag. [Ref. 7: p. 271]

The UNCLOS was unable to solve the problem. The genuine link requirement was established, but the definition was so vague it proved to be of little help to the UK, Norway, or any of the other traditional maritime countries. The whole legality of the issue was a sovereign state's right to grant nationality to ships under rules that it alone determines. No one was ready or willing to dictate to a sovereign state its right to determine what ships can fly its flag. One legal historian summed up the traditional maritime nations' push at UNCLOS as being totally out of place. The traditional maritime states were attempting to impose a sort of reverse flag discrimination. The new competitive spirit was what they feared most. [Ref. 7: p. 271] The traditional maritime nations realized that their problems could not be settled as a legal issue. They finally faced the real issue, taxation. The PANLIBHON ships were practically tax-immune and therefore the answer to their problems lay within their own governments. [Ref. 5: p. 86]

... neither side appears much concerned over what flag flutters from the stern. But the conflict is being waged with no less vigor because it evolves around dollars and cents. [Ref. 8: p. 29]

Norway experienced grave problems with its shipping industry in 1958. A large number of its ships were laid-up.<sup>3</sup> The resentment against flags of convenience grew. The Norwegians attempted to get an agreement with the British Chamber of Shipping

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<sup>2</sup>The High Seas Convention was the resolution of the UNCLOS.

<sup>3</sup>Laid-up ships are in some type of storage whether it be drydocked or just tied to a pier. Ships are laid-up because there is not enough business or they are uneconomical to operate.

to impose prejudicial harbor fees against PANLIBHON ships.

It seems a bit odd that the UK would raise such a fuss about flags of convenience. British ship owners have always been free to register and operate their vessels from various British Commonwealth countries. Bermuda and the Bahamas were very attractive flags to fly. Corporations based on these islands, which obtain their income from operations outside the islands, operate virtually tax free. [Ref. 5: p. 88]

**G. 1960 TO 1980**

The UK and Norway were left to their own devices to combat FOC. The international opposition of FOC still pressed its views by having international organizations address the situation. Both the United Nations Inter-Governmental Maritime Consultative Organization (IMCO) and a sub-group of the IMCO, the Maritime Safety Committee (MSC), became a forum for presenting cases against FOC. The use of these organizations, as well as UNCLOS, did very little to discourage the use of FOC. In fact, the Liberian and Panamanian fleets increased their market share to almost 20% of the world fleet. [Ref. 7: p. 271] Table 2 presents the changes between 1958 and 1968 in selected fleets.

TABLE 2  
GROWTH OF SELECTED FLAG FLEETS

FLAG	MILLIONS GRT		% INCREASE IN TONNAGE	% OF WORLD FLEET	
	1958	1968	1958-1968	1958	1968
UK	19.2	20.6	8	19.2	11.5
LIBERIA	11.1	27.1	144	11.1	15.1
PANAMA	4	5.4	35	4.4	3.0
NORWAY	9.5	19.1	100	8.5	10.8

SOURCES: Data collected from Gold and *MARAD* Annual Reports 1958-1968.

The fight against FOC became too much for the traditional maritime nations. They continued to argue over FOC, trying every way they could to dispose of them. It was to no avail. The FOC fleets continued to grow. Table 3 presents the changes in flag registries between 1975 and 1986.

TABLE 3  
GROWTH OF SELECTED FLAG FLEETS 1975-1986

FLAG	MILLIONS GRT		% INCREASE IN TONNAGE	% OF WORLD FLEET	
	1975	1986	1975-1986	1975	1986
UK	1,592	527	-66	7	2
LIBERIA	2,491	1,783	-28	11	7
PANAMA	1,802	3,611	+100	8	4
NORWAY	985	387	-61	4	1.5

SOURCE: Data collected from *MARAD* Annual Reports 1975-1986.

The extremely large decline of Liberian FOC was due largely to its political volatility. The coup, led by Samuel Doe, made many owners uneasy and they reflagged. Panama received many of the new ships. Many British ships were reflagged to the Bahamas. [Ref. 9: p. 17]

#### H. SUMMARY

Flags of convenience have been a way of life in the maritime community. They thrive because ship owners are constantly seeking ways to cut operating costs and improve profits. When money is a motivator little can be done to hinder their use. FOC will continue to grow as long as there are no incentives to change. The incentives may be political or economical. History has provided precedents in every possible area. Even today the unheard of use of the American flag as a flag of convenience is taking place because of political reasons. Kuwait tankers are switching so they will be protected by the U.S. Navy. FOC are used for many reasons and nothing will ever stop their use or stem the tide. John Whitworth, director of the International Shipping Federation, summed it up this way. "Attempts to phase out flags of convenience can only be the ultimate in lost causes" [Ref. 10: p. 13].

### III. PRESENT MARITIME POLICIES

#### A. INTRODUCTION

Present maritime policies continue to favor the ship owner's quest for the lowest possible operating cost. Policies in the past which have affected manning have been more in the social and safety spectrum. The implementation of safety standards in the work environment was to protect seamen from poorly maintained ships. Safety standards were the major focus in the past. Improved living facilities, standard hours, mandatory crew levels, and better wages have been the primary concern of sailors. The loss of shipping to flags of convenience has only played a minor role in their concerns until recent years.

Seafarers are now faced with the long-term effects of flags of convenience. FOC have reduced the number of positions traditionally held by British and Norwegian sailors. Every ship owned by a British or Norwegian which is registered to a FOC represents a loss of the billets on board to foreign labor.

Who can blame the ship owner for wanting to operate his ship in the most economically efficient way possible? To a certain extent the seafarers have no one to blame but themselves. In almost every article examined by this writer, the high cost of union labor was the reason most often given for present day use of FOC. The Norwegian seafarers in 1985 were among the highest paid in Europe [Ref. 11: p. 7], and any change in registration would benefit Norwegian owners and rid them of the most costly operating expense on their ships.

Britain's and Norway's fleets have continued to dwindle. Economic advantages have continued to be the main reason. Drastic cuts in operating expenses can still be achieved by reducing crew costs. Crew costs are generally considered to account for approximately 60 percent of the overall operating costs of a merchant ship [Ref. 11: p. 9]. Figure 3.1 shows the difference in costs savings between UK registries and FOC.

#### B. FIGHTING BACK

UK and Norway began to fight back. They developed their own registries which are very similar to FOC. These "captive" registries are designed to offer cost savings similar to FOC while the ships still maintain the advantages of operating under a traditional flag. [Ref. 13: p.10]

UK FLAG/UK SEAFARERS:	\$908,000*
LIBERIAN FLAG/KOREAN SEAFARERS:	\$490,000
HONG KONG FLAG/HONG KONG SEAFARERS:	\$396,000

SOURCE: Data from "U.K. Owners Still Fleeing Flag."

NOTE: \* U.S. dollars.

Figure 3.1 Annual Manning Costs Per Ship.

