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MARITIME INDUSTRY

Cargo Preference Laws—Estimated Costs and Effects





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**Resources, Community, and
Economic Development Division**

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The Honorable Hank Brown
The Honorable John C. Danforth
The Honorable Charles E. Grassley
The Honorable Don Nickles
The Honorable Malcolm Wallop
United States Senate

This report, prepared at your request, provides information on (1) the cost to the federal government of laws requiring that certain government cargo shipped internationally be carried on a U.S.-flag vessel and (2) the effect of these cargo preference laws on the merchant marine industry.

As arranged with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 10 days after the date of this letter. We will then send copies to the Secretaries of Agriculture, Defense, Energy, and Transportation; the Administrators of the Agency for International Development and the Maritime Administration; and other interested parties. We will make copies available to others upon request.

Please contact me at (202) 512-2834 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix IX.

A handwritten signature in cursive script, reading 'Kenneth M. Mead'.

Kenneth M. Mead
Director, Transportation
Issues

Executive Summary

Purpose

Cargo preference laws require that certain government-owned or -financed cargo shipped internationally (between a U.S. port and a foreign port) be carried on U.S.-flag vessels.¹ Cargo subject to these laws is known as preference cargo. This report responds to a request from several Senators to provide information on (1) the cost to the federal government of cargo preference laws and (2) the effect of cargo preference laws on the U.S. merchant marine industry. Additionally, GAO is responding to the Senators' request for information on various other aspects of the merchant marine industry. (See app. VIII.)

The purpose of this report is to provide information on the costs and effects of cargo preference laws. It, therefore, does not make conclusions regarding the desirability of cargo preference laws or recommendations for changes that could be made to those laws.

Background

Since the first cargo preference law—the Cargo Preference Act of 1904 (P.L. 198)—was passed, the Congress has repeatedly reaffirmed its intent to promote a strong U.S. merchant marine industry and has passed cargo preference legislation in response to general downturns in the merchant marine industry. In general, the purposes of the laws are to ensure a U.S. merchant fleet sufficient to provide a naval auxiliary in time of war or national emergency and to participate substantially in the carriage of foreign and domestic commerce.

The primary cargo preference laws in effect today are (1) the Cargo Preference Act of 1904, which generally requires that only U.S.-flag vessels be used to transport supplies by sea for the U.S. armed forces and (2) the Merchant Marine Act of 1936 (P.L. 835), as amended by the Cargo Preference Act of 1954 (P.L. 664), which generally requires that at least 50 percent of any U.S. government-controlled cargo shipped by sea be carried on privately owned U.S.-flag vessels. In 1985, the Merchant Marine Act of 1936 was amended to require that 75 percent of certain foreign food aid be shipped on privately owned U.S.-flag vessels. The Maritime Administration (MARAD) reports that the privately owned U.S. ocean-going commercial fleet is the ninth largest in the world by deadweight tonnage, constituting about 3 percent of the world fleet's tonnage.² The U.S. fleet

¹U.S.-flag vessels are registered in the United States and subject to additional U.S. laws and regulations that foreign-flag vessels are not subject to.

²Deadweight tonnage is the total lifting capacity of a ship, expressed in long tons; a long ton equals 2,240 lbs. Deadweight tonnage is the difference between the displacement of the empty vessel and the displacement of the vessel fully loaded.

consists of about 371 U.S.-flag merchant vessels of 1,000 gross tons and over. MARAD reported that of the 371 vessels, 23 were inactive, 49 were chartered by the Department of Defense (DOD), 134 were engaged in domestic trade, and 165 were engaged in international trade. The 165 vessels in international trade are the vessels that carry preference cargo.

Results in Brief

Cargo preference laws increased federal agencies' transportation costs by an estimated \$578 million per year for fiscal years 1989 through 1993 because U.S.-flag vessels generally charge more to carry cargo than their foreign-flag vessel counterparts.³ The average is about \$710 million per year when the costs associated with the Persian Gulf War are included. Four federal agencies—DOD, the Department of Agriculture (USDA), the Agency for International Development (AID), and the Department of Energy (DOE)—are responsible for more than 99 percent of preference cargo, by tonnage.

The effect of cargo preference laws on the U.S. merchant marine industry is mixed. On the one hand, the share of international oceanborne cargo carried by U.S.-flag vessels has declined despite cargo preference laws because most oceanborne international cargo is not subject to cargo preference laws. In 1992, for example, about 96 percent of oceanborne cargo was carried aboard foreign-flag vessels. On the other hand, these laws appear to have a substantial impact on the U.S. merchant marine industry by providing incentive for vessels to remain in the U.S. fleet. GAO estimates that without preference cargo, the equivalent of up to two-thirds of the 165 U.S.-flag vessels engaged in international trade, by tonnage, would leave the fleet. Most of the vessels that would leave would either reflag to another country to save costs or cease to operate if they are not competitive. This would directly affect about 6,000 U.S. shipboard jobs.

Principal Findings

The Costs of Cargo Preference Laws to the Federal Government

Transporting cargo on U.S.-flag vessels is more expensive than doing so on foreign-flag vessels largely because the former are required to be crewed by U.S. mariners, who generally receive higher wages and other benefits and have higher manning-level requirements than comparable foreign-flag vessels. In addition, U.S.-flag vessels are generally required to be built and

³Unless otherwise noted, all dollar figures are in constant 1993 dollars.

encouraged to be maintained and repaired in U.S. shipyards, which generally charge more than foreign shipyards. These costs are passed on to federal agencies when they use U.S.-flag vessels to ship international cargo. For example, for fiscal years 1989-93, DOD estimates that the additional transportation costs of the preference cargo it shipped on U.S.-flag vessels averaged about \$350 million per year. Most of DOD's preference cargo supports troops stationed overseas. The average is about \$482 million per year when the costs associated with the Persian Gulf War are included.

Other agencies that ship large amounts of preference cargo include USDA, AID and DOE. For fiscal years 1989-93, USDA and AID report that the additional transportation costs of the preference cargo they shipped on U.S.-flag vessels averaged about \$200 million and \$23 million per year, respectively. Most of their preference cargo is foreign aid. GAO estimates, for fiscal years 1989-93, that DOE paid, on average, less than \$2 million per year in additional transportation costs to ship oil for the Strategic Petroleum Reserve on U.S.-flag vessels.

The Effects of Cargo Preference Laws on the U.S. Merchant Marine

Since World War II, there has been a dramatic increase in the amount of international oceanborne cargo. Most of the increase has been in privately owned cargo that is not subject to cargo preference laws and is, therefore, often shipped on less expensive foreign-flag vessels. As a result, the percentage of oceanborne international cargo carried on foreign-flag vessels increased from 42 percent following World War II to 96 percent in 1992.

While U.S.-flag vessels carry only about 4 percent of all international cargo, the percentage of cargo carried by U.S.-flag vessels that is preference cargo is relatively large—33 percent in 1992. Thus, although cargo preference laws have not significantly affected the U.S. share of oceanborne cargo, they have a significant impact on the U.S. merchant marine industry. GAO measured this impact by estimating that, in the absence of preference cargo, the equivalent of between 61 and 68 percent, by tonnage, of the 165 U.S.-flag vessels engaged in international trade would leave the U.S. fleet. Many of the vessels could be competitive in international trade and would leave the U.S. fleet in order to lower their costs. Others would be unable to compete and would cease operating, either being scrapped or laid up. GAO confirmed its results about which vessels would leave the U.S. fleet via a survey of 18 vessel operators that controlled 112 of the 165 vessels engaged in international trade.

Approximately 6,000 mariners are employed aboard the vessels that GAO estimates would leave the U.S. fleet in the absence of preference cargo. This represents about 71 percent of the 8,500 shipboard jobs that MARAD reported as being supported by the 165 vessels engaged in international trade. GAO believes that cargo preference laws do not have a significant impact on the number of new ships built in U.S. shipyards because U.S. shipyards delivered only one ocean-going merchant vessel during fiscal years 1988-93. However, the amount of maintenance and repair work done at U.S. shipyards would likely decrease in the absence of preference cargo. Industry representatives whom GAO spoke with generally agreed with this assessment.

Recommendations

This report provides information on the costs and effects of cargo preference laws. It contains no recommendations.

Agency Comments

GAO discussed the contents of this report with the Chief, Transportation Division of the Office of Procurement, AID; cognizant officials of the Office of the Under Secretary of Defense for Acquisition and Technology; the Director, Operations and Readiness Division, Strategic Petroleum Reserves, DOE; and the Deputy Administrator for Commodity Operations, USDA. These agency officials generally agreed with the facts presented and provided only minor clarifications, which were incorporated where appropriate. GAO also discussed the contents of this report with the Deputy Administrator for Inland Waterways and Great Lakes, MARAD, who generally agreed with the facts presented but raised concerns about the accuracy of DOD's cargo preference cost estimates. However, these estimates are DOD's official figures. As requested, GAO did not obtain written agency comments on a draft of this report.

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Abbreviations

| | |
|-------|--------------------------------------|
| AID | Agency for International Development |
| CDS | construction-differential subsidy |
| DOD | Department of Defense |
| DOE | Department of Energy |
| DWT | deadweight ton |
| EUSC | Effective U.S. Control |
| GAO | General Accounting Office |
| LNG | liquified natural gas |
| MARAD | Maritime Administration |
| ODS | operating-differential subsidy |
| OMB | Office of Management and Budget |
| RO/RO | roll-on/roll-off (ship) |
| USDA | U.S. Department of Agriculture |

Introduction

The United States is the world's largest trading nation, with over \$1 trillion in trade in 1993. Nearly 50 percent of this trade, by value, was transported by sea. Throughout much of this century, however, the U.S. merchant marine industry has struggled to compete effectively in the international market. The U.S. ocean-going fleet is the ninth largest fleet in the world by deadweight tonnage, comprising about 3 percent of the world fleet's tonnage.⁴ The U.S. fleet, as of September 1993, comprised 371 privately owned vessels.

U.S.-flag vessels are not competitive in international trade—cargo carried between U.S. and foreign ports or between foreign ports—because they generally have higher operating and capital costs than foreign-flag vessels.⁵ (Foreign-flag vessels are restricted from carrying cargo between domestic ports.) According to Maritime Administration (MARAD) officials, crew costs account for the largest portion of the difference between the operating costs of U.S.- and foreign-flag vessels.⁶ U.S. crews receive higher wages and other benefits, and U.S.-flag vessels have higher manning level requirements than comparable foreign-flag vessels. Also, because U.S. shipyards generally charge more to build and maintain vessels than foreign shipyards, U.S.-flag vessels have higher capital and maintenance costs.

To help the U.S. merchant marine industry compete, the Congress has enacted a number of laws supporting the industry, including cargo preference laws, which require that most government-owned or -financed cargo that is shipped internationally be carried aboard U.S.-flag vessels. This cargo is known as preference cargo. Cargo preference laws guarantee a minimum amount of business for the U.S. merchant fleet; this additional business, in turn, promotes the remainder of the maritime industry because U.S.-flag vessels are required by law to be crewed by U.S. mariners, are generally required to be built in U.S. shipyards, and are encouraged to be maintained and repaired in U.S. shipyards.⁷ However,

⁴Deadweight tonnage is the total lifting capacity of a ship, expressed in tons of 2,240 lbs. It is the difference between the displacement of the empty vessel and the displacement of the vessel fully loaded.

⁵U.S.-flag vessels are registered in the United States and are subject to additional U.S. laws and regulations to which foreign-flag vessels are not. They must be owned by U.S. citizens, corporations, or governments and must be crewed mainly by U.S. citizens.

⁶MARAD is the federal agency responsible for promoting and monitoring the maritime industry, and is also responsible for monitoring federal agencies' compliance with cargo preference laws.

⁷The Tariff Act of 1930 (P.L. 361) imposes a 50-percent tariff on maintenance and repair work done on U.S.-flag vessels in foreign shipyards. Also, U.S.-flag vessels must either be built in the United States or have been a U.S.-flag vessel for at least 3 years to be eligible to carry preference cargo. See 46 U.S.C. App. 1241(b).

because U.S.-flag vessels often charge higher rates to transport cargo than foreign-flag vessels, cargo preference laws increase the government's transportation costs.

Cargo preference laws have long been controversial both from an economic and a political point of view. The proponents of cargo preference laws point to this nation's economic dependence on waterborne transportation for international trade and the role that merchant vessels play in transporting military supplies during wartime. They maintain that a strong merchant marine industry is vital to the nation's economic and military security and that cargo preference laws help to counter the subsidies that many foreign countries provide to their merchant fleets.

The opponents of cargo preference laws, on the other hand, argue that cargo preference laws cost the government money, have not been successful in maintaining a strong merchant marine industry, and do not always support the most militarily useful vessels. They also point out that the additional transportation costs hamper federal efforts to provide humanitarian aid overseas because the available funds are diverted to the transportation of that aid, instead of being used to purchase farm commodities and other types of aid.