The new "captive" registries resulted from the United Nations Conference on Conditions for Registration of Ships. The conference was held under the patronage of the United Nations Conference on Trade and Development (UNCTAD). The plenipotentiaries of the participating countries adopted the UN Convention on Conditions for Registration of Ships on 7 February 1986. The most important of the 22 articles in the agreement are articles 8, 9 and 10 which for the first time define the term "genuine link" [Ref. 14: p. 10]:

- Ship owning company must be based in flag state or have an agent there legally responsible for the company's business.
- Ship's crew must be nationals or residents of the flag state.<sup>4</sup>
- State's laws must be sufficient to exert its jurisdiction and control over ships flying its flag.<sup>5</sup>
- States have the option to either satisfy manning or ownership requirements. [Ref. 15: pp. 70-71]

The UN convention did very little to curtail the use of FOC which is what it set out to do. Nothing was accomplished except to open up the way for new flags of convenience. States can now operate a flag which can attract ship owners by offering them the choice between manning and management cost savings.

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<sup>4</sup>Only part of the crew must be nationals or residents.

<sup>5</sup>Jurisdiction and control mean the state has sufficient laws and regulations governing the operation of ships. For example the state has safety standards which are monitored by inspection to ensure ships comply with regulations and the state has enough control over the ship/ship owner to make sure ships failing the inspection are brought up to standards.

### **C. NEW NORWEGIAN SHIPPING POLICIES**

Norway established a captive registry in July of 1987 as a result of the UNCTAD convention. The Norwegian International Ship Registry (NIS) attracted a respectable number of ships in its first three months of operations. Ship registration, as of 15 September 1987, was 48 with 30 more ships expected to change in the near future. Seven of the newly registered ships were transferred from foreign flags. [Ref. 16: p. 18]

The NIS registry was not designed to replace the old Norwegian flag. The traditional flag will continue to operate for those ships desiring to remain and for those who do not qualify for NIS registration. The NIS is open to all non-Norwegian and Norwegian companies involved in international trade [Ref. 17: p. 16]. The company will have to meet the main requirement which is to base either its commercial or technical management in Norway. The term "management" is left to the interpretation of the NIS. The NIS will evaluate each transfer on a case-by-case basis to determine if the company meets the requirements. [Ref. 13: p. 10]

The NIS offers several advantageous regulations which are intended to attract foreign operators. The regulations became effective 17 March 1987.

- Foreign owners and seafarers are exempt from Norwegian taxation.
- Flexible manning regulations.
- Reduced crew size. [Ref. 17: p. 16]
- Removal of technical standards that exceed international norms [Ref. 13: p.10].

The purpose of NIS "...is to keep Norway a center of Maritime activity..." [Ref. 13: p.10]. Between 1985 and 1986 Norway's ship registration fell by 18 percent (in numbers of ships) and its international ranking fell from 13th to 17th. Little wonder the newly elected Labour government stepped in and created the NIS when the opportunity presented itself. With the possibility of all Norwegian seafaring tradition dwindling away to FOC something had to be done. [Ref. 18: pp. 66-67]

### **D. NEW UNITED KINGDOM SHIPPING POLICIES**

The UK has experienced a drastic loss in its shipping capability. British ship owners continue to switch to FOC. Many changes, however, are made to British commonwealth countries, such as the following:

- Bahamas
- Bermuda
- Gibraltar
- Hong Kong

These British associated countries collectively were ranked the fourteenth largest registry in the world. They were ranked ninth in total deadweight tons<sup>6</sup> in 1986. The British associated countries were ranked twenty-fourth in number of ship registrations and fifteenth in total deadweight tons in 1984. The rise to fourteenth was a substantial increase from the 1984 figure. [Refs. 19,20: pp. 12,10]

The British established their own sort of "captive" registries in the Isle of Man and the Channel Islands. These two registries are effectively FOC. The ships are entitled to fly the red ensign<sup>7</sup> and receive any benefits or protection that flag offers [Ref. 18: p. 66]. The ship, however, receives the benefit of the protection of the British Navy it would not otherwise receive if it used a typical FOC such as Panama.

Many British owners have transferred their ships registry and continued to employ UK mariners. But the terms of employment have been arranged by a Hong Kong manning company and not UK unions [Ref. 12: p. 44]. These Hong Kong companies are able to negotiate with the unions and achieve cost reductions for the owner. Many will negotiate with a union for the original crew and the crew will take a wage cut. The Hong Kong manning companies are not bound by union agreements made in other countries. The owners can effectively reduce operating expenses without changing the crew. If the owner, however, wants a greater reduction in crew cost he can simply contract for a different crew which has lower salary requirements.

British seafarers over the years have been considered outstanding sailors. The great maritime tradition of the United Kingdom is a testament to their seamanship abilities. Thus British seafarers unlike other seafarers are in great demand even though they are so highly paid. "The British officer may be expensive, but there is still a need for his knowledge and experience. There is still a great deal of respect for his abilities." [Ref. 11: p. 9]

The unusual situation with the British associated countries is that they most often retain British or Commonwealth officers and replace the rest of the crew with foreign labor. In fact Bermuda requires British or Commonwealth senior officers serve on their flag ships [Ref. 21: p. 17].

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<sup>6</sup>Total Deadweight Tons is the total lifting capacity of a ship, expressed in tons of 2,240 lb. It is the difference between the displacement light and the displacement loaded.

<sup>7</sup>The red ensign is the British merchant fleet flag.

## E. THE EFFECTS OF THE POLICIES ON NATO

### 1. Availability of Ships

These new captive registries have a great impact on the ability of NATO to provide ships in time of contingency and war. The pool of ships made available to the Defence Shipping Authority has now dwindled to 456. Much of the decrease is due to the use of FOC. Prior to the opening of the NIS registry the Norwegians were supplying 40 of the 600. Now they are only supplying nine ships and the British are providing 94. [Ref. 4]

The decrease is not only attributable to FOC but to new technology as well. Many of the new sleek cargo ships do not lend themselves to military cargo. The ships remaining in the NATO registries may not be suitable military cargo carriers. If the ships are not suitable they are removed from the pool list.

Self-sustained ships are the best suited for military cargo. The old traditional freighters<sup>8</sup> with their huge cranes and large operating crews are the ships most suitable for military cargo. They are self-sustained and do not require specialized port facilities to load and unload cargo. The old style freighter with its own cranes can utilize any port and are not dependent upon specialized cargo handling equipment shore-side as the new modern container ships<sup>9</sup> are.

The old cargo ships are less automated and as a result require more crew. Therefore they are more likely to reap the benefits of a FOC where they can obtain cheap foreign labor and sail with a smaller minimum crews. These ships are also the most likely to be reflagged because they have large ship-board crews and operating cost can be quickly reduced by changing to foreign crews.

The NIS registry has stipulated that all Norwegian owned ships in its registry will be available to NATO just as if they were still under the regular Norwegian flag [Ref. 13: p. 10]. PBOS, however, is unwilling to accept that the ships are under the complete control of the NIS. PBOS has removed all ships from the pool which are now registered to the NIS. PBOS and DSA want a clear indication that the ships can be taken up from trade by the Norwegian government and utilized. At this point PBOS and DSA are unsure of the true control the Norwegian government has over these ships. [Ref. 4]

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<sup>8</sup>Freighter is a general cargo ship capable of carrying break bulk and palletized cargoes. Vessels have tween decks and on deck cargo gear.

<sup>9</sup>A container ship is equipped with permanent container cells in all holds and requires shore-side cranes for loading and unloading containers.

The new British registries have not indicated whether or not ships registered to the Isle of Man and the Channel Islands will be made available to NATO. It is also not clear that the United Kingdom would be able to meet a Falklands type crisis with the present merchant fleet situation [Ref. 22: p. 44].

## 2. Availability of Mariners

These new captive registries have created a great dilemma among NATO planners. As more and more ships are flagged out there are fewer jobs for NATO merchant mariners. As the jobs decrease so do the number of mariners. Recruiting into a declining industry becomes difficult. Potential mariners see the maritime industry as one with little or no job security. The opportunities for employment after training are dim. As more ships switch to FOC there are more mariners competing for each job. Appendix A presents an overall view of the decline of the Norwegian and British mariners.

Recently Ocean Transport and Trading, a Liverpool based shipping firm, announced plans to switch eleven of its ships from the British to the Isle of Man flag. The move is being made solely for the purpose of reducing costs. Ocean Transport and Trading employs 400 seafarers on these vessels and expects a minimum of 50 jobs will be lost by British merchant marines. [Ref. 23: p. 16]

It is situations like this which make recruiting so difficult for the industry. Each year men entering officer training programs declines. The number of cadets entering training for deck officers in 1985 was 85 and only 39 for 1986. The Nautical Institute reported to a special committee of Parliament that the present fleet of approximately 500 ships requires an annual input of 250 cadets for deck officers alone. [Ref. 24: p.7]

NATO highly desires NATO mariners on their ships during times of contingency and war. They are desired because of perceived loyalty they might possess and because of concerns over security:

...the use of non-NATO flag shipping resources would raise questions about the extent to which crews of other nationalities could be relied upon to continue to serve on ships employed by Alliance members in a emergency, and their suitability.<sup>10</sup> [Ref. 25: p. 487]

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<sup>10</sup>This is a statement made by the Allied Planning Board for Ocean Shipping in a report made public by Lord Carrington, the NATO Secretary General.

Naturally PBOS and DSA would want all the mariners on board the ships to be NATO members. But if that cannot be the case PBOS and DSA have set up a hierarchy of ship-board billets which are to be filled with NATO mariners. The order is as follows:

- Radio Officer
- Master
- Deck Officers
- Engine Room Officers
- Crew

This hierarchy was established for reasons of security of operations. A NATO radio officer is an absolute requirement. The radio officer would have access to classified NATO communications codes in order to receive and send messages. He would be receiving information on location of convoys and warships in order to have his ship link up with them. The speed and course of the convoy would be extremely sensitive information and it could be used to stop or hinder the flow of vital materials intended for troops on the firing line. The potential for compromise and disaster is so overwhelming that a NATO radio officer is the top priority.

The master has complete control over the vessel and the crew. His loyalty to the cause is extremely important. There is no way to gauge his loyalty but it is generally assumed that a NATO mariner whose country is at war with the communist eastern block would be better than an East German or Third World master.

Prime Minister, Margaret Thatcher's conservative government has realized the implications flagging out has had on the availability of merchant mariners in time of war or emergency. The Merchant Shipping Bill was announced in June of 1987. The proposed Merchant Shipping Bill has a provision to set up a pool of experienced mariners in a Merchant Navy Reserve. The National Union of Seamen view the reserve as a "duplication of effort". One British journalist was very critical of the conservative shipping policy of Mrs. Thatcher:

There have already existed such a reserve, several thousand unemployed seafarers thrown on the scrap heap by Mrs. Thatcher's apparent eagerness to allow ship owners to "flag-out" to Third World countries unable, or unwilling, to enforce adequate standards of safety or training. [Ref. 26: p. 10]

The General Secretary of the National Union of Seamen, Sam McCloskie, said, "I envisage this new body becoming little more than "Dad's Navy" of ill-trained

seafarers." [Ref. 26: p. 10] These statements are indicative of the unions' feeling on Mrs. Thatcher's free-market policy. The unions have lost many jobs because ships have been allowed to reflag to FOC without concern for the future needs of maritime labor. The unions have been highly critical of the government's policies. They see the policies as catering to the owners. The unions feel the government has left them to the wolves.

#### F. SUMMARY

The rise in the use of FOC has rapidly increased in Norway and the United Kingdom. More ship owners are avoiding the high cost of expensive European labor by shifting to FOC. The development of "captive" registries did little to discourage the use of FOC. In fact the new UNCTAD convention may have done more to increase the use of FOC as traditional maritime nations begin to use them to attract shipping to their countries.

The UK has only just begun to realize the implications FOC can have on the availability of merchant mariners in times of war and contingency. The development of the Merchant Navy Reserve is a step towards treating the symptom, but the true problem is the ability of ship owners to transfer from one flag to another with such ease. Flags of convenience will exist until there are no longer any economic or political reasons to change. FOC will continue to grow and domestic fleets will continue to decline taking with them the domestic merchant seaman.

## IV. ANALYSIS

### A. INTRODUCTION

In this chapter a trend and regression analyses are presented on the data contained in Appendix A and B. The regression analysis abbreviations are contained in Appendix C. The regression data is contained in Appendix D. The analyses are intended to provide some insight into the effect the number of merchant ships registered to the United Kingdom and Norway has on the number of merchant marine officers employed by their respective countries. The trend analysis describes what has happened to the merchant marine industry. The regression analysis describes the effect that ship registries has had on the number of merchant mariners.

### B. ANALYSIS OF ENGLISH DATA

#### 1. Trend Analysis

The number of masters, deck, radio officers and cadets declined 59 percent between 1972 and 1985. English registered ships declined 69 percent during the period of 1972 and 1986. The decline in the English engine room officers and cadets was very similar. They dropped by 60 percent. This declining trend and the similarities between them may be seen in Appendix E. Since all of the graphs are so similar, a regression analysis on the data was run to determine if the decline of officers was a result of the decline in number of ships. Because it is reasonable to assume that there is a relationship between them, a regression analysis is considered appropriate.

#### 2. Regression Analysis

It is the large and similar changes in both sets of data which prompted the use of a regression analysis. Because both percentage changes are large there is a possibility of their being related. The regression is used to determine if the number of British registered ships may any have influence over the number of mariners employed by the United Kingdom. The results of the regressions are contained in Appendices F, G, H and I.

The results of the regression are reasonable because of the original assumption that the two sets of data are related is true. The regression analysis provided linear equations for each data set. The slope of the equations are both very steep. This makes the equations much more accurate because the further the slope is away from

zero the better it is at predicting the independent variable, in this, case Ecrew and Emen.

The plot of the standard residuals in both cases suggests a curvilinear relationship between the independent variable and the predicted dependent variables. In fact the two plots are very similar in shape. The plot of Emen versus Eship contained in Appendix I has a much smaller deviation from zero than the plot of Ecrew versus Eship contained in Appendix G. The curvilinear relationships could be explained by new advances in technology. The use of technology has reduced the crew size over the years and as ship are removed the relative loss in crew has been less than in the past. The cyclic nature of the shipping industry could also be an explanation of the curvilinear shape.