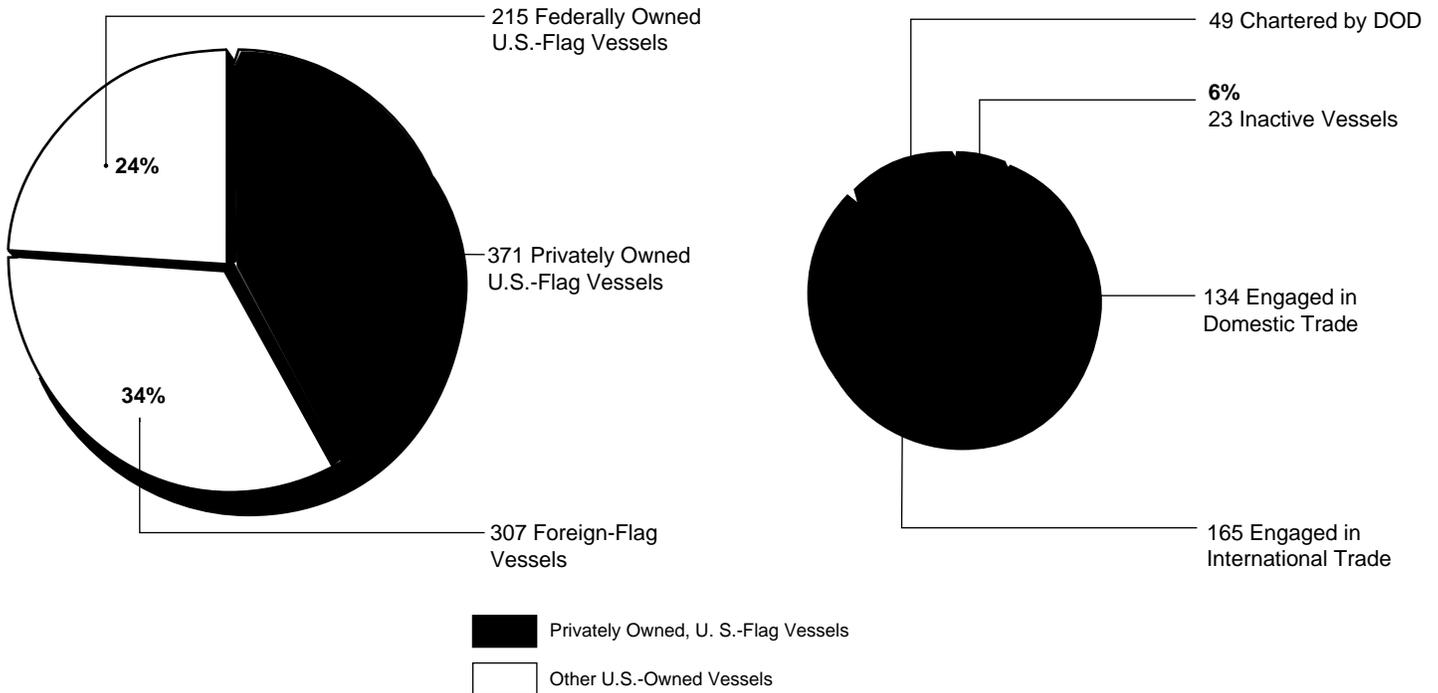
The U.S. Merchant Marine Fleet

Recently, MARAD reported that U.S. citizens, corporations, or the federal government owns about 893 ocean-going vessels weighing 1,000 gross tons or more.⁸ (See fig. 1.1.) Of the 893 vessels, 586 were U.S.-flagged, and the remaining 307 were owned by U.S. citizens or corporations but were foreign-flagged.⁹ Of the 586 U.S.-flag vessels, MARAD reported that 371 were privately owned and 215 were owned by the federal government. Most of the privately owned vessels are actively engaged in commerce, while most of the federally owned vessels are in long-term storage—held in MARAD's custody in case they are needed during a national emergency.

⁸This excludes vessels designed primarily to operate on inland waterways or the Great Lakes. Gross tons measure the internal volume of a ship. One ton equals 100 cubic feet.

⁹MARAD reported on U.S.-flag vessels as of September 30, 1993, and foreign-flag vessels as of July 1, 1993.

Figure 1.1: Disposition of U.S.-Owned, Ocean-Going Merchant Ships



Note: U.S.-flag vessels as of September, 1993; foreign-flag vessels as of July 1, 1993.

Source: Maritime Administration.

Foreign-flagged vessels owned by U.S. citizens or corporations, like all foreign-flagged vessels, are subject to the laws of the foreign country whose flag they fly, not the laws to which U.S.-flag vessels are subject. Sometimes, the laws of foreign countries include significant obstacles to the requisition of the vessels by the United States during national emergencies. Of the 307 U.S.-owned but foreign-flagged vessels, 219 are flagged in countries that do not have policies disallowing the U.S. government from requisitioning these vessels during national emergencies. The countries are the Bahamas, Honduras, Liberia, the Marshall Islands, and Panama. U.S.-flag vessels registered in these countries are said to be under “Effective U.S. Control” (EUSC). But according to MARAD officials, there is no guarantee, should requisitioning be necessary, that these nations will actually permit their vessels to be taken by the United States. And even if the United States is able to take foreign-flag EUSC vessels, the

foreign crews cannot be compelled to operate the vessels, and the operators are not obligated to return the vessels to the United States. In addition, EUSC vessels are not subject to any of the other laws or regulations that apply specifically to U.S.-flag vessels.

As of January 1993, the privately owned U.S.-flag vessels constituted the ninth largest fleet in the world by deadweight tons (DWT).¹⁰ These vessels have a carrying capacity of 18.8 million DWTS, which comprises about 3 percent of the world fleet's tonnage. Of the 371 privately owned U.S.-flag vessels, MARAD reported that 23 were inactive, 49 were chartered by the Department of Defense (DOD), 134 were engaged in domestic trade, and 165 were engaged in international trade. Since all preference cargo is international, cargo preference laws have the most direct effect on the portion of the U.S. fleet engaged in international trade. (See app. I for a list of vessel operators who carried preference cargo in 1993.)

Operating and Capital Costs of U.S.-Flag Vessels

U.S.-flag vessels generally charge more to carry cargo than foreign-flag vessels because they have higher operating and capital costs. MARAD officials identified several general reasons for this:

- Most of the higher costs are crew costs.¹¹ U.S. crews receive higher wages and other benefits, and U.S.-flag vessels have higher manning-level requirements than comparable foreign-flag vessels.
- Approximately half of the U.S. fleet is old and/or steam-powered. Of the 165 vessels engaged in international trade, about 50 percent are within 5 years of the end of their statutory life expectancy, which depending on the type of vessel is 20 or 25 years.¹² In addition, steam-powered vessels are less efficient and use more fuel than the newer diesel-powered vessels that comprise virtually all of the foreign-flag vessels engaged in international trade with the United States.¹³
- U.S. shipyards generally charge more to build and maintain vessels than foreign shipyards. As a result, U.S.-flag vessels generally have higher

¹⁰DWT is a more accurate measure for comparing the size of fleets because DWT measures a vessel's (or fleet's) carrying capacity, which varies widely between vessels. For example, with 19.4 million DWTS, China's fleet is only slightly larger than the U.S. fleet by tonnage. But China's fleet has over 1,200 vessels, which is more than three times the number in the U.S. fleet.

¹¹Appendix II provides information on the size and salaries of U.S. and foreign crews.

¹²A vessel's statutory life expectancy is set forth in the Federal Ship Mortgage Insurance Program, the Construction Differential Subsidy program, the Operating Differential Subsidy program, and for depreciation purposes in several sections of the Merchant Marine Act of 1936 (P.L. 835), as amended.

¹³Eighty-four of the 165 privately owned U.S.-flag vessels are steam-powered.

capital and maintenance costs. Although not all U.S.-flag ships were built in U.S. shipyards, the Tariff Act of 1930 (P.L. 361) imposes a 50-percent tariff on the cost of maintenance and nonemergency repairs performed on U.S.-flag vessels in foreign shipyards.

The Requirements and Purposes of Cargo Preference Laws

Since the passage of the first cargo preference law—the Cargo Preference Act of 1904 (P.L. 198)—the Congress has, in response to general downturns in the maritime industry, repeatedly reaffirmed its intent to support the U.S. merchant marine industry.¹⁴ Following the 1904 act, several major cargo preference laws were passed that guarantee cargo to U.S.-flag vessels; this guarantee was intended to promote the merchant marine industry. The 1904 act generally requires that only U.S.-flag vessels be used to transport supplies for the U.S. armed forces by sea. However, if the President finds that the rate charged by those vessels is excessive or otherwise unreasonable, contracts for transportation may be made as otherwise provided by law.

In 1934, the Congress passed Public Resolution 17, which requires that all cargo financed by the Export-Import Bank be shipped on U.S.-flag vessels, unless granted a waiver. In 1936, the Congress passed the Merchant Marine Act of 1936 (P.L. 835), which required that a “substantial portion” of internationally shipped cargo be transported on U.S.-flag vessels. In 1954, the Congress passed the Cargo Preference Act of 1954, which amended the Merchant Marine Act of 1936 to require that at least 50 percent of any government-controlled cargo shipped by sea be carried on privately owned U.S.-flag vessels. However, the 50-percent provision can be waived if U.S.-flag vessels are not available at “fair and reasonable” rates and in certain emergency situations. And finally, the Congress passed the Food Security Act of 1985 (P.L. 99-198), which increased from 50 to 75 percent the percentage of food aid cargo that the U.S. Department of Agriculture (USDA) and the Agency for International Development (AID) must ship on U.S.-flag vessels (however, the act exempted other USDA cargo).

¹⁴The Merchant Marine Act of 1920 (P.L. 261) contains a provision, known as the Jones Act, which requires that all domestic waterborne trade be carried on U.S.-flag vessels. Generally, however, only laws that reserve international cargo for U.S.-flag vessels are referred to as cargo preference laws. Appendix III provides a historical perspective on cargo preference laws since 1904.

Support of the U.S. Merchant Marine by Other Federal Programs

Besides cargo preference laws, a number of other programs were designed to promote the U.S. merchant marine industry. To help offset some of the higher operating and capital costs faced by U.S.-flag carriers engaged in international trade, the Merchant Marine Act of 1936 authorizes MARAD to pay operating-differential subsidies (ODS) and construction-differential subsidies (CDS) to operators of vessels in international trade. Additionally, the Jones Act restricts foreign-built U.S.-flag vessels from engaging in domestic trade.

ODS payments support the portion of the U.S. fleet engaged in international trade by offsetting the higher costs to operate U.S.-flag vessels. ODS recipients normally enter into 20-year contracts with MARAD, during which time they may not engage in domestic trade or reflag the vessel to another country, and their subsidy will be reduced if they carry cargo between U.S. ports as part of a voyage involving foreign ports. In fiscal year 1993, the federal government provided 75 vessels with a total of \$215.5 million in ODS payments.¹⁵ No new ODS contracts have been awarded since 1981.

CDS are payments based on the difference in cost to construct vessels in U.S. shipyards and foreign shipyards. Vessels built with CDS payments may not reflag for 25 years (20 years for tankers), may not enter into domestic trade (voyages with stops exclusively at U.S. ports), and must pay back a portion of the CDS if they carry cargo between U.S. ports as part of a voyage involving foreign ports. Although the program has not been eliminated, the last vessel built under this program was contracted for in 1981 and delivered in 1984. Currently, 79 vessels are under CDS restrictions.

All vessels in international trade provide either charter or liner services.¹⁶ Charter-service vessels do not have regularly scheduled sailings, fixed routes, or fixed freight rates. They typically carry a shipload worth of cargo for only one or a few customers at the same time. Conversely, liner-service vessels have regularly scheduled sailings on fixed routes at fixed freight rates. They typically carry small amounts of cargo for many customers at one time and will sail even if not completely full. Vessels providing charter service cannot receive ODS payments while carrying preference cargo; vessels providing liner service can. Freight rates on liner-service vessels typically are higher than those on charter-service vessels. In addition, most liner-service vessels, whether U.S.-flagged or foreign-flagged, belong to shipping conferences. Members of shipping conferences agree to charge similar prices for similar services in order to

¹⁵See appendix V for a list of ODS recipients and the funds they received for fiscal years 1991-93.

¹⁶We use the term charter service to include all nonliner service.

minimize price competition. However, U.S. law contains a number of provisions that mitigate this effect.

Other GAO Reports

In our 1994 report, Cargo Preference Requirements: Objectives Not Significantly Advanced When Used in U.S. Food Aid Programs (GAO/GGD-94-215, Sept. 29, 1994), we reported that the application of cargo preference to food aid programs does not significantly contribute to maintaining a naval auxiliary in time of war or national emergency or to the carriage of domestic and foreign commerce. We also reported that cargo preference laws adversely affect the operation of U.S. food aid programs. In our 1990 report, Cargo Preference Requirements: Their Impact on U.S. Food Aid Programs and the U.S. Merchant Marine (GAO/NSIAD-90-174, June 19, 1990), we found that the differential between the food aid shipping costs of U.S.- and foreign-flag vessels decreased by 50 percent per ton between 1981 and 1989. We also found that during this same time period, despite an increase in the amount of government-owned or -financed cargo shipped on U.S.-flag vessels, the number of U.S.-flag vessels decreased. Additionally, in 1984 we issued Economic Effects of Cargo Preference Laws (GAO/OCE-84-3, Jan. 31, 1984). In that report, we estimated that in 1980, between 21 and 33 additional ships and from 1,400 to 2,200 shipboard workers were employed because of cargo preference laws and that those laws cost the federal government between \$71 million and \$79 million (between \$123.1 million and \$136.9 million, respectively, in constant 1993 dollars). However, that report did not include DOD in its analysis because DOD's policy was (and is) to ship on U.S.-flag vessels even if cargo preference laws were eliminated.¹⁷

Objectives, Scope, and Methodology

On April 29, 1993, Senators Hank Brown, John C. Danforth, Charles E. Grassley, Don Nickles, and Malcolm Wallop asked us to provide information on the cargo preference programs and related information on the U.S. merchant marine industry. On the basis of subsequent discussions with their staff, we agreed to provide information on the cost to the federal government of cargo preference laws and their effects on the U.S. merchant marine industry along with certain additional information. This report does not make conclusions regarding the desirability of cargo preference laws or recommendations for changes that could be made to those laws. Additional details on our scope and methodology are contained in appendix VIII. We performed our review from June 1993

¹⁷Although the January 1984 report excluded DOD from its analysis, this report includes DOD to give a fuller account of the cost to the federal government of reserving cargo for U.S.-flag vessels and the impact that preference cargo has on the maritime industry.