The similarity in the two regressions on the English data continues with the R-squared figures. The R-squared for the Ecrew regression is 86% and for the Emen regression is 86.7%. These numbers indicated that the independent variable Eship explains 86% and 86.7% of the variation in the dependent variables.

## **C. ANALYSIS OF NORWEGIAN DATA**

### **1. Trend Analysis**

The number of masters, deck, radio officers and cadets has declined 20% between 1972 and 1985. The number of engine room officers and cadets declined 24% during the same period. Norwegian ships however declined 60%. There is definitely a declining trend in all categories but the percentages are very different between officer data and ship data. The relationships between the data may be seen in Appendix J.

A large decrease in ships occurred between 1977 and 1980. There are several reasons for this decrease. The first is the world-wide recession which occurred at the end of 1977. The decline in ships was even more dramatic because the shipping industry had reached and all-time record peak in supply and demand for ocean transportation in 1977. Also during this time the North Seas oil fields were beginning to come on line. These oil fields, located in Norwegian waters, eliminated the need for many of the Norwegian oil tankers and there respective crews.

The data could have even shown a steeper drop but the data collected included mariners on ships 100 grt. and over for 1980 and 1981. Like the UK data the Norwegian data tended to decline at the same rate between Nmen and Ncrew. The data for Nships did not decline at the same rate. A regression was run to see how

strong the relationship is between the independent variable Nship and the dependent variables Ncrew and Nmen.

## 2. Regression Analysis

The use of Nship as the independent variable in both regressions was considered a reasonable choice because the number of Nships should be an indicator of the number of merchant marine officers. The regressions run on the Norwegian data did not show as strong a relationship between officers and ships as there was in the English data. Appendices K, L, M and N are the results of the two regressions.

The slope of the two regression equations are 1.72 and 1.57. These slopes are much closer to zero than the slopes generated for the English data. This indicates that the regression equation is not as accurate a predictor of Pncrew and Pnmen as the British data.

The R-squared figure is lower for the Norwegian data. The relationship between the data is not as strong. Only 81% and 84% of the variation in the dependent variables may be explained by the independent variable Nship. However, this is still a very large percentage and proves that there is a strong relationship between Nship and merchant officers in Norway.

## D. SUMMARY

The data for Eship and Nship was used as the independent variables in four regressions. The purpose was to determine how much of an effect the number ships has on the number of merchant marine officers in the United Kingdom and Norway. The regressions explained a large portion of the variance in the number of mariners in all four cases. Therefore the decline in the number of ships explains a very large portion of the losses in the number of merchant marine officers in the United Kingdom and Norway.

## V. CONCLUSION

### A. SUMMARY

The continued use of flags of convenience is not expected to go away. The UNCTAD decision has in fact made a new type of FOC, the 'captive' registry. FOC have always been apart of the world's ocean shipping heritage and it is unlikely that they will ever go away. As long as there are economic and political advantages, FOC will be a practical alternative for ship owners.

There has been a decline in the number of ships registered to Norway and the United Kingdom. FOC is just one of many reasons for the decline. The relationship between the decline in ships and the decline in mariners has been established by the regression analysis. The change in number of ships has an impact on the number of mariners. The R-squared figures point out that the change in ships can account for 81%-86.7% of the change in the number of mariners.

The ability of NATO to crew its ships with the required officers will become more difficult if the trend toward reflagging continues. There is doubt that reflagging will stop. The ability to crew the pool of ships with officers is not in jeopardy at this time. The number of ships required for a NATO country to supply to the pool is automatically adjusted to the number and type of ships registered to the country. Ships flying the Norwegian and UK flags are crewed with officers from their respective countries. Major crewing problems will arise when the pool of ships shrinks to such a small size that NATO is not capable of handling the military cargo required for the immediate reinforcement of Europe. When the pool is determined to be too small additional ships will be required to be taken up from trade.<sup>11</sup> The ability of NATO countries to crew these ships with NATO officers will be extremely difficult because their present complement of officers may be from many different non-NATO nations.

The British government has realized that the ability to crew the ships taken up from trade will be difficult and has established the Merchant Navy Reserve. If this

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<sup>11</sup>Taking up ships from trade occurs when merchant ships owned by citizens or companies based in a country but are registered to another are confiscated by the country where the owners or companies are based for military purposes.

action proves to be helpful to them, other NATO countries should follow Britains lead. If not, the NATO reinforcement of Europe may not be as successful as NATO planners may hope for.

**APPENDIX A**  
**MARINERS EMPLOYED IN THE UNITED KINGDOM AND NORWAY**

YEAR	MASTERS & DECK OFFICERS**		ENGINE ROOM OFFICERS***	
	UK	NORWAY	UK	NORWAY
1985	7,005	6,501	7,785	4,667
1984	7,956	6,748	8,916	4,903
1983	10,182	6,809	11,424	4,925
1982	12,577	7,107	13,846	5,025
1981	15,266	7,384†	17,065	5,064†
1980	16,553	7,165†	18,825	4,911†
1979	17,476	6,935	20,358	4,849
1978	*	*	*	*
1977	19,002	7,624	23,683	5,444
1976	19,540	7,565	24,343	5,423
1975	20,250	7,609	26,287	5,481
1974	18,926	7,716	25,713	5,646
1973	*	7,947	*	5,873
1972	17,000	8,148	19,500	6,142

SOURCE: Data collected from *Maritime Transportation* 1973-1985 editions, ships over 100 grt.

NOTES: \* Data not published. \*\* Including radio officers, apprentices and cadets. \*\*\* Including apprentices and cadets. † Including ships under 100 grt.

**APPENDIX B**  
**MERCHANT FLEETS OF THE UNITED KINGDOM AND NORWAY**

YEAR	UNITED KINGDOM	NORWAY
1986	527	387
1985	561	475
1984	685	529
1983	816	577
1982	927	600
1981	1,056	616
1980	1,110	632
1979	1,229	875
1978	1,377	978
1977	1,526	1,003
1976	1,552	999
1975	1,592	985
1974	1,609	1,028
1973	1,627	1,118
1972	1,713	1,199

SOURCES: Data collected from *MARAD* Annual Reports 1972-1986.

NOTE: Data based on ships 1,000 grt. and over.