Chapter 1
Introduction

through September 1994 in accordance with generally accepted government auditing standards.

The Costs of Cargo Preference Laws to the Federal Government

Because the cost to transport cargo on U.S.-flag vessels is generally higher than it is on foreign-flag vessels, cargo preference laws add directly to a federal agency's transportation costs. Although cargo preference laws apply to most federal agencies, four agencies—DOD, USDA, AID, and the Department of Energy (DOE)—were responsible for more than 99 percent of the 100 million tons of government cargo shipped internationally during calendar years 1988 through 1992. The estimated additional costs for transporting preference cargo for these agencies, including DOD's costs associated with the Persian Gulf War, totaled, on average, about \$710 million per year in fiscal years 1989 through 1993. (The average is about \$578 million when the costs associated with the Persian Gulf War are excluded.) The \$710 million estimate is about 50 percent of the \$1.4 billion spent annually by the federal agencies to ship preference cargo on U.S.-flag vessels.

DOD maintains that its policy is to ship a substantial portion of its cargo on U.S.-flag vessels and that it would continue this policy in the absence of cargo preference laws. However, because DOD ships about 50 percent of the cargo subject to the preference laws, we have included estimates of its additional transportation costs in order to give a more complete picture of the cost to the federal government of reserving cargo for U.S.-flag vessels even though DOD's portion might continue without cargo preference laws. DOD's cost estimate is based on an approximation of the total cost to ship cargo on U.S.-flag vessels and on judgmentally selected data on the cost to ship cargo on foreign-flag vessels. Because foreign-flag carriers do not consistently bid for DOD cargo, the Department cannot ascertain what rates foreign-flag vessels would have actually charged to carry its cargo. As a result, DOD's cost estimate is based on DOD officials' expertise and judgment—DOD does not keep complete records that show how it derived its estimates. We did not independently verify these figures.

Table 2.1 shows each agency's estimated cost of reserving preference cargo for U.S.-flag vessels in fiscal years 1989 through 1993. MARAD is included because it must, by law, pay a portion of USDA's food aid transportation costs.¹⁸

¹⁸The Food Security Act of 1985 requires the Secretary of Transportation, who delegated responsibility to MARAD, to finance any increased ocean freight charges resulting from the statutory increase from 50 percent to 75 percent of the percentage of food aid cargo carried on U.S.-flag vessels.

Chapter 2
The Costs of Cargo Preference Laws to the
Federal Government

Table 2.1: Estimates of the Cost of Cargo Preference

| 1993 constant dollars in millions | | | | | |
|-----------------------------------|--------------------------|------------|----------------|------------|------------|
| Agency | Fiscal year ^a | | | | |
| | 1989 | 1990 | 1991 | 1992 | 1993 |
| DOD ^b | 376 | 353 | 969 | 352 | 361 |
| USDA | 166 | 121 | 117 | 120 | 264 |
| AID | 27 | 25 | 13 | 13 | 38 |
| MARAD | 50 | 24 | 36 | 52 | 62 |
| DOE (Strategic Petroleum Reserve) | 1 | 4 | 0 ^c | 2 | 2 |
| Total | 620 | 527 | 1,135 | 539 | 727 |

^aDollar figures for all agencies except AID are based on fiscal year estimates. Dollar figures for AID are based on calendar year estimates.

^bDOD's costs include the following costs related to the Persian Gulf War (in constant 1993 dollars): \$8 million in fiscal year 1990, \$620 million in fiscal year 1991, and \$31 million in fiscal year 1992.

^cThe Strategic Petroleum Reserve's purchasing activity was suspended in August 1990 because of the unstable conditions in the Persian Gulf, and therefore no shipments were made during 1991.

Source: Data submitted to the Office of Management and Budget, federal budgets, AID, and GAO's analysis of data from DOE.

The Department of Defense

DOD ships more preference cargo than any other federal agency—approximately 50 percent of the total in 1988 through 1992. Almost all of the cargo that DOD ships is categorized as “troop support.” Troop support includes spare parts, food stuffs, ammunition, commissary items, and privately owned vehicles. In 1988 through 1992, DOD shipped about 51 million metric tons of cargo. Of this amount, 45 million tons (88 percent) was shipped on U.S.-flag vessels.¹⁹ DOD estimates that its additional transportation costs to ship preference cargo on U.S.-flag vessels in fiscal years 1989 through 1993 was \$2.4 billion, or an average of

¹⁹DOD did not ship 100 percent of its cargo on U.S.-flag vessels because U.S.-flag vessels were not always available. According to a DOD official, this situation occurred especially for shipments between foreign ports.

\$482 million per year for the last 5 years.²⁰ The average is about \$350 million per year when the costs associated with the Persian Gulf War are excluded.

The Department of Agriculture and the Agency for International Development

USDA and AID are responsible for food assistance programs under which U.S. agricultural commodities are donated or sold abroad for humanitarian and developmental purposes. The food assistance is provided primarily through five programs: titles I, II, and III of the Agricultural Trade Development and Assistance Act of 1954 (P.L. 480, commonly called, collectively, the P.L. 480 program); section 416 of the Agricultural Act of 1949 (P.L. 439); and the Food for Progress Act of 1985 (P.L. 99-198). Although AID administers some of the food aid programs, the transportation costs of these programs that are borne by the federal government, and hence the additional costs to ship on U.S.-flag vessels, are paid for through USDA and MARAD appropriations.

- The title I program provides financing to developing countries to purchase U.S. agricultural commodities. It is administered by USDA.
- The title II program donates packaged, processed, and bulk commodities to the least-developed countries. Commodities are used directly to feed refugees and children as well as for other authorized purposes. It is administered by AID.
- The title III program (known as the Food for Development Program) provides donations to governments to support long-term growth in agriculture and related activities in the least-developed countries. It is administered by AID.
- The section 416 program donates bulk grain and other surplus agricultural commodities to the least-developed countries. It is administered by USDA.
- The Food for Progress program provides agricultural commodities to developing countries that have made commitments to expand free enterprise in their agricultural economies. It is administered by USDA.

²⁰DOD officials explained that despite the fact that DOD ships a significant amount of its cargo on liner-service vessels, which generally charge the same rate to carry cargo whether the vessel is U.S.-flag or foreign-flag, DOD still pays higher rates to ship cargo on U.S.-flag vessels that provide liner services. The officials explained that DOD pays higher rates because of its policy to award not more than 75 percent of its business to a single company on certain routes and because of the limited competition between U.S.-flag carriers for DOD's service contracts. Service contracts provide large shippers such as DOD with bulk discounts. Under these contracts, the shipper agrees to ship a specified quantity of cargo over time, and the carrier agrees to provide space for this cargo at a rate that is lower than the conference rate. Although DOD awards service contracts competitively, in several key markets, there are only two U.S. carriers large enough to compete for the contracts, which restricts competition between the carriers. DOD officials maintain that this causes DOD to pay higher freight rates to ship cargo on U.S.-flag liner-service vessels than it otherwise would.

In 1988 through 1992, USDA and AID shipped 36 million metric tons of food aid. Of the total amount, 27.5 million tons (approximately 77 percent) was shipped on U.S.-flag vessels.²¹ These agencies, as well as MARAD, which must pay a portion of the transportation costs, estimate that the additional transportation costs to ship preference cargo on U.S.-flag vessels in fiscal years 1989 through 1993 was about \$1 billion, or an average of \$200 million per year for the last 5 years.²²

Besides food aid, AID is also responsible for providing aid such as generators, automobiles, corrugated metal, and lumber to developing countries. In 1988 through 1992, this cargo totaled about 5 million metric tons. Of this amount, 2.6 million metric tons (about 52 percent) was shipped on U.S.-flag vessels. On the basis of the cost to ship its cargo on U.S.-flag and foreign-flag vessels, AID estimates that its additional transportation costs to ship preference cargo on U.S.-flag vessels for calendar years 1989 through 1993 was \$116 million dollars, or an average of \$23 million per year for the last 5 years.

The Department of Energy

The Strategic Petroleum Reserve is a program administered by DOE to store 750 million barrels of crude oil in salt domes along the U.S. Gulf Coast to guard against disruptions in international oil supplies.²³ In 1988 through 1992, DOE reported that it shipped approximately 7.6 million metric tons of oil. Of this amount, 3.7 million tons (49 percent) was shipped on U.S.-flag vessels.²⁴ On the basis of data that DOE provided us on the amount and cost of oil that it shipped on U.S.- and foreign-flag vessels, we estimate that the Department's additional transportation costs to ship preference cargo on U.S.-flag vessels for fiscal years 1989 through 1993 was approximately \$9 million dollars, or an average of less than \$2 million per year for the last 5 years.

²¹The Food Security Act of 1985 requires that at least 75 percent of government food aid provided to foreign countries under the five programs listed above be shipped on U.S.-flag vessels.

²²USDA and AID developed an estimate of the additional transportation costs of complying with cargo preference laws based, in part, on the cost to ship the 25-percent food aid that is carried by foreign-flag vessels. We did not independently verify these cost figures.

²³As of August 1994, 592 million barrels of oil had been deposited in salt mines.

²⁴During this time period, MARAD reports that the Strategic Petroleum Reserve was in compliance with cargo preference laws every year except 1990, when DOE was forced to suspend program activity because of unstable conditions in the Persian Gulf.

Conclusions

Cargo preference laws add directly to a federal agency's transportation costs. In fiscal years 1989 through 1993, the five agencies responsible for the transportation costs of most of the government's international cargo paid an estimated additional \$3.5 billion in transportation costs to ship cargo on U.S.-flag vessels. However, DOD estimates that \$659 million of this cost was related to the Persian Gulf War. The \$3.5 billion estimate represents about 51 percent of the \$6.9 billion spent to ship preference cargo on U.S.-flag vessels.

Cargo Preference Laws and the U.S. Merchant Marine

By guaranteeing business for U.S.-flag vessels, which (1) are required to be crewed by U.S. mariners, (2) are generally required to be built in U.S. shipyards, and (3) are encouraged to be maintained in U.S. shipyards, cargo preference laws promote the U.S. maritime industry. However, their effect on the U.S. merchant marine industry is mixed. Although cargo preference laws have not had the effect of maintaining the share of international oceanborne cargo carried by U.S.-flag vessels, the U.S. fleet is dependent on preference cargo for a significant portion of the international cargo that it carries.

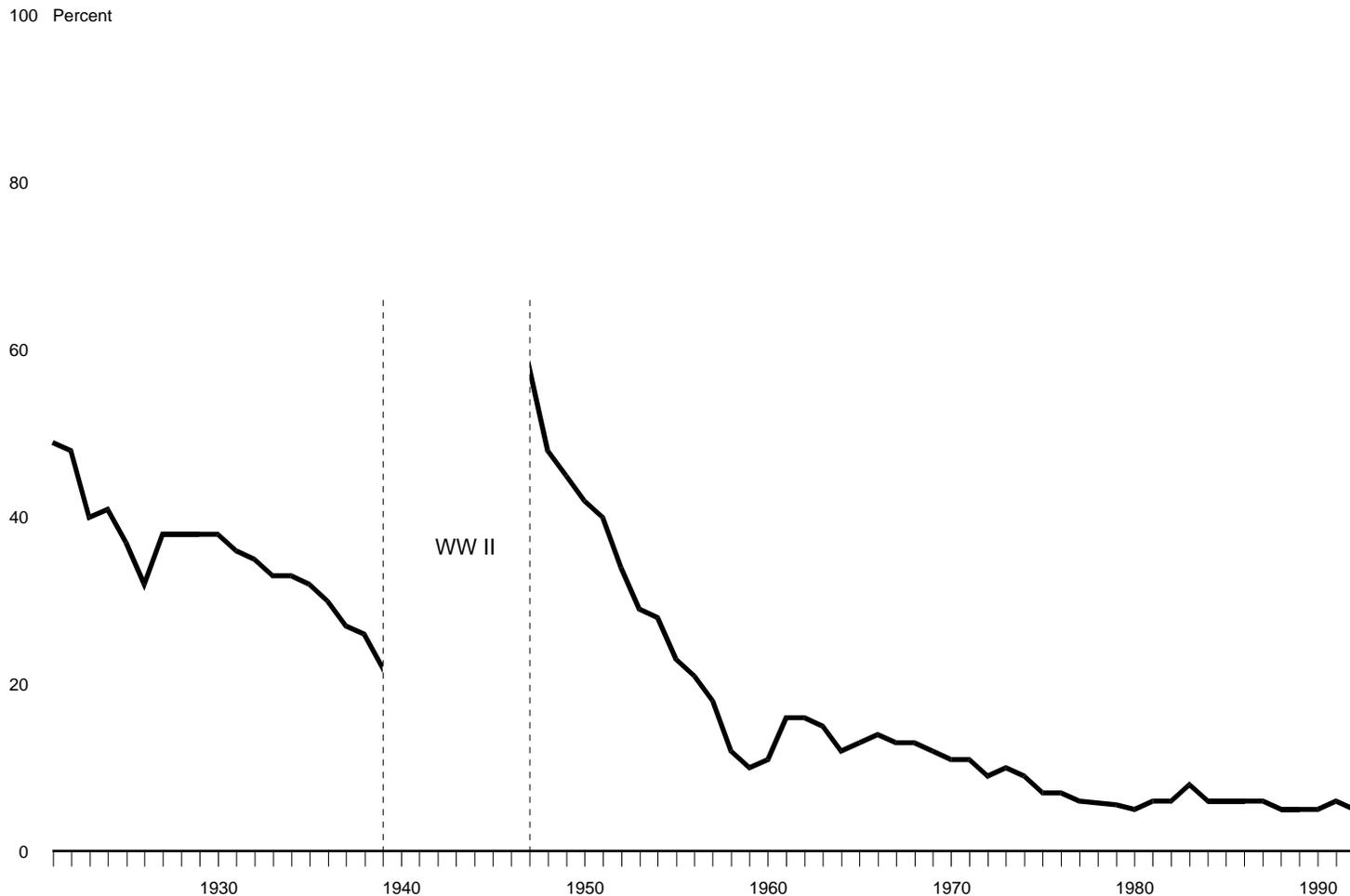
The Historical Impact of Cargo Preference Laws on the U.S. Merchant Fleet

Historically, cargo preference laws have not prevented a decline in the share of oceanborne cargo carried by U.S.-flag vessels. Throughout most of this century, with the exception of the periods immediately following World Wars I and II, the U.S. fleet has comprised a small percentage of the world fleet and carried a small percentage of the United States' international cargo. Additionally, the amount of cargo reserved for U.S.-flag vessels has averaged only 5 percent of international cargo since 1961.