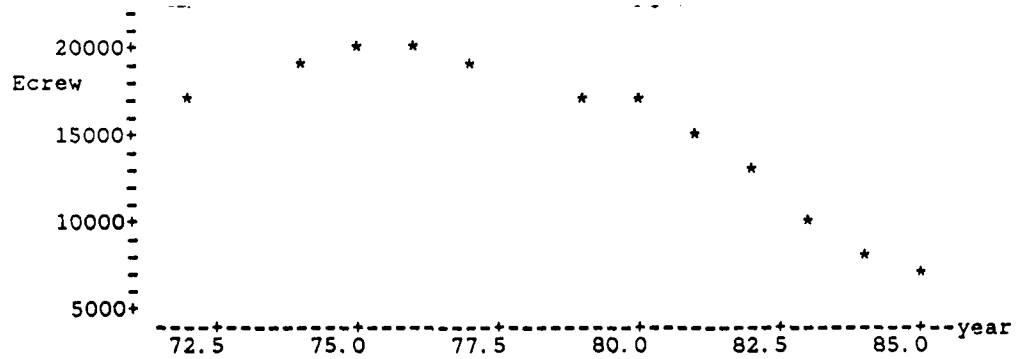
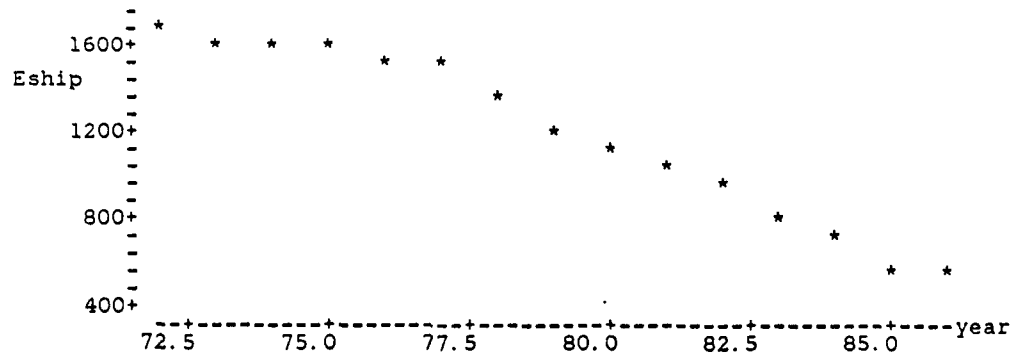
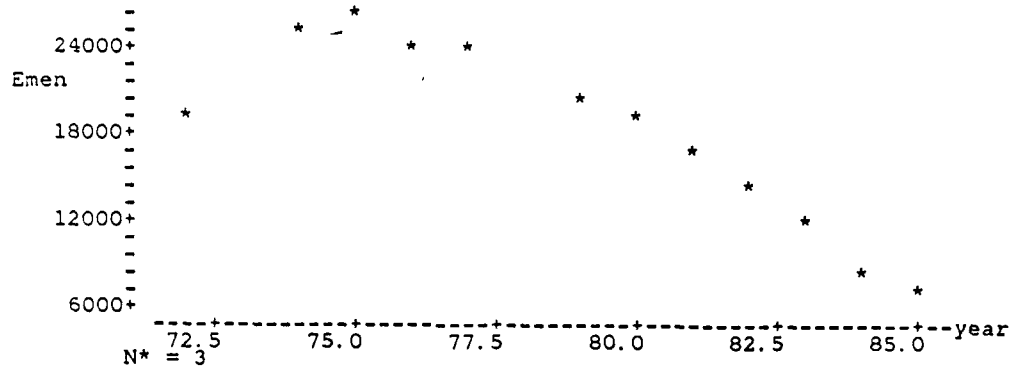
**APPENDIX C**  
**ABBREVIATIONS USED IN DATA ANALYSIS**

- Ecrew: English Masters, Deck Officers, Radio Officers and Cadets.
- Emen: Engine Room Officers and Cadets.
- Eship: English registered ships.
- Ncrew: Norwegian Masters, Deck Officers, Radio Officers and Cadets.
- Nmen: Norwegian Engine Room Officers and Cadets.
- Nship: Norwegian registered ships.
- Pecrew: Predicted value of Ecrew for the regression.
- Pemen: Predicted value of Emen from the regression.
- Pncrew: Predicted value of Ncrew for the regression.
- Pnmen: Predicted value of Nmen for the regression.
- Secrew: Standard residuals of Ecrew vs. Eship.
- Semen: Standard residuals of Emen vs. Eship.
- Sncrew: Standard residuals of Ncrew vs. Nship.
- Snmen: Standard residuals of Nmen vs. Nship.

**APPENDIX D**  
**REGRESSION ANALYSIS GENERATED DATA**

Secrew	Pecrew	Semen	Pemen
* -0.85405	7916.3	* -0.36554	8017.4
-1.05006	8282.5	-0.68853	8530.6
-0.51321	9618.3	-0.42438	10402.2
0.20794	11029.4	-0.09057	12379.5
0.95921	12225.2	0.45282	14055.0
1.36355	13614.8	0.85202	16002.1
1.15343	14196.5	0.73877	16817.2
* 0.19385	15478.4	* 0.25722	18613.3
0.35011	17072.6	0.37676	20847.2
-0.52331	18677.7	0.97782	23096.2
-0.39422	18957.8	0.61065	23488.7
* -2.33409	19388.7	* -2.97591	24092.4
	19571.8		24349.0
	19765.7		24620.7
	20692.1		25918.8
Sncrew	Pncrew	Snmen	Pnmen
* -1.14101	6575.46	* -0.26277	4573.31
-0.35416	6727.07	0.61744	4711.32
-0.45189	6820.10	0.30404	4796.00
0.78670	6902.80	0.66067	4871.28
1.96925	6942.42	0.73515	4907.35
0.79287	6969.99	-0.25886	4932.44
-2.22554	6997.55	-2.66040	4957.54
* -0.06001	7416.20	* -0.52883	5338.63
-0.30567	7593.64	-0.60988	5500.16
0.01549	7636.71	-0.16640	5539.37
0.17210	7629.82	0.37643	5533.09
-0.04296	7605.70	0.26034	5511.14
0.89030	7679.79	1.77873	5578.57
	7955.43		5829.50
	7974.39		5846.75

## APPENDIX E PLOT OF ENGLISH DATA VERSUS YEAR



## APPENDIX F

### REGRESSION OF ECREW VERSES ESHIP AND PLOT OF ECREW AND ESHIP

The regression equation is  
 $E_{men} = 63 + 15.1 E_{ship}$

12 cases used 3 cases contain missing values

Predictor	Coef	Stdev	t-ratio
Constant	63	2352	0.03
Eship	15.094	1.871	8.07

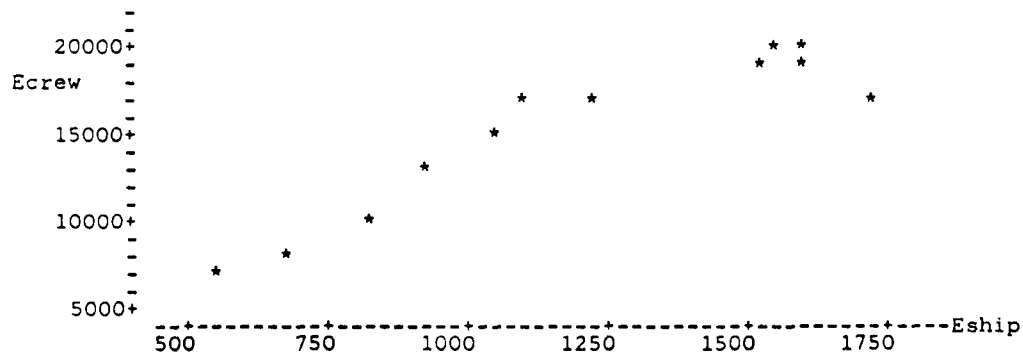
s = 2467                  R-sq = 86.7%                  R-sq(adj) = 85.4%