As shown in figure III.1a (see app. III), since 1906, the U.S. fleet has experienced significant growth only during the World Wars. In both instances, this growth was followed by extended periods of decline. The size of the U.S. fleet increased from about 6 percent of the world fleet's size, by gross tonnage, to 23 percent during and immediately following World War I but steadily declined to about 13 percent just prior to World War II. The relative size of the U.S. fleet increased again during World War II—to about 38 percent of the world fleet's size in 1948, shortly after the war's end—but declined steadily thereafter to about 3.9 percent of the 397 million gross tons in the world fleet in 1992. The relative decline in the U.S. fleet since 1948 can be attributed in large part to the 460-percent increase in the size of the world fleet, even though the size of the U.S. fleet decreased about 42 percent during this time. The decline in the relative size of the U.S. fleet also corresponds to the decline in the percentage of international trade carried on U.S. ships. As figure 3.1a shows, the percentage of international trade carried on U.S.-flag ships was substantial following World Wars I and II—49 percent and 58 percent, respectively—but declined immediately thereafter. In 1992, U.S.-flag vessels carried approximately 4 percent of the nation's oceanborne international trade.

Additionally, figure 3.1b shows that since World War II, there has been a dramatic increase in the amount of international oceanborne cargo. Most of the increase has been in privately owned cargo, which is not subject to cargo preference laws and is often shipped on less expensive foreign-flag vessels. The amount of cargo reserved for U.S.-flag vessels is a very small portion of total international cargo and therefore has not contributed substantially to the total share of cargo carried by U.S.-flag vessels. As a percentage of international cargo, preference cargo carried on U.S.-flag vessels ranged from 11 percent in 1962-63 to less than 2 percent in 1992 and averaged 5 percent during this time period.

Figure 3.1a: U.S. Oceanborne International Trade, 1921-92—Percentage Carried on U.S.-Flag Vessels

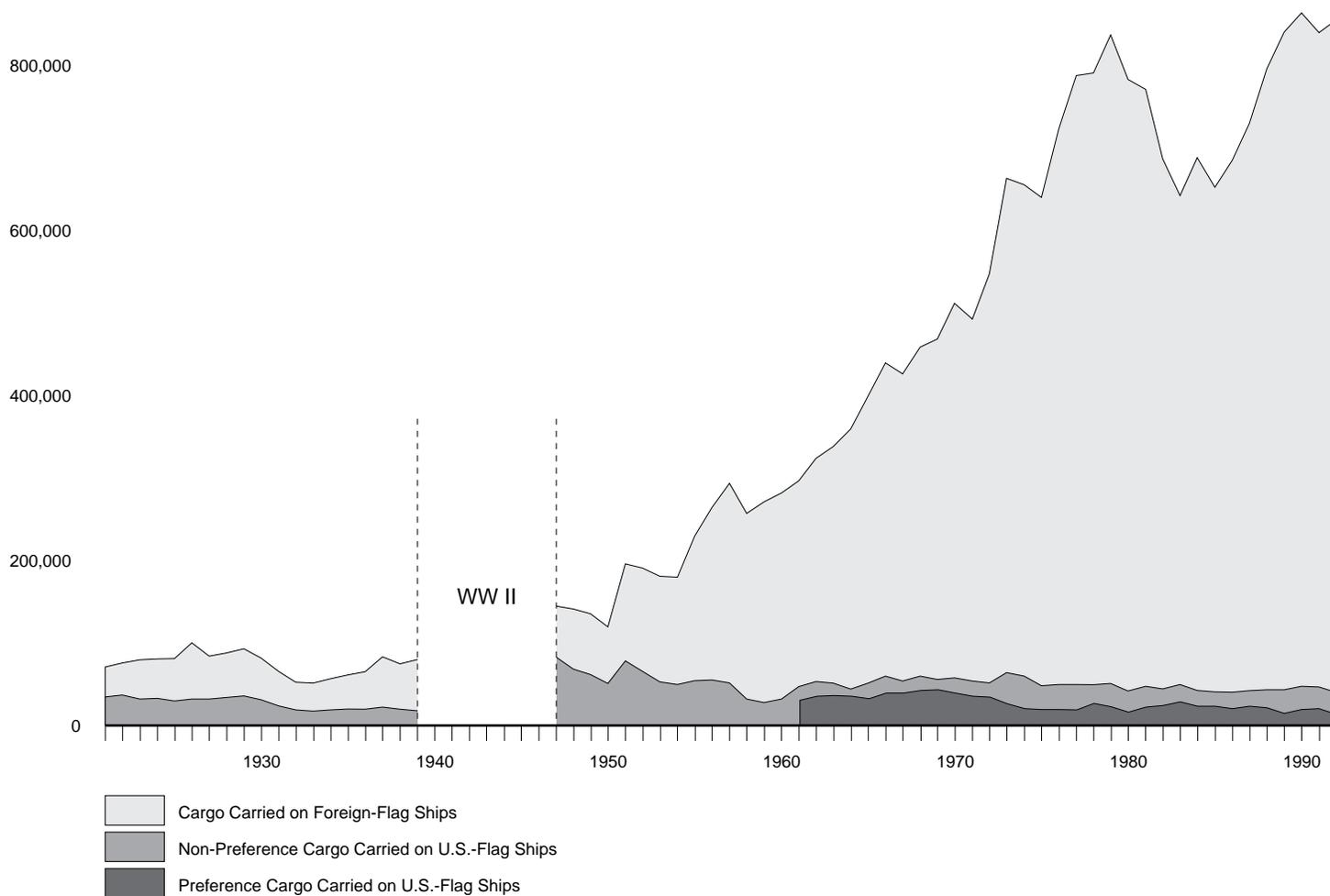


Note: Data included privately and federally owned internationally shipped cargo. However, the comprehensiveness of the data varies by year because of differences in sources.

Chapter 3
Cargo Preference Laws and the U.S.
Merchant Marine

Figure 3.1b: U.S. Oceanborne International Trade, 1921-92—Metric Tons Carried on All Vessels

1,000,000 Metric Tons (in thousands)



Note: Data included privately owned and federally owned internationally shipped cargo. However, the comprehensiveness of data varies by year because of differences in sources.

The Impact of Cargo Preference Laws on the U.S. Maritime Industry

While cargo preference laws do not appear to have significantly affected the share of international oceanborne freight carried on U.S.-flag vessels, we estimate that in the absence of preference cargo, a significant portion of the U.S. fleet would reflag or cease operating. This would significantly affect the number of shipboard jobs on U.S.-flag vessels engaged in international trade. However, the impact on shipyards would be minimal.

Impact of Cargo Preference Laws on the U.S. Fleet

The 165 vessels active in international trade on September 30, 1993, have an aggregate carrying capacity of 7.3 million DWTs. We estimate that in the absence of preference cargo, vessels with a carrying capacity of between 4.4 million and 5 million DWTs might leave the active U.S.fleet.²⁵ Table 3.1 summarizes our findings.

Table 3.1: Estimated Effects on U.S. Fleet Engaged in International Trade If Cargo Preference Laws Are Eliminated

| DWTs in thousands | | | | |
|-------------------|----------------------------|---------------------------------|------------|--------------|
| Type of vessel | Tonnage leaving U.S. fleet | Tonnage remaining in U.S. fleet | Uncertain | Total |
| General cargo | 224 | 53 | 0 | 277 |
| Bulk carrier | 755 | 33 | 54 | 842 |
| Tankers | 1,289 | 1,863 | 227 | 3,379 |
| Intermodal | 2,164 | 399 | 237 | 2,800 |
| Total | 4,432 | 2,348 | 518 | 7,298 |

Some of the vessels leaving the U.S. fleet will likely be vessels that have traditionally operated in the domestic trade but are displaced by vessels from the international trade. Vessels that leave the U.S. fleet will most likely either reflag to achieve cost savings or cease operating (either being scrapped or laid up) if they are not competitive. Many of the vessels that reflag may continue to be owned by a U.S. parent company and may reflag to one of the five countries that allow vessels owned by U.S. citizens to be under Effective U.S. Control.

Our analysis of the reduction of tonnage in the U.S. fleet that would occur if cargo preference laws and policy were eliminated is based on the ability of the vessels to compete in the international trade and, if eligible, to compete in domestic trade. We included in our analysis an examination of other factors, such as international political considerations and the

²⁵In reporting the results of our analysis, we are using DWTs to de-emphasize the importance of individual vessels because of the wide variance in carrying capacity between them and because some vessels operating in the international trade may displace others in the domestic trade instead of leaving the fleet.

amount of preference cargo that vessels have carried. Additionally, we made the assumption that ODS payments alone, in the absence of preference cargo, are generally not sufficient to induce a carrier to remain U.S.-flagged. We conducted our analysis in consultation with MARAD officials and confirmed our estimate about which vessels would leave the U.S. fleet with information obtained from 18 vessel operators that controlled 112 of the 165 vessels engaged in international trade.

Because of the complexity of the issues, we did not include in our analysis several considerations that might have caused us to overestimate or underestimate the number of U.S.-flag vessels that would leave the fleet. The considerations that might have caused us to overestimate the effect on the U.S. fleet include the following factors: (1) U.S.-flag vessels need the permission of MARAD to change the nationality of their registry and (2) some vessel owners might keep their vessels under the U.S. flag for nationalistic or personal reasons. Additionally, some vessels, although not economically viable, may be militarily useful, prompting the U.S. government to purchase them instead of letting them be scrapped. This, however, would not affect our estimate of the number of vessels that would leave the privately owned U.S. fleet.

However, we also did not include in our analysis the number of vessels likely to leave the fleet regardless of the status of cargo preference. The fleet of privately owned, ocean-going vessels has declined 16 percent (by DWTs) since 1988. Additionally, nearly one-quarter of the 165 vessels engaged in international trade have already exceeded their statutory life expectancy, and another quarter will do so within 5 years. The statutory life of a vessel is 25 years, except for tankers, whose expectancy is 20 years.

Types of Vessels Affected by Cargo Preference Laws

Four general types of vessels—general cargo ships, bulk carriers, tankers, and intermodal ships—would be affected if cargo preference laws and policy were eliminated. General cargo ships are traditional multipurpose freighters that carry nonuniform items packaged as single parcels or assembled together on pallet boards. Cargo is typically lifted on or off the general cargo vessels using wire or rope slings and a crane. Bulk carriers are ships that carry homogenous, unpacked cargo, usually in shipload lots. If they are designed to carry dry bulk commodities such as grain and ore, they are classified as bulk carriers. If they are designed to carry liquid commodities such as oil and petroleum products, they are classified as tankers. Some tankers are specially designed to carry liquified natural gas

(LNG) and are called LNG tankers. Intermodal ships include container ships and roll-on/roll-off ships known as RO/ROs. Container ships are designed to carry cargo in standard-size preloaded containers that permit rapid loading and unloading and efficient transportation of cargo to and from the port area. RO/ROs are designed to permit trucks, trailers, and other vehicles carrying cargo to drive on and off.

General Cargo Vessels

MARAD reported that 18 general cargo vessels with a total of 282,000 DWTs are employed in international trade. We believe that about 81 percent of these vessels, by tonnage, would leave the U.S. fleet if cargo preference laws and policy were eliminated; most would be scrapped. The vessels that would leave are steam-powered and unable to compete effectively with the more efficiently configured intermodal carriers. Additionally, many of these vessels rely on preference cargo for a substantial portion of their business. The vessels that would remain have specialized uses and/or are of a more modern design.

Figure 3.2: A General Cargo Vessel



Source: MARAD.