Analysis of Variance

SOURCE	DF	SS	MS
Regression	1	396292608	396292608
Error	10	60878272	6087827
Total	11	457170688	

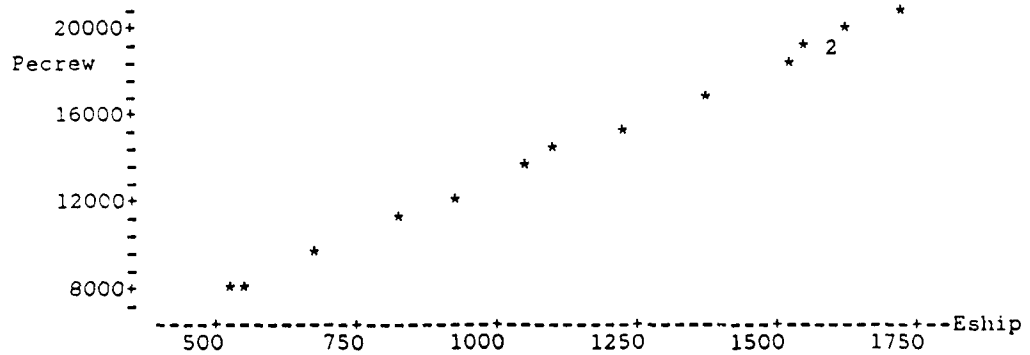
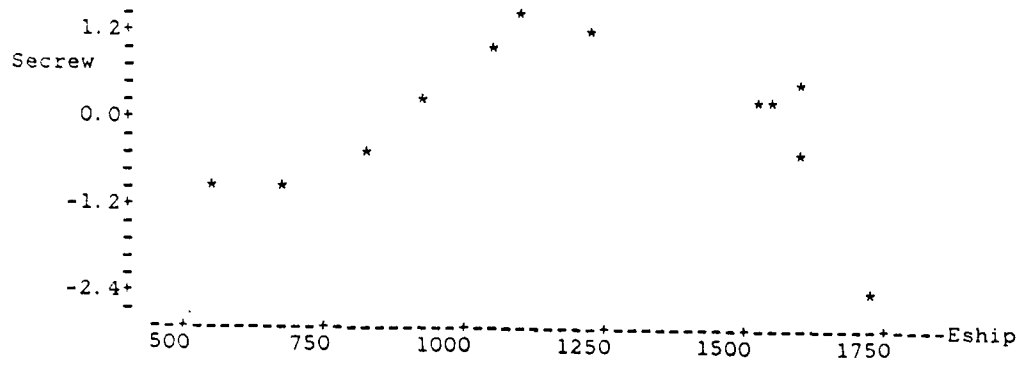
Unusual Observations	Obs.	Eship	Emen	Fit	Stdev. Fit	Residual	St. Resid
	15	1713	19500	25919	1198	-6419	-2.98R

R denotes an obs. with a large st. resid.



# APPENDIX G

## PLOT OF STANDARD RESIDUALS AND PREDICTED CREW



## APPENDIX H REGRESSION OF EMEN BY ESHIP

The regression equation is  
 $Emen = 63 + 15.1 \text{ Eship}$

12 cases used 3 cases contain missing values

Predictor	Coef	Stdev	t-ratio
Constant	63	2352	0.03
Eship	15.094	1.871	8.07

s = 2467                  R-sq = 86.7%                  R-sq(adj) = 85.4%

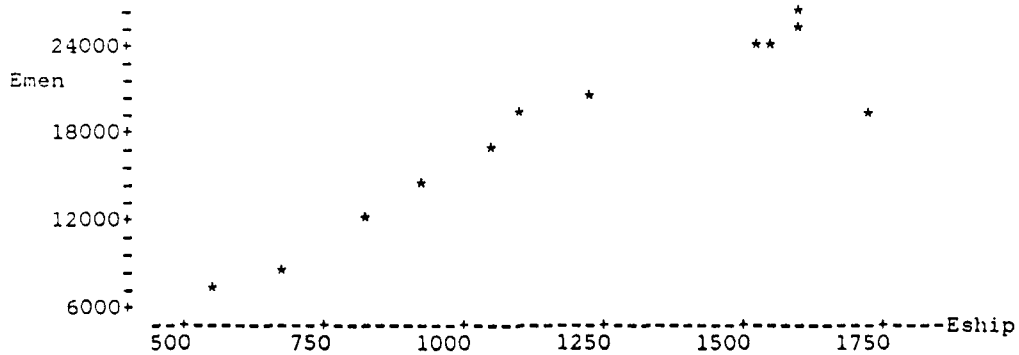
Analysis of Variance

SOURCE	DF	SS	MS
Regression	1	396292608	396292608
Error	10	60878272	6087827
Total	11	457170688	

Unusual Observations

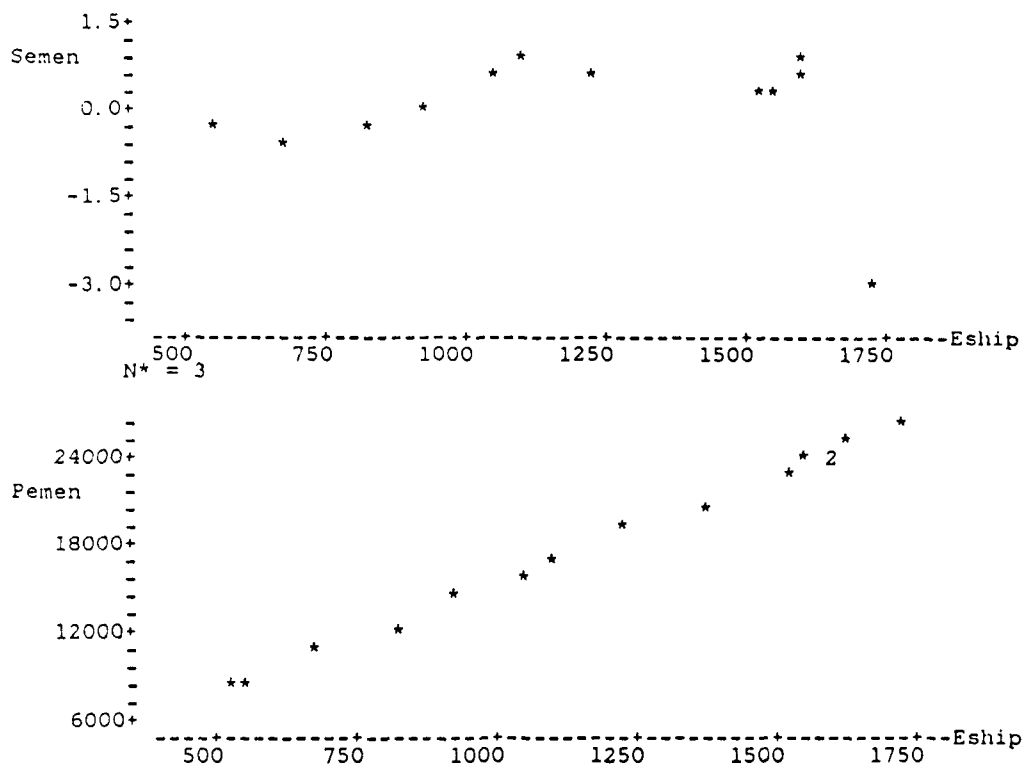
Obs.	Eship	Emen	Fit	Stdev. Fit	Residual	St. Resid
15	1713	19500	25919	1198	-6419	-2.98R

R denotes an obs. with a large st. resid.