Bulk Carrier Vessels

MARAD reported that 17 bulk carriers with a total of 842,000 DWTs are employed in international trade. We believe that between 90 and 96 percent of these vessels, by tonnage, would leave the U.S. active fleet if cargo preference laws and policy were eliminated; many would remain U.S.-owned but foreign-flagged. Most of these vessels are ineligible to enter domestic trade because they were built in foreign shipyards or built with construction-differential subsidies. Many are relatively new (built in the mid-1980s) diesel-powered vessels that could be competitive in international trade if they reduced their operating costs by reflagging.

Figure 3.3: A Bulk Carrier Vessel



Source: MARAD.

Tankers

MARAD reported 45 tankers employed in international trade with a total of 3,384,000 DWTS. We believe between 38 and 45 percent of these vessels, by tonnage, would leave the U.S. active fleet if cargo preference laws and policy were eliminated. Generally, steam-powered tankers would likely be scrapped because they are not competitive in international trade and are either ineligible to enter the domestic trade or would not find sufficient business in the domestic trade to remain in operation. However, there are several notable exceptions to potential scrapping. We believe the LNG tankers would remain U.S.-flagged because they do not receive ODS subsidies and do not carry preference cargo. Also, some of the double-bottom tankers may be competitive in the domestic trade because

the Oil Pollution Act of 1990 (P.L. 101-380) phases out these tankers at a slower rate than tankers with a single bottom. However, the double-bottom tankers will likely displace tankers of similar size that are already operating in the domestic trade. Additionally, we believe it likely that the diesel-powered tankers that operate without ODS subsidies and generally do not carry preference cargo would be unaffected by changes to cargo preference laws and would remain U.S.-flagged. Also, several tankers would continue operating for international political reasons having to do with the Persian Gulf War. Finally, several diesel-powered tankers are or will soon be eligible to enter the domestic trade but could be competitive internationally; consequently, we are unsure of what would happen with them.

Figure 3.4: A Tanker



Source: MARAD.

Intermodal Vessels

MARAD reported that 85 intermodal vessels with a total of 2,804,000 DWTs are employed in international trade. If cargo preference laws and policy were eliminated, we believe about 77 to 86 percent of the vessels, by tonnage, would leave the U.S. active fleet, many remaining U.S.-owned but foreign-flagged. We believe that many of the steam-powered intermodal vessels not already engaged in domestic trade would be scrapped because they would not be competitive in international trade and the domestic trade has no room for substantial additional tonnage, although it is uncertain whether none would enter the domestic trade. Most of the diesel-powered intermodal vessels are foreign built and would be competitive in the international trade. We believe that many of these vessels would reflag and most that remain U.S.-flagged would do so because of international political considerations.

Figure 3.5: An Intermodal Vessel



(Figure notes on next page)

Source: MARAD.

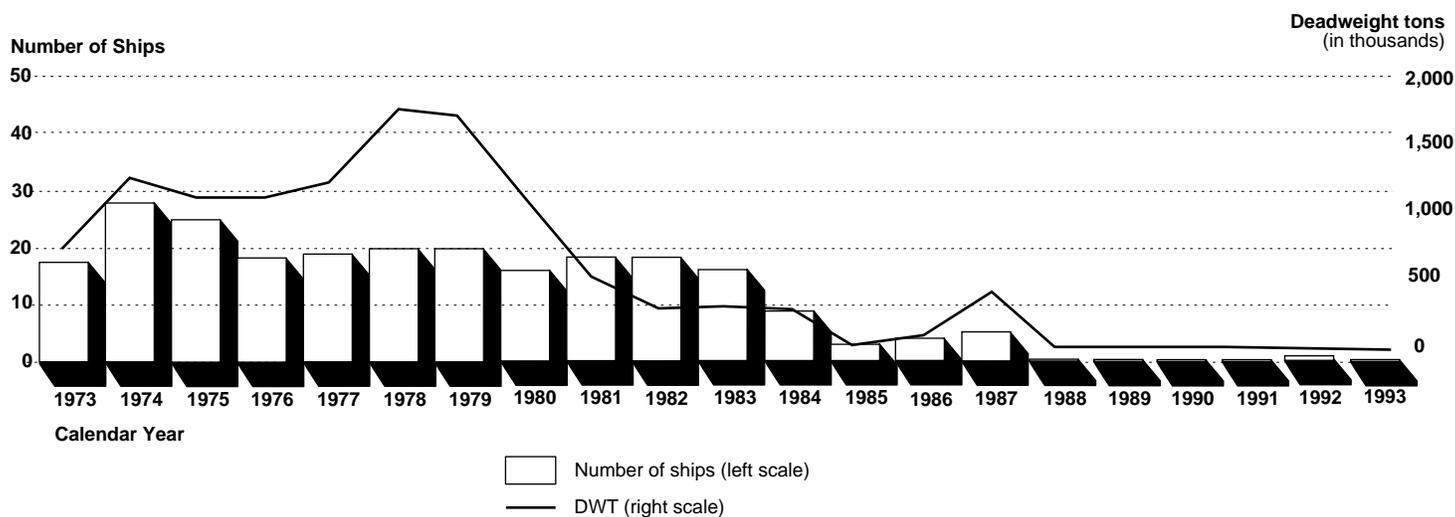
Impact of Cargo Preference Laws on Maritime Employment

If cargo preference laws and policy were eliminated, we estimate that up to about 6,000 U.S. mariners would lose their jobs aboard U.S.-flag ships. This is approximately 71 percent of the 8,500 mariners employed on the 165 U.S.-flag vessels that MARAD reported are engaged in international trade. Our estimate of the impact on the maritime industry resulting from the elimination of cargo preference laws and policy stems from our analysis of the number of vessels we believe would have valid reasons to either reflag or leave service entirely if cargo preference laws were eliminated. On the basis of the size of the crews on the vessels we believe would leave the U.S. fleet, we estimated the number of seafaring jobs that would be lost. On the basis of the information provided to us by MARAD, the vessels associated with the 4.4 million to 5 million DWTS we believe might leave the fleet if cargo preference laws were eliminated support 2,600 to 3,000 billets (crew positions aboard a vessel). Since most mariners work aboard ship for 6 months of the year, and taking into account sick leave and other reasons for their not working full time, we estimate that 2.1 mariners are employed for every billet.

Impact of Cargo Preference Laws on Shipyards

We do not anticipate that the elimination of cargo preference laws and policy will significantly affect the number of vessels built in U.S. shipyards. The workload at U.S. shipyards is dominated by federal contracts. Fourteen privately owned U.S. shipyards are engaged in or seeking contracts for the construction of ocean-going or Great Lakes vessels of over 1,000 gross tons. Since 1983, 90 percent of the production workers employed by these shipyards, on average, were engaged in Navy or Coast Guard ship construction or repair. Additionally, the number and deadweight tonnage of private ocean-going merchant vessels built in U.S. shipyards has declined dramatically over the last 20 years. (See fig. 3.6.) U.S. shipyards have delivered only one privately owned ocean-going merchant vessels of 1,000 gross tons or larger in fiscal years 1988-93.

Figure 3.6: Merchant Ships Delivered by U.S. Shipyards, 1973-93



Source: MARAD.

We did not evaluate the effect of eliminating cargo preference laws and policy on the amount of maintenance and repair performed at U.S. shipyards. However, to the extent that U.S.-flag vessels reflag or are scrapped, less maintenance and repair work will be done at U.S. shipyards because foreign-flag vessels have less incentive to use U.S. shipyards.

Conclusions

The effect of cargo preference laws on the U.S. merchant marine industry is mixed. Cargo preference laws appear to have had little impact on maintaining the share of U.S. oceanborne cargo carried aboard U.S.-flag vessels, since most internationally shipped cargo is owned by private citizens, not subject to cargo preference laws, and thus shipped on less expensive foreign-flag vessels. Nevertheless, the U.S. fleet is dependent on preference cargo for a significant portion of the international cargo it carries. While we cannot estimate with precision the effects that eliminating cargo preference laws would have on the merchant marine industry, we believe the equivalent of up to two-thirds of the U.S.-flag vessels engaged in international trade, by tonnage, would leave the U.S. fleet. This would likely result in the elimination of about 6,000 U.S.

shipboard jobs but would have a minimal impact on the U.S. shipbuilding industry.

Agency Comments

We discussed the contents of this report with the Chief, Transportation Division of the Office of Procurement, AID; cognizant officials of the Office of the Under Secretary of Defense for Acquisition and Technology, DOD; the Director, Operations and Readiness Division, Strategic Petroleum Reserve, DOE; and the Deputy Administrator for Commodity Operations, USDA. These agency officials generally agreed with the facts, respective to their agencies, contained in the report and provided only minor clarifications where appropriate.

Also, we met with the Deputy Administrator for Inland Waterways and Great Lakes, MARAD, and other MARAD officials, who generally agreed with the facts respective to their agency but believed that DOD does not have the data necessary to accurately estimate its cargo preference costs. However, DOD's cargo preference cost estimates are the official figures that DOD reported to the Office of Management and Budget or that were published in the federal budget and are the best estimates available. (See ch. 2 for how the estimates were derived.) We clarified this and other points raised by these officials, where appropriate. As requested, we did not obtain written agency comments on a draft of this report.

Vessel Operators Who Carried Preference Cargo

Table I.1 lists the vessel operators who carried preference cargo during 1993 and the revenue they received for carrying that cargo. A separate column is included for the Department of Defense (DOD) charter vessels because, under the terms of their agreement with DOD, they are reimbursed for certain operating expenses (e.g., fuel and port expenses) and thus, payments for these expenses are not considered revenue. In most other cases where vessels are not chartered, the operator is paid a flat fee from which all operating expenses must be paid.

Table I.1: Vessel Operators Who Carried Preference Cargo, in 1993

| Operator | Revenue from preference cargo excluding DOD charter vessels^a | Revenue from preference cargo for DOD charter vessels^b |
|------------------------------------|--|--|
| Afram Line (USA), Co. LTD | \$7,427,215 | \$38,046,557 |
| Alaska Cargo Transport | | 43,687 |
| Alaska Hydro-Train | | 29,261 |
| Alaska Marine Lines | | 225,692 |
| Alaska Steamship | | 2,445 |
| Amcol Line | | 524,490 |
| American Auto Carriers | | 32,435,747 |
| American Gulf Shipping | | 15,348,042 |
| American Heavylift Shipping | | 7,789,797 |
| American Marine Corp. | | 19,508,956 |
| American President Lines LTD | | 88,506,093 |
| American Trading Production Corp. | 4,135,985 | 341 |
| American Transportation Lines | 50,236 | 36,790,228 |
| Bargebulk | | 1,413,747 |
| Bloomfield SS Co. | 3,191,600 | 315 |
| Blue Star Pace LTD | | 60,700 |
| Boyer Alaska Barge | | 5,492 |
| Bridge Shipping Co. | 653,627 | |
| Caminos Tugs | 558,000 | |
| Canal Barge | | 2,045,104 |
| Carolina Atlantic Trans. Sacs. | | 26,400 |
| Central Barge and Towing | | 2,331,510 |
| Central Gulf S.S. Corp. | 14,181,243 | |
| Coastal Carriers, Inc. | | 12,600,106 |
| Colonial Tankers Corp. | | 681 |
| Cooperative Working Agreement | | 335,279 |
| Coordinated Caribbean Trans., Inc. | 1,303,942 | 13,792,111 |

(continued)

Appendix I
Vessel Operators Who Carried Preference
Cargo

| Operator | Revenue from preference cargo excluding DOD charter vessels^a | Revenue from preference cargo for DOD charter vessels^b |
|---------------------------------|--|--|
| Coscol Marine Corp. | | 3,038,480 |
| Cove Shipping Co. | | 3,628,499 |
| Crest Tankers, Inc. | | 14,128,428 |
| Crowley | | 619,430 |
| Crowley American | | 19,771,713 |
| Crowley Caribbean | | 2,099,095 |
| Crowley Marine Service | | 366,844 |
| Crowley Maritime Corp. | 1,823,845 | 145,476 |
| Cuban Caribbean | | 4,265,316 |
| Dixie Fuels LTD | | 2,015,618 |
| Dock Express Contractors, Inc. | 4,743,692 | |
| EKLOE/EKLOF | | 3,819,477 |
| Eimskip USA Inc. | | 1,948,799 |
| Exxon Corp. | | 57,306 |
| Falcon Tankers, Inc. | | 549,300 |
| Farrell Lines, Inc. | | 20,287,054 |
| Foss Alaska Line | 426,025 | |
| Foster Towing | 717,693 | |
| Gulf & Atlantic Barge Co., Inc. | | 869,256 |
| Gulf Coast Transit Co. | | 18,408,011 |
| Hawaiian Independence Refinery | | 299,090 |
| Hawaiian Marine Lines, Inc. | | 29,909 |
| Hawaiian Tug and Barge Co., LTD | 65,250 | |
| ISI | | 2,308,500 |
| International Marine Carriers | | 177,341 |
| International Ship Management | | 390,837 |
| Island Maritime Agency | | 3,511 |
| Joseph V. Steamship Corp. | | 23,460 |
| Keystone Shipping Co. | | 25,075,680 |
| LQM Associates Inc. | 24,995 | |
| Liberty Shipping Group, LTD | | 91,696,362 |
| Lykes Bros. SS Co., Inc. | 187,108,481 | 7,282,833 |
| Maersk | 7,057,772 | 96,171 |
| Marine Transport Line | 43,524,603 | 16,259,696 |
| Maritime Overseas Corp. | | 22,056,604 |
| Martin Gas Corp. | | 380,008 |

(continued)

**Appendix I
Vessel Operators Who Carried Preference
Cargo**

| Operator | Revenue from preference cargo excluding DOD charter vessels^a | Revenue from preference cargo for DOD charter vessels^b |
|-------------------------------------|--|--|
| Matson Lines | | 104,688 |
| Matson Navigation Co. | | 18,743,921 |
| Moore-McCormack Marine Trans. | | 26,263,377 |
| New England Ind. | | 12,109 |
| Nicholas Haye and Co. | | 74,337 |
| North Seas Ferrys | | 584,827 |
| Northland Service | | 952 |
| OMI | | 66,136,235 |
| Ocean Carriers, Inc. | 660,000 | |
| Ocean Line of Bermuda | 352,397 | 400,947 |
| Ocean Ship Holding | | 694,600 |
| Ocean Ships | 43,025,813 | |
| Osprey Ship Management | 2,787,168 | |
| Otto Candies | | 1,553,172 |
| PGM | | 10,442,981 |
| Pacific Alaska Fuel Services, Inc. | 4,788,842 | |
| Pacific Alaska Lines | | 5,314 |
| Pacific-Gulf Marine | | 622,000 |
| Penn-Attransco Corp. | | 12,214,707 |
| Percy Marine, Inc. | 209,936 | |
| Portal Energy Corp. | 229,610 | |
| Puerto Rican Maritime Shipping | | 4,939 |
| Puerto Rico Maritime Shipping Auth. | | 3,503,424 |
| RTM Lines | | 8,115 |
| Rainbow Navigation, Inc. | | 4,552,606 |
| Red River Shipping | | 5,010,200 |
| Samskip HF | | 761,298 |
| Samson Tug & Barge | | 5,991,310 |
| Sanara Lines | | 47,138 |
| Sargent Marine, Inc. | | 2,925,000 |
| Sause Brothers Ocean Towing | | 43,662 |
| Sea Borne Lines, Inc. | 134,188 | |
| Sea-Land Service, Inc. | 2,694,075 | 197,631,048 |
| Seabarge Group | | 13,634,952 |
| Seabridge Pacific Inc. | | 3,030 |
| Sealift, Inc. | 8,688,522 | 20,550,375 |

(continued)

**Appendix I
Vessel Operators Who Carried Preference
Cargo**

| Operator | Revenue from preference cargo excluding DOD charter vessels^a | Revenue from preference cargo for DOD charter vessels^b |
|--|--|--|
| Sheridan Transport | | 934,400 |
| Showa Yusosen Co. | | 52,526 |
| Somalia Tugs (Cory Towage & Murri International Salvage, Inc.) | 4,819,398 | |
| South East Barge | | 98,520 |
| South Pacific Interline | | 12,942 |
| States Steamship | | 305,996 |
| Sunmar Shipping, Inc. | | 3,295,248 |
| Tek Marine | | 1,695 |
| Tidewater, Inc. | | 6,776 |
| Totem Ocean Trail. Express, Inc. | | 7,182,363 |
| Towing Services (Inter Hawaii Lifts- Hawaiian Tug and Barge Co., LTD; Dillingham Corp. of America; & Sause Bros. Ocean Towing Co.) | 1,704,732 | |
| Trailer Bridge Inc. | | 184,916 |
| Trailer Marine Transport Corp. | | 493,076 |
| Tri-Star | | 1,435,583 |
| Trinidad Corp. | | 13,381,750 |
| Tropic Sun Shipping Co., Inc. | | 33 |
| US Shipping Corp. | | 419,508 |
| Van Ommeren Shipping | | 4,409,582 |
| Waterman Steamship Corp. | | 73,928,738 |
| Wessex Shipping Co. | | 47,500 |
| Western Pioneer Co. | | 82 |
| Young Brothers Ltd. | | 227,969 |

^aData are for fiscal year 1993.

^bData are for calendar year 1993.

Source: Maritime Administration and DOD.

Comparison of Crew Size and Salary Range for U.S.-Flag and Foreign-Flag Vessels

Table II.1 contains information on the costs and size of crews for vessels of different nationalities. Daily crew costs are the total costs, both direct and indirect, to an operator employing a crew member. This includes some or all of the following: base wages, overtime, allowances (such as work clothing allowances), training, vacation and holiday pay, social benefits (such as contributions to health insurance or social security), pension benefits, and travel expenses (such as expenses paid by the operator to get the crew to and from the vessel).²⁶

²⁶The Maritime Administration's data on foreign wage costs do not always include all of these cost components.

Appendix II
Comparison of Crew Size and Salary Range
for U.S.-Flag and Foreign-Flag Vessels

Table II.1: Comparison of United States and Foreign Wage Costs for Various Types of Vessels

| Type of vessel | Nationality of vessel | Daily crew costs | Crew size |
|-----------------------------|------------------------------|-------------------------|------------------|
| Large, modern containership | United States | \$9,800 - 11,100 | 21 |
| | European | 2,200 - 3,100 | 16 - 18 |
| | Asian | 1,400 - 3,000 | 11 - 18 |
| | Flag of convenience | 1,400 - 2,100 | 18 - 23 |
| Older containership | United States | 13,200 - 13,300 | 35 |
| | European | 2,200 - 4,000 | 18 - 21 |
| | Asian | 1,200 - 2,000 | 17 - 26 |
| | Flag of convenience | 1,400 - 2,200 | 24 - 26 |
| General cargo | United States | 12,700 - 13,100 | 34 |
| | European | 2,500 - 4,000 | 21 - 26 |
| | Asian | 1,200 - 1,400 | 18 - 26 |
| | Flag of convenience | 1,200 - 2,100 | 25 - 26 |
| Dry bulk | United States | 6,400 - 6,500 | 21 |
| | Flag of convenience | 1,900 | 25 |
| Tanker | United States | 9,200 - 10,000 | 26 |
| | Flag of convenience | 1,900 | 26 |

Note: Wage rates are current as of January 1, 1993. "Flag of convenience" denotes registration of vessels in foreign countries that offer favorable tax structures and regulations. The leading flag of convenience countries are the Bahamas, Liberia, Panama, and Singapore.

Source: Maritime Administration.

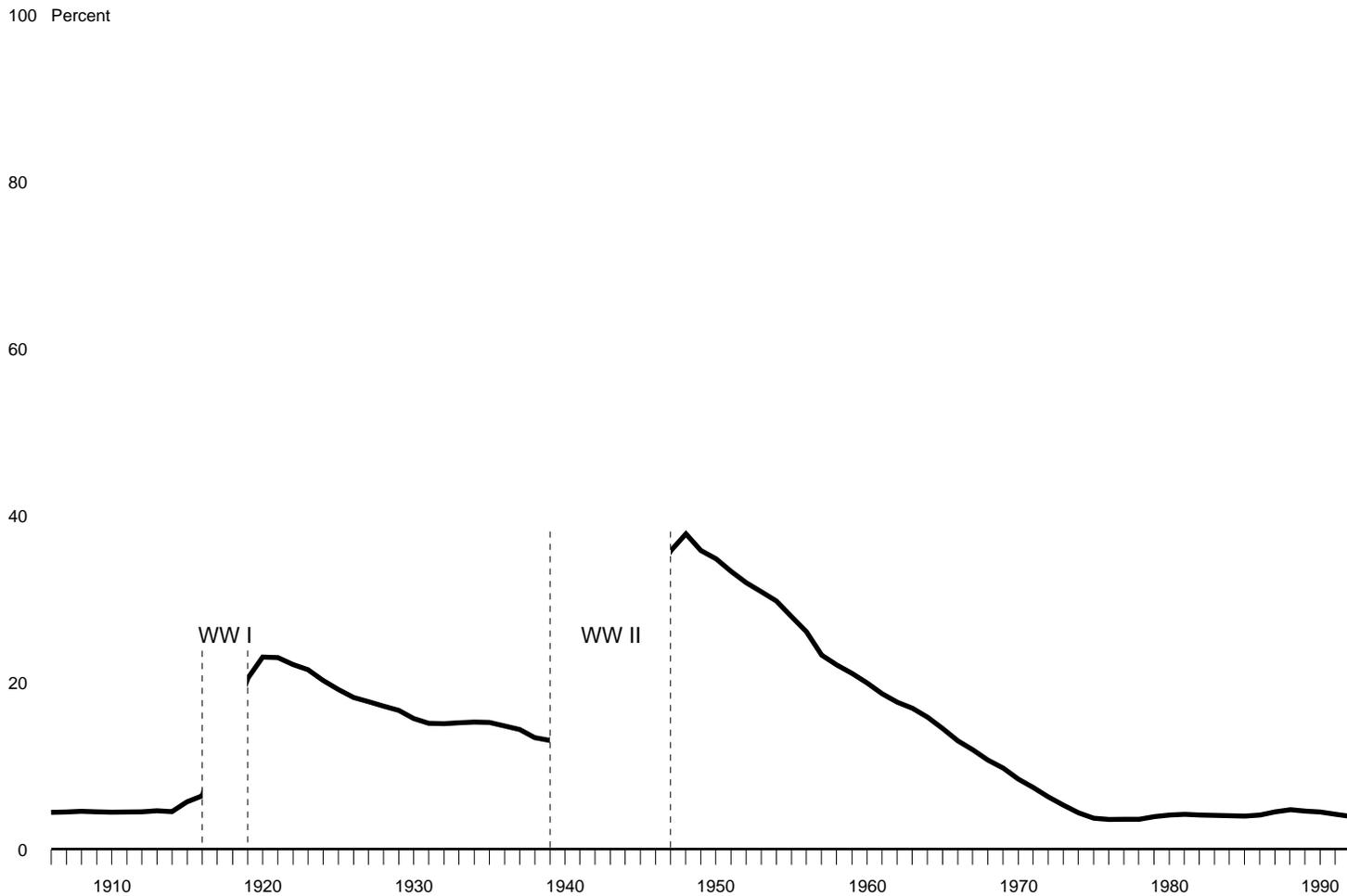
The Requirements and Purposes of Cargo Preference Laws

The Congress passed the Cargo Preference Act of 1904 (P.L. 198) in response to a shortage of U.S.-flag merchant vessels during the Spanish-American War. Because of that shortage, the United States was forced to purchase foreign vessels crewed by foreign nationals who, in some instances, refused to serve on U.S.-flag vessels. In addition, a foreign shipping company had just been awarded a contract by the Secretary of War to ship coal to the Philippine Islands—then the bulk of the U.S. government’s international cargo—and other countries reserved their government-owned and government-financed cargo for their vessels. To increase the number of U.S.-flag vessels and to counter heavily subsidized and less expensively built and operated foreign-flag vessels, the Congress decided to reserve military cargo for U.S.-flag vessels unless the freight rates charged are excessive or unreasonable.

Despite the Cargo Preference Act of 1904, the U.S. fleet did not increase significantly in size until World War I. Between 1916 and 1922, the U.S. fleet increased from 2.9 million gross tons to 13.6 million gross tons. (See fig. III.1b.) The buildup, however, was followed by a downturn that continued until World War II, even though the Congress tried to mitigate the downturn with another major piece of cargo preference legislation—the Merchant Marine Act of 1936 (P.L. 835).

Appendix III
The Requirements and Purposes of Cargo
Preference Laws

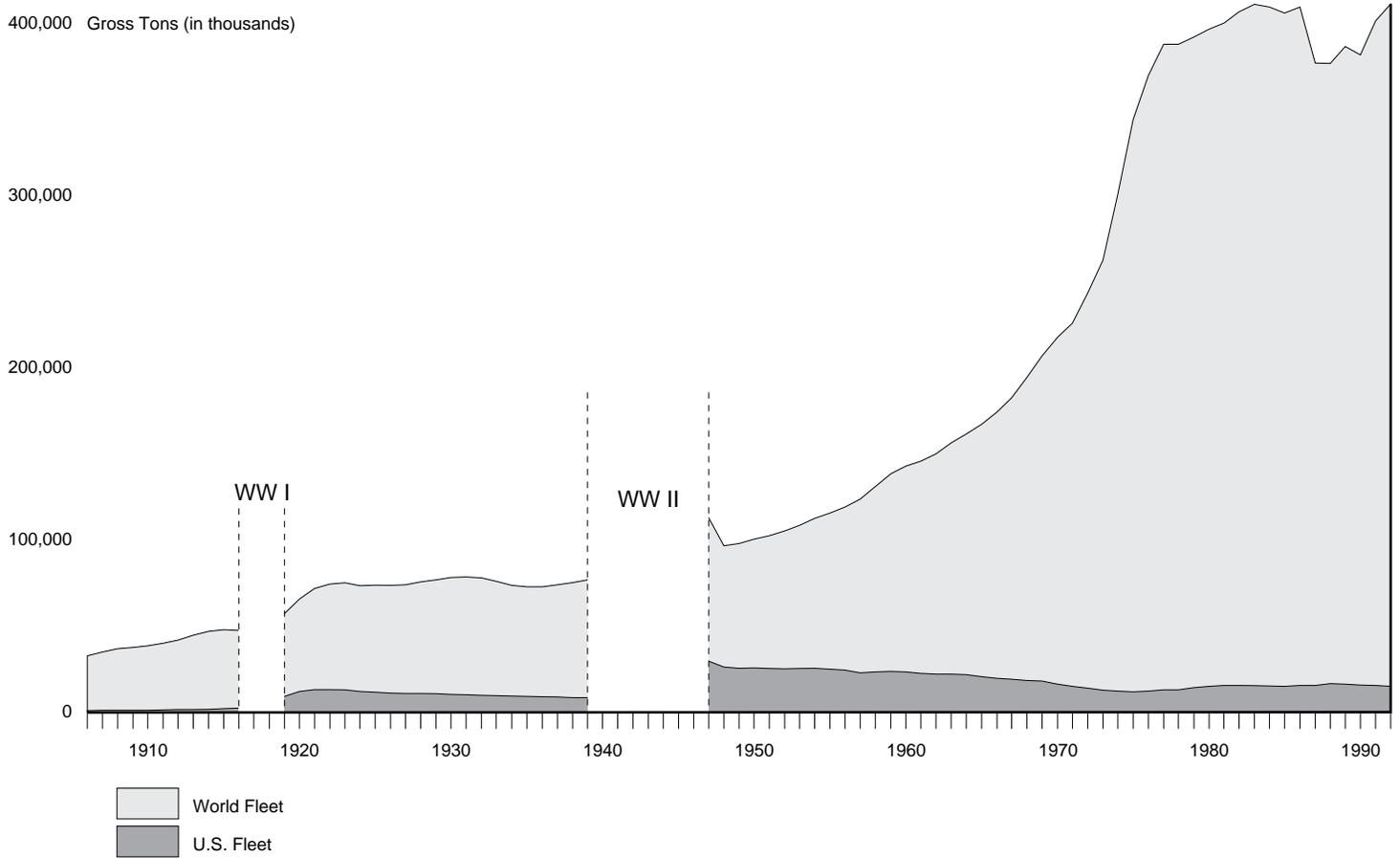
Figure III.1A: U.S. and World Fleet Sizes, 1906-92—U.S. Percentage of World Fleet by Tonnage



Note: WWI = World War I; WWII = World War II. See appendix IV for numerical data supporting graph.