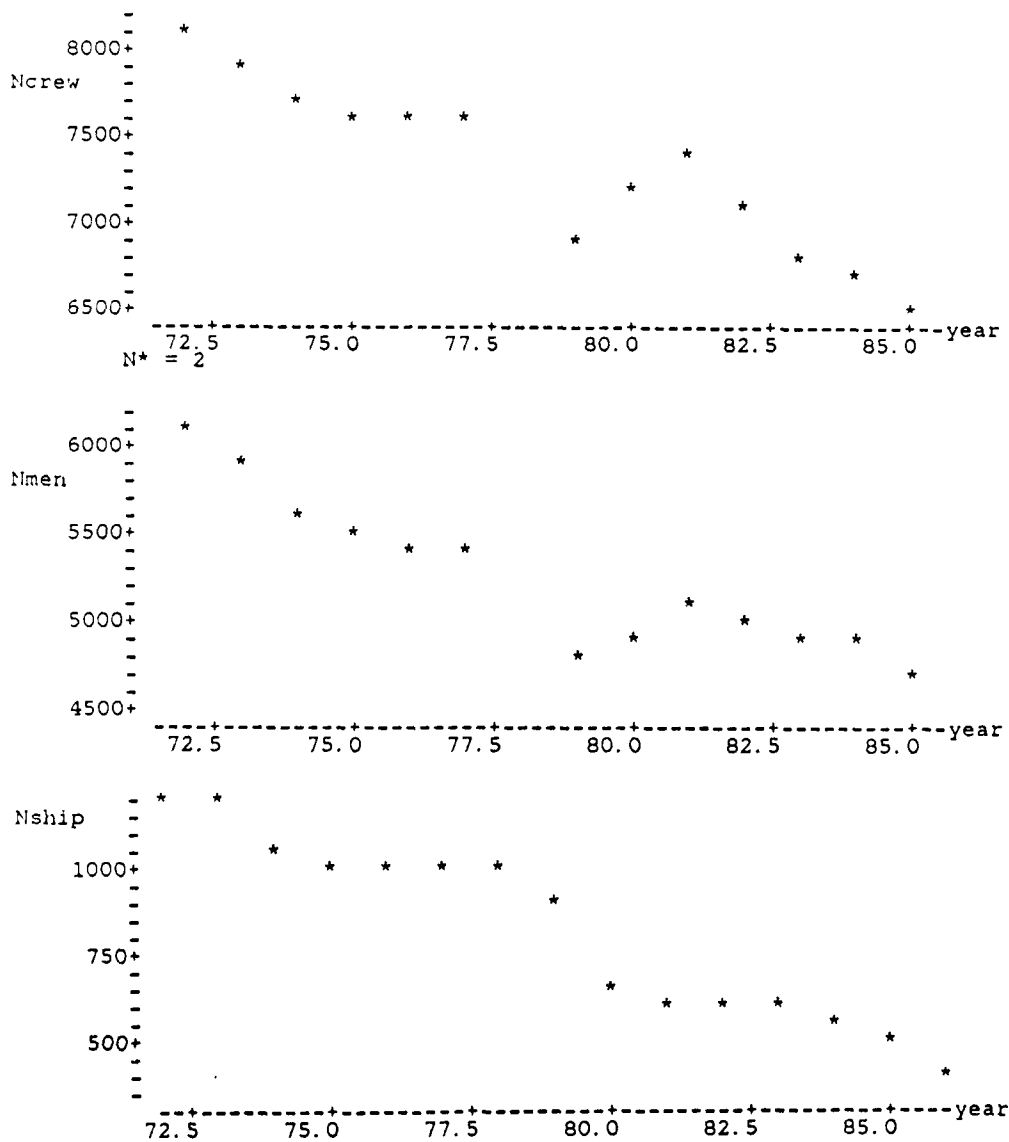
# APPENDIX I

## PLOT OF STANDARD RESIDUALS AND PREDICTED EMEN



## APPENDIX J

### PLOT OF NORWEGIAN DATA VERSUS YEAR



## APPENDIX K REGRESSION OF NCREW AND NSHIP

The regression equation is  
 $N_{crew} = 5909 + 1.72 N_{ship}$

13 cases used 2 cases contain missing values

Predictor	Coef	Stdev	t-ratio
Constant	5908.7	216.0	27.35
Nship	1.7228	0.2511	6.86

$s = 225.4$        $R\text{-sq} = 81.1\%$        $R\text{-sq(adj)} = 79.3\%$

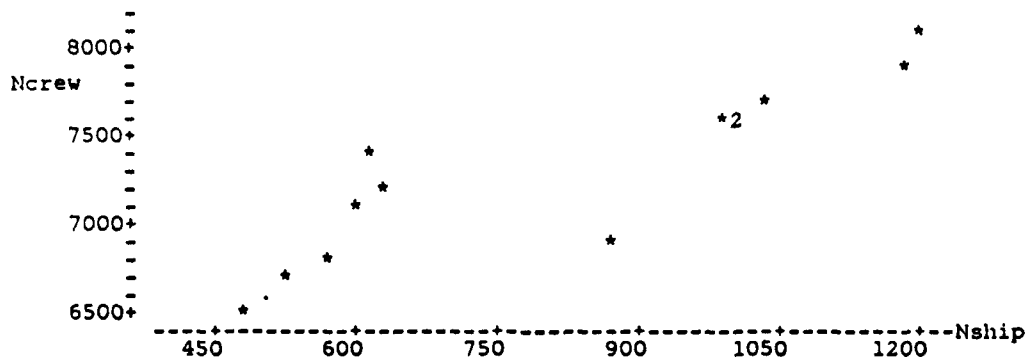
Analysis of Variance

SOURCE	DF	SS	MS
Regression	1	2392449	2392449
Error	11	559084	50826
Total	12	2951533	

Unusual Observations

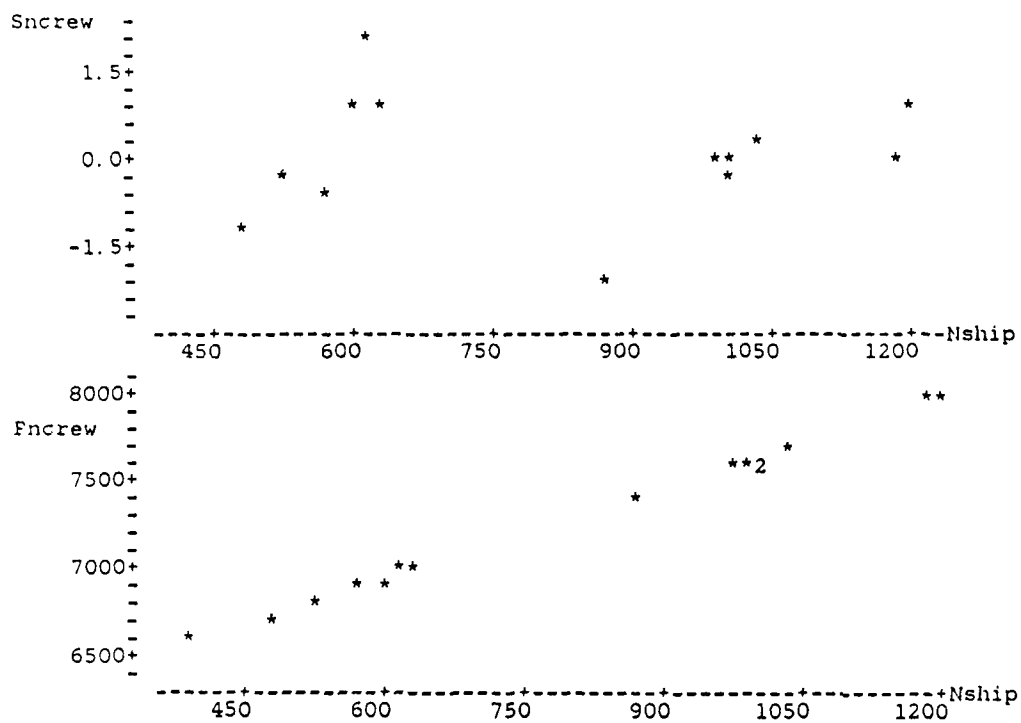
Obs.	Nship	Ncrew	Fit	Stdev. Fit	Residual	St. Resid
8	875	6935.0	7416.2	63.8	-481.2	-2.23R

R denotes an obs. with a large st. resid.



# APPENDIX L

## PLOT OF STANDARD RESIDUALS AND PREDICTED NCREW



**APPENDIX M**  
**REGRESSION NMEN VERSUS NSHIP AND PLOT OF NMEN VERSUS NSHIP**

The regression equation is  
 $Nmen = 3966 + 1.57 Nship$

13 cases used 2 cases contain missing values

Predictor	Coef	Stdev	t-ratio
Constant	3966.4	183.9	21.57
Nship	1.5683	0.2137	7.34

s = 191.9            R-sq = 83.0%            R-sq(adj) = 81.5% .

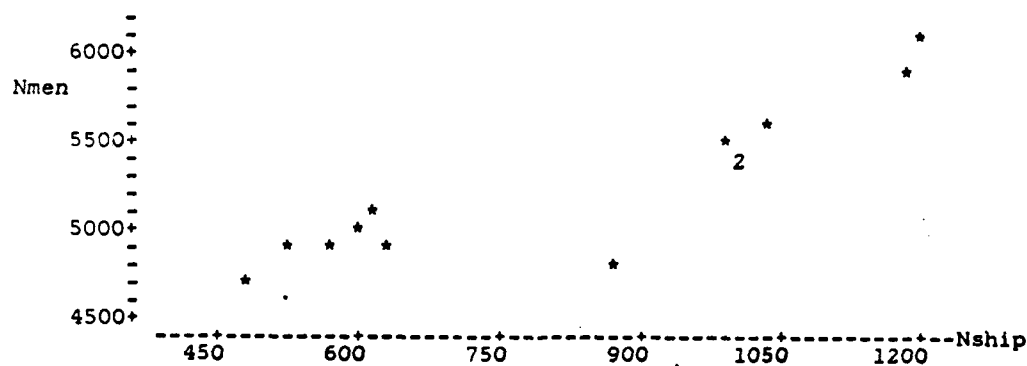
Analysis of Variance

SOURCE	DF	SS	MS
Regression	1	1982502	1982502
Error	11	405082	36826
Total	12	2387584	

Unusual Observations

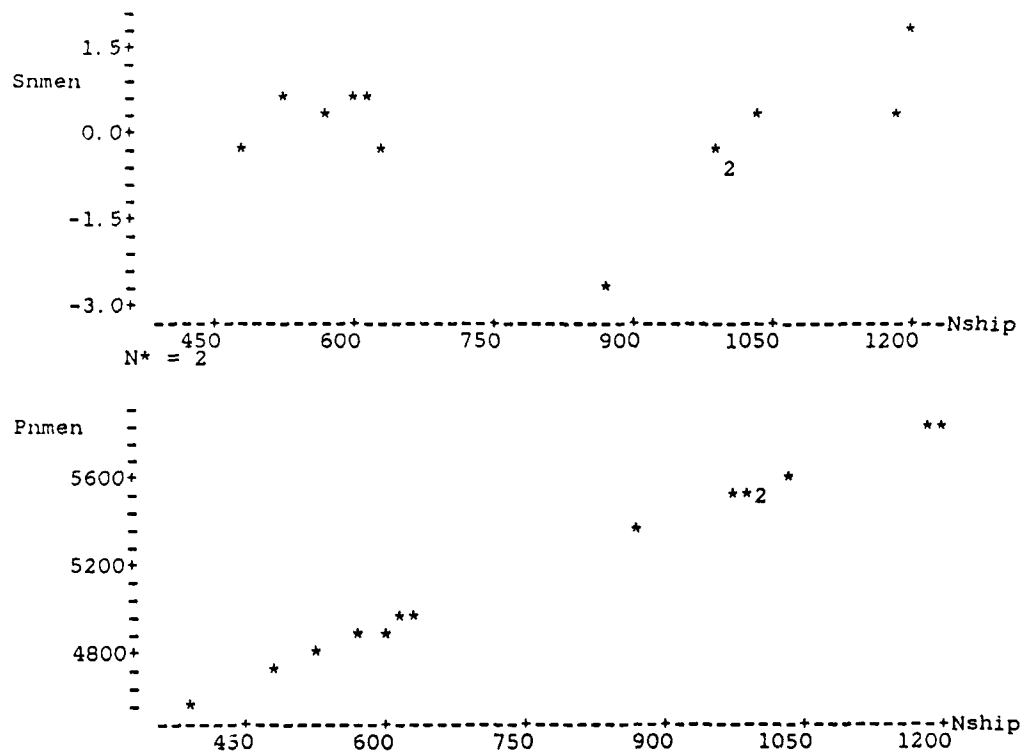
Obs.	Nship	Nmen	Fit	Stdev.Fit	Residual	St.Resid
8	875	4849.0	5338.6	54.3	-489.6	-2.66R

R denotes an obs. with a large st. resid.



# APPENDIX N

## PLOT OF STANDARD RESIDUALS AND PREDICTED NMEN



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