Appendix III
The Requirements and Purposes of Cargo
Preference Laws

Figure III.1B: U.S. and World Fleet Sizes in Gross Tons, 1906-92



Note: WWI = World War I; WWII = World War II. See appendix IV for numerical data supporting graph.

The stated purpose of the Merchant Marine Act of 1936 is to ensure a U.S. merchant fleet sufficient to provide a naval auxiliary during times of war or national emergency and to participate substantially in the carriage of foreign and domestic commerce. It requires that a “substantial portion” of civilian agencies’ internationally shipped cargo be carried aboard U.S.-flag vessels. The act, however, did not define the term substantial portion, and those agencies wishing to avoid the provision were able to do so.

Meanwhile, the downturn in the merchant marine continued until World War II, when a second significant increase in the U.S. fleet occurred. Although the United States emerged from World War II with the largest fleet in the world—comprising 30.2 million gross tons and over 36 percent of the world fleet’s tonnage—by the time the Congress passed the Cargo Preference Act of 1954 (P.L. 664), the U.S. fleet was again facing a downturn, and its size had declined to about 31 percent of the world fleet’s size. (See figs. III.1a and III.1b.)

The Cargo Preference Act of 1954, which amends the Merchant Marine Act of 1936, was passed to guarantee to privately owned U.S.-flag vessels a substantial portion of international waterborne cargo, which the Congress had proclaimed in previous statutes was necessary for the maintenance of an adequate merchant fleet. The act requires that at least 50 percent of any government-owned and government-financed cargo be carried on privately owned U.S.-flag vessels.

Despite the passage of cargo preference laws, the relative size of the fleet continued to decline until the 1980s, when it leveled off to about 4 percent of the world fleet’s gross tonnage. In 1992, the U.S. fleet comprised 15.5 million gross tons and 3.9 percent of the world fleet’s tonnage. Congress’s continued belief that a strong merchant marine is needed resulted in the passage of the Food Security Act of 1985 (P.L. 99-198). In enacting this law, the Congress declared that “a strong and active United States maritime industry [is] vitally important to the economic well-being and national security objectives of our Nation.” The Food Security Act increased the percentage of food aid cargo that the U.S. Department of Agriculture (USDA) and the Agency for International Development (AID) ship on U.S.-flag vessels from 50 to 75 percent.

Number of Ships and Tonnage by Year in the U.S. and World Fleet

Table IV.1 provides information, by year, on the number of vessels in the U.S. and world merchant fleets, the total tonnage of the U.S. and world fleets, and the U.S. share of the world fleet's tonnage by year.

Table IV.1: Number of Ships and Tonnage in the U.S. and World Fleets, by Year

Gross tons in thousands

| Year ^a | Number of ships | | Tonnage | | U.S. percentage of world fleet (by tonnage) |
|-------------------|-----------------|-------------|------------|-------------|---|
| | U.S. fleet | World fleet | U.S. fleet | World fleet | |
| 1906 | b | b | 1,388 | 31,745 | 4.37 |
| 1907 | b | b | 1,503 | 33,970 | 4.42 |
| 1908 | b | b | 1,616 | 35,723 | 4.52 |
| 1909 | b | b | 1,619 | 36,473 | 4.44 |
| 1910 | b | b | 1,642 | 37,291 | 4.40 |
| 1911 | b | b | 1,715 | 38,782 | 4.42 |
| 1912 | b | b | 1,798 | 40,518 | 4.44 |
| 1913 | b | b | 1,972 | 43,079 | 4.58 |
| 1914 | b | b | 2,027 | 45,404 | 4.46 |
| 1915 | b | b | 2,580 | 45,729 | 5.64 |
| 1916 | b | b | 2,853 | 45,248 | 6.31 |
| 1917 | b | b | c | c | c |
| 1918 | b | b | c | c | c |
| 1919 | b | b | 9,773 | 47,897 | 20.40 |
| 1920 | b | b | 12,406 | 53,905 | 23.01 |
| 1921 | b | b | 13,511 | 58,846 | 22.96 |
| 1922 | b | b | 13,577 | 61,343 | 22.13 |
| 1923 | b | b | 13,426 | 62,335 | 21.54 |
| 1924 | b | b | 12,431 | 61,514 | 20.21 |
| 1925 | b | b | 11,932 | 62,380 | 19.13 |
| 1926 | b | b | 11,392 | 62,672 | 18.18 |
| 1927 | b | b | 11,171 | 63,267 | 17.66 |
| 1928 | b | b | 11,154 | 65,159 | 17.12 |
| 1929 | b | b | 11,036 | 66,407 | 16.62 |
| 1930 | b | b | 10,646 | 68,024 | 15.65 |
| 1931 | b | b | 10,356 | 68,723 | 15.07 |
| 1932 | b | b | 10,270 | 68,368 | 15.02 |
| 1933 | b | b | 10,088 | 66,628 | 15.14 |
| 1934 | b | b | 9,795 | 64,358 | 15.22 |
| 1935 | b | b | 9,665 | 63,727 | 15.17 |

(continued)

**Appendix IV
Number of Ships and Tonnage by Year in the
U.S. and World Fleet**

Gross tons in thousands

| Year ^a | Number of ships | | Tonnage | | U.S. percentage of world fleet (by tonnage) |
|-------------------|-----------------|-------------|------------|-------------|---|
| | U.S. fleet | World fleet | U.S. fleet | World fleet | |
| 1936 | b | b | 9,434 | 64,005 | 14.74 |
| 1937 | b | b | 9,347 | 65,271 | 14.32 |
| 1938 | b | b | 8,125 | 58,270 | 13.94 |
| 1939 | b | b | 8,910 | 68,509 | 13.01 |
| 1940 | b | b | c | c | c |
| 1941 | b | b | c | c | c |
| 1942 | b | b | c | c | c |
| 1943 | b | b | c | c | c |
| 1944 | b | b | c | c | c |
| 1945 | b | b | c | c | c |
| 1946 | b | b | c | c | c |
| 1947 | b | b | 30,166 | 83,514 | 36.12 |
| 1948 | 3,644 | 12,470 | 26,689 | 70,584 | 37.81 |
| 1949 | 3,514 | 12,765 | 25,977 | 72,532 | 35.81 |
| 1950 | 3,516 | 13,050 | 26,114 | 74,999 | 34.82 |
| 1951 | 3,477 | 13,466 | 25,769 | 77,424 | 33.28 |
| 1952 | 3,441 | 13,788 | 25,627 | 80,222 | 31.95 |
| 1953 | 3,440 | 14,172 | 25,749 | 83,375 | 30.88 |
| 1954 | 3,424 | 14,613 | 25,977 | 87,286 | 29.77 |
| 1955 | 3,324 | 14,952 | 25,358 | 90,955 | 27.88 |
| 1956 | 3,238 | 15,346 | 24,772 | 95,055 | 26.06 |
| 1957 | 3,032 | 15,916 | 23,468 | 101,017 | 23.23 |
| 1958 | 3,047 | 16,557 | 23,840 | 108,012 | 22.07 |
| 1959 | 3,047 | 17,106 | 24,220 | 115,015 | 21.06 |
| 1960 | 2,960 | 17,222 | 23,870 | 119,768 | 19.93 |
| 1961 | 2,810 | 17,338 | 23,018 | 123,576 | 18.63 |
| 1962 | 2,715 | 17,585 | 22,580 | 128,298 | 17.60 |
| 1963 | 2,691 | 17,917 | 22,692 | 134,434 | 16.88 |
| 1964 | 2,598 | 18,072 | 22,149 | 140,283 | 15.79 |
| 1965 | 2,449 | 18,096 | 21,203 | 146,698 | 14.45 |
| 1966 | 2,292 | 18,303 | 20,104 | 155,048 | 12.97 |
| 1967 | 2,209 | 18,386 | 19,495 | 164,066 | 11.88 |
| 1968 | 2,101 | 18,910 | 18,819 | 176,523 | 10.66 |
| 1969 | 2,013 | 19,415 | 18,373 | 189,480 | 9.70 |
| 1970 | 1,780 | 19,611 | 16,918 | 201,878 | 8.38 |

(continued)

**Appendix IV
Number of Ships and Tonnage by Year in the
U.S. and World Fleet**

Gross tons in thousands

| Year ^a | Number of ships | | Tonnage | | U.S. percentage of world fleet (by tonnage) |
|-------------------|-----------------|-------------|------------|-------------|---|
| | U.S. fleet | World fleet | U.S. fleet | World fleet | |
| 1971 | 1,579 | 19,980 | 15,529 | 211,401 | 7.35 |
| 1972 | 1,372 | 20,544 | 14,348 | 230,302 | 6.23 |
| 1973 | 1,150 | 21,009 | 13,111 | 250,543 | 5.23 |
| 1974 | 965 | 21,917 | 12,504 | 289,404 | 4.32 |
| 1975 | 891 | 22,591 | 12,301 | 333,042 | 3.69 |
| 1976 | 843 | 23,134 | 12,655 | 358,203 | 3.53 |
| 1977 | 846 | 23,902 | 13,388 | 375,828 | 3.56 |
| 1978 | 571 | 24,906 | 13,388 | 375,828 | 3.56 |
| 1979 | 879 | 24,427 | 14,681 | 378,909 | 3.87 |
| 1981 | 864 | 24,867 | 16,020 | 385,711 | 4.15 |
| 1982 | 853 | 25,110 | 15,976 | 392,379 | 4.07 |
| 1983 | 832 | 25,482 | 15,932 | 396,645 | 4.02 |
| 1984 | 788 | 25,579 | 15,713 | 395,325 | 3.97 |
| 1985 | 740 | 25,473 | 15,444 | 391,979 | 3.94 |
| 1986 | 737 | 25,424 | 16,034 | 395,056 | 4.06 |
| 1987 | 725 | 23,618 | 16,108 | 362,179 | 4.45 |
| 1988 | 709 | 23,307 | 16,983 | 361,132 | 4.70 |
| 1989 | 675 | 23,468 | 16,807 | 371,357 | 4.53 |
| 1990 | 655 | 22,983 | 16,265 | 366,764 | 4.43 |
| 1991 | 656 | 23,596 | 16,103 | 386,736 | 4.16 |
| 1992 | 642 | 23,943 | 15,466 | 397,225 | 3.89 |

^aThese statistics represent "snapshots" taken at different times during the reporting year.

^bData on numbers of ship are not available for 1906-47.

^cData on tonnage are not available for 1917-18 and 1940-46.

Source: Department of Commerce and the Maritime Administration.

Recipients of Operating-Differential Subsidies

Operating-differential subsidies (ODS) are paid to U.S. ship operators to place them at a parity with their foreign competitors. The subsidy is based on the difference between the fair and reasonable cost of insurance, maintenance, repairs not compensated by insurance, and wages of officers and crews and the estimated costs of the same items if the vessels were operated under foreign registry. Not all recipients' subsidies are based on all of the above items. Table V.1 lists the ODS recipients, the amounts of subsidy each company received, and the number of ships receiving a subsidy that each ODS recipient operated, for fiscal years 1991-93.

Table V.1: Operating-Differential Subsidies by Ship Operator, Fiscal Years 1991-93

| Vessel operators | Fiscal year | | | Number of ships in FY 1993 |
|-----------------------------------|-------------------|-------------------|----------------|----------------------------|
| | 1991 ^a | 1992 ^a | 1993 | |
| American President Lines | \$66.1 | \$77.0 | \$59.7 | 20 |
| Farrell Lines Incorporated | 14.9 | 15.9 | 16.1 | 4 |
| First American Bulk | 4.1 | 5.2 | 5.1 | 2 |
| Lykes Bros. Steamship | 75.0 | 59.3 | 78.0 | 23 |
| Waterman Steamship Corporation | 18.5 | 19.3 | 21.3 | 4 |
| American Maritime Transport, Inc. | 3.9 | 0.6 | 0.8 | 1 |
| Aquarius Marine Company | 4.5 | 4.5 | 3.6 | 2 |
| Asco-falcon II Shipping Company | 0.3 | 0 | 0 | 1 |
| Atlas Marine Company | 4.6 | 5.0 | 3.9 | 1 |
| Brookville Shipping Inc. | 0 | 1.3 | 0.6 | 1 |
| Chestnut Shipping Company | 3.2 | 4.0 | 3.1 | 3 |
| Equity Carriers I, Inc. | 0.4 | 0 | 0 | 1 |
| Margate Shipping Company | 9.6 | 9.9 | 9.0 | 3 |
| Mormac Marine Transport, Inc. | 7.7 | 9.2 | 5.6 | 3 |
| Ocean Chemical Carriers, Inc. | 2.1 | 1.5 | 3.5 | 1 |
| Ocean Chemical Transport, Inc. | 2.4 | 2.0 | 2.9 | 1 |
| Vulcan Carriers, Ltd. | 0.4 | 1.0 | 2.4 | 4 |
| Total | \$217.6 | \$215.6 | \$215.5 | 75 |

^aDollar figures are not in constant FY 1993 dollars.

Source: Maritime Administration.

The U.S. Merchant Marine During Military Conflicts

According to the Maritime Administration (MARAD), except for the Persian Gulf War, specific data on the historical use of U.S.-flag and foreign-flag shipping in support of U.S. or allied forces in wartime circumstances are limited. Information on the specific numbers of ships and amount of cargo carried is not available in most cases. Data on foreign-flag shipping are even more limited. However, a general description of the role that U.S.-flag and foreign-flag vessels played during the five principal conflicts in which the United States has been involved in since 1904—World War I, World War II, the Korean War, the Vietnam conflict, and the Persian Gulf War—is available:

- During World War I, the United States used foreign-flag ships almost entirely. Only a small number of new U.S.-flag merchant vessels were built and commissioned before World War I ended.
- During World War II, the U.S.-controlled vessels carried approximately 75 percent of the cargo sent from the United States; the other 25 percent was carried by ships of other allied nations. The total amount of cargo shipped between December 7, 1941, and the capitulation of Japan was approximately 268.3 million long tons,²⁷ of which about 203.5 million tons consisted of dry cargo and 64.8 million tons consisted of petroleum products and other bulk liquids (excluding bulk liquid cargo carried by War Shipping Administration tankers for the Army and Navy). The U.S.-flag merchant fleet carried the great majority of military personnel and civilians moving overseas and returning to the United States during and after the war.
- Practically all of the cargo sent from the United States to the Far East to support the Korean War was carried on U.S.-flag ships. The total amount of cargo shipped from the United States to the Far East was approximately 31.5 million measurement tons.²⁸ About 95 percent of this was shipped by sea (80 percent on privately owned U.S.-flag vessels and 15 percent on U.S. government-owned vessels).
- During the Vietnam conflict, most of the dry cargo shipped to the war area was carried on U.S.-flag vessels. Approximately 85.7 million measurement tons of dry cargo was shipped to the war area between fiscal years 1965 and 1972 in U.S.-flag vessels (65 percent on privately owned U.S.-flag ships and 35 percent on U.S. government-owned ships). This is estimated to be about 97 percent of all dry cargo shipped to Vietnam during those years. Approximately 16 million measurement tons of bulk petroleum was shipped to the war area during those same years, chiefly in foreign-flag ships because of the unavailability of suitable U.S.-flag ships.

²⁷A long ton equals 2,240 pounds.

²⁸A measurement ton is a volume measurement equal to a 40-ft. container box.

Appendix VI
The U.S. Merchant Marine During Military
Conflicts

-
- During the Persian Gulf War, according to data collected by DOD, as of March 10, 1991, approximately 2.9 million long tons of dry cargo had been transported by sea. Of this amount, 77.4 percent was carried on U.S.-flag vessels and 22.6 percent was carried on foreign-flag vessels chartered by DOD. The most recent breakdown of participation by foreign-flag ships shows that DOD chartered 186 foreign-flag ships from 35 allied nations for 208 total voyages. The major flags chartered were Cyprus, Greece, Norway, and Panama.

MARAD's "Fair and Reasonable" Determinations

The Cargo Preference Act of 1954 requires civilian federal government agencies to ship on U.S.-flag vessels only to the extent that such vessels are available at "fair and reasonable rates." The fair and reasonable provision helps ensure that U.S.-flag vessels do not overcharge federal agencies required to ship on U.S.-flag vessels. MARAD will find a rate to be fair and reasonable if it is less than or equal to MARAD's estimate of the cost of the voyage in question plus a reasonable profit. MARAD calculates fair and reasonable rates for ships chartered to carry shiploads of bulk and packaged agricultural commodities. Rates are also determined for bulk agricultural commodities carried by liner-service vessels. For other cargoes carried on liner-service vessels, conference rates are paid, which MARAD maintains are inherently fair and reasonable.

MARAD makes a separate cost estimate for each voyage that it is asked to investigate. It bases its estimate on operating cost information supplied annually by the ship owner and certified by a corporate officer and on information specific to the voyage in question. Additionally, MARAD factors the return trip into the cost of the voyage. MARAD assumes that the vessel will return empty of cargo. If the vessel does carry cargo on the return trip, it must report this to MARAD, and MARAD will make an adjustment to the fair and reasonable rate. MARAD also allows for a reasonable profit on a 5-year running average derived from Fortune's top 50 U.S. transportation companies. Currently, this profit factor is about 13 percent.

MARAD requests shipowners to supply the following cost information each year:

- Normal operating speed.
- Daily fuel consumption at normal operating speed.
- Daily fuel consumption while in port.
- Type of fuel used.
- Total capitalized vessel costs, for example, cost of vessel acquisition.
- Vessel operating cost information for the prior calendar year.
- Number of vessel operating days for the vessels for the prior calendar year (this information is used to determine daily operating cost).

Additionally, MARAD collects the following information for each voyage for which a fair and reasonable rate is calculated:

- Port expenses for ports the vessel is scheduled to visit—for example, fees for pilots and custom charges.

Appendix VII
MARAD's "Fair and Reasonable"
Determinations

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- Cargo expenses—for example, fees for stevedores and off-loading equipment.
 - Canal expenses—for example, fees for tolls.
 - The current price of fuel.

Objectives, Scope, and Methodology

On April 29, 1993, Senators Hank Brown, John C. Danforth, Charles E. Grassley, Don Nickles, and Malcolm Wallop asked us to provide information on the cargo preference programs and related information on the U.S. merchant marine industry. On the basis of subsequent discussions with their staff, we agreed to provide information on the cost to the federal government of cargo preference laws and their effects on the U.S. merchant marine industry. We also agreed to provide information on the following:

- The number of non-U.S.-flag vessels owned by U.S. citizens or corporations. (See ch. 1.)
- The total oceanborne transportation costs to federal agencies for preference cargo. (See ch. 2.)
- Operators of U.S.-flag vessels who carried preference cargo and the revenue they received for doing so. (See app. I.)
- Crew size and salary ranges for U.S.- and foreign-flag vessels. (See app. II.)
- The original intent of cargo preference laws. (See app. III.)
- The number of vessels in the U.S. and world fleet, the total tonnage of the U.S. and world merchant fleet, and the U.S. share of the world merchant fleet's tonnage by year. (See app. IV.)
- The recipients of operating-differential subsidies and the amount of funds they received for fiscal years 1991 through 1993. (See app. V.)
- The use of foreign-flag vessels during wartime circumstances since 1904. (See app. VI.)
- How MARAD determines if the rates that U.S.-flag carriers charge the federal government to ship cargo are "fair and reasonable." (See app. VII.)

This report does not make conclusions regarding the desirability of cargo preference laws or recommendations for changes that could be made to those laws.

To determine the cost to the federal government of cargo preference laws, we first determined which federal agencies ship the most international cargo by tonnage. Since 1988, four agencies—AID, DOD, the Department of Energy (DOE), and USDA—shipped more than 99 percent of international government cargo. MARAD collects this information so that it can determine if the agencies are in compliance with federal cargo preference laws. We did not independently verify the accuracy of the agencies' information.

Next, we obtained data on the additional costs the agencies incurred because of cargo preference laws requiring them to ship all or a portion of their cargo on U.S.-flag vessels. AID, DOD, and USDA submit this information

to the Office of Management and Budget (OMB) for inclusion in the federal budget. DOE was not requested to develop an estimate because of the relatively small amount of cargo it had shipped. In chapter 2, we explained how these estimates were derived and supported. Also, MARAD is required to pay a portion of the additional transportation costs for food aid programs administered by AID and USDA, and this is included in the federal budget.

AID and USDA have developed procedures for estimating the additional transportation costs they incur because of cargo preference laws. Although we did not independently verify them, we believe the estimates are reasonably sound because their shipments are split between U.S.- and foreign-flag ships, making possible a comparison of rates for U.S.- and foreign-flag ships obtained under similar market conditions.

To estimate the additional transportation cost that DOE incurred because of cargo preference laws, DOE provided us with data on the amount of oil it shipped for the Strategic Petroleum Reserve program. For purposes of complying with cargo preference laws, DOE measures the amount of oil it ships in long ton/miles (the number of miles a long ton of oil has been shipped) to more accurately reflect the broad geographical distances involved in transporting oil. Because DOE ships oil on both U.S.- and foreign-flag vessels, we were able to calculate the cost per long ton/mile that U.S.- and foreign-flag vessels charged to DOE. We used this information to estimate DOE's additional transportation costs. We did not independently verify the information DOE provided us.

Unlike AID, DOE, and USDA, foreign-flag carriers do not consistently bid for DOD cargo, making it impossible to base an estimate of DOD's additional transportation costs on a comparison with historical data on the rates that foreign-flag carriers would have charged DOD. Therefore, in order to develop a cost estimate for OMB, DOD officials had to estimate the cost to ship its cargo on foreign-flag vessels. DOD officials told us that they base their estimate, to the extent possible, on market data, including the operating costs and shipping rates of foreign-flag carriers. However, they told us that because of the rate volatility in certain market sectors, they are forced to rely significantly on their judgment and knowledge of the market for their final analysis. As a result, the process is not well documented, and we were unable to independently verify their estimate.

DOD maintains that its policy is to ship a substantial portion of its cargo on U.S.-flag vessels and that it would continue this policy in the absence of

cargo preference laws. However, because DOD ships about 50 percent of the cargo subject to preference laws, we included estimates of its additional transportation costs in our report in order to give a fuller account of the cost to the federal government of reserving cargo for U.S.-flag vessels.

We measured the effect of no longer reserving cargo on U.S.-flag vessels by first estimating the number of U.S.-flag vessels that would likely stop carrying international cargo (either by being scrapped, reflagged or replacing vessels in the domestic trade) if cargo preference laws and policy were eliminated. The deadweight tonnage of these vessels is the estimate of the tonnage that would leave the U.S. fleet if cargo preference laws and policy were eliminated. Again, because DOD ships such a large portion of the cargo subject to the preference laws, we included the Department in our analysis to provide a fuller picture of how cargo preference laws affect the merchant marine industry. If, however, DOD's policy were to remain intact, the actual impact on the maritime industry of eliminating cargo preference laws would be less than we estimate.

We based our analysis of the number of vessels likely to leave the fleet on (1) the relative ability of classes of vessels to compete in the international and domestic markets without preference cargo; (2) specific attributes of vessels, such as whether they had a specialized use, if and when any legal restrictions on reflagging or entering the domestic trade would be lifted, and whether the vessels carried substantial amounts of preference cargo or operated mainly in the domestic trade; and (3) other pertinent considerations, such as international political considerations that would likely cause vessels to remain U.S.-flagged. We conducted our analysis in consultation with MARAD officials, who have access to proprietary information, and confirmed our estimate about which vessels would leave the U.S. fleet by comparing our results with information obtained from 18 vessel operators that controlled 112 of the 165 vessels engaged in international trade.

We made the assumption that ODS alone, in the absence of cargo preference laws, is generally not sufficient to induce a carrier to remain U.S.-flagged. We made this assumption about ODS payments because of the following:

- ODS payments do not fully offset the higher costs to operate U.S.-flag vessels. For example, some crew costs are not covered by ODS subsidies.

- Recipients are faced with certain restrictions. For example, ODS recipients are generally restricted from owning foreign-flag vessels or vessels that operate in domestic trade; in the case of liner services, they are restricted in the geographic areas in which they may operate.
- Program increases ODS recipients' costs. For example, recipients are burdened with additional administrative costs.

Additionally, MARAD officials told us that many owners with ODS contracts prefer not to receive any ODS compensation for maintenance and repair because receiving such compensation requires that all of the ship's maintenance and repair be performed in U.S. shipyards. The officials said that shipowners find it less costly to have a vessel's maintenance and repair performed at foreign shipyards, even though U.S.-flag ships are subject to a 50-percent tax on the cost of maintenance and repair performed at foreign shipyards.

Next, to estimate the effect of cargo preference laws on merchant mariners, MARAD provided us with information on the size of the crews on the ships we believe would leave the international trade. To estimate the effects on the U.S. shipbuilding industry, we obtained information about new ship deliveries from MARAD and analyzed laws and regulations intended to support the shipbuilding industry. We confirmed these results with industry representatives.

Finally, our analysis of the original intent of cargo preference laws is based on the purposes and requirements found in relevant statutes and other sources. Information on the use of U.S.- and foreign-flag vessels during wartime was provided to us by MARAD and was not independently verified.

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