

MARAD '88



U.S. Department
of Transportation

**Maritime
Administration**

MARAD '88

The Annual Report of the
Maritime Administration
for Fiscal Year 1988

U.S. DEPARTMENT OF TRANSPORTATION
Maritime Administration

APRIL 1989

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THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

April 4, 1989

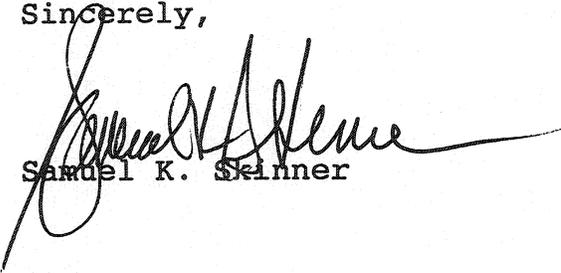
The Honorable Dan Quayle
President of the Senate
Washington, DC 20510

The Honorable James C. Wright, Jr.
Speaker of the House of
Representatives
Washington, DC 20515

Dear Sirs:

I have the pleasure of forwarding to you the annual report of the Maritime Administration for fiscal year 1988 as required by the Merchant Marine Act, 1936, as amended.

Sincerely,


Samuel K. Skinner

Enclosure



The bow and stern thrusters of the MV AMERICAN REPUBLIC, American Steamship Co.'s newest vessel, control the maneuverability of the ship as it churns the water of the winding Cuyahoga.

FOREWORD

The Annual Report of the Maritime Administration (MARAD) for the fiscal year which ended on September 30, 1988, is submitted to the Congress in accordance with Section 208 of the Merchant Marine Act, 1936, as amended.

It incorporates reports required by the Congress on the following topics: acquisition of obsolete vessels in exchange for vessel trade-in credit; war-risk insurance activities; scrapping or removal of obsolete vessels owned by the United States; and U.S.-flag carriage of Government-sponsored cargoes. There were no reportable activities during FY 1988 involving the allocation of construction- and operating-differential subsidy to port ranges and the settlement of claims arising under the Suits in Admiralty Act.

During the period, the Secretary of Transportation and the Maritime Administrator continued to press for the reform of the liner operating-differential subsidy program to enhance the ability of U.S. carriers to compete with their foreign competitors. Reform legislation was not enacted, however. Progress was made toward removal of foreign trade practices unfairly impeding U.S. carriers' operations in the Far East.

U.S. commercial shipyards continued to be awarded all Navy new construction contracts under the largest combatant ship construction program in the U.S. Navy's peacetime history. One commercial vessel, a 21,000-deadweight-ton containership, was delivered during the year.

On September 30, 1988 the U.S.-flag privately owned, deep-draft merchant fleet (including the Great Lakes fleet) totaled 509 vessels with an aggregate carrying capacity of 23.5 million dwt.

The report provides details on these topics and many other MARAD activities as well as on the state of the maritime industry.

JOHN A. GAUGHAN
Maritime Administrator

Chapter 1

Shipbuilding and Ship Conversion

Shipyard Activity

During fiscal year 1988, U.S. commercial shipyards continued to be awarded all Navy new construction contracts. Under the largest combatant ship construction program in the U.S. Navy's peacetime history, the Navy committed \$59.5 billion to ship construction in commercial yards during the five-year period which ended September 30, 1988.

As of September 30, 1988, there were 69 naval vessels (excluding noncombatant T-Ships) of 1,000 light displacement tons (LDT) and over, under construction or on order in 10 privately owned U.S. shipyards. In addition, under the Navy's T-Ship program, 10 privately owned shipyards had 17 new T-Ships on order or under construction, as well as 3 merchant ships being converted.

Seven T-Ships were completed during FY 1988. The prefix "T" designates civilian-manned ships, both Government-owned and privately owned, operated by or under charter to the Military Sealift Command.

Vessel types in the multi-billion dollar T-Ship procurement program include maritime repositioning ships, fast sealift ships, fleet oilers, auxiliary crane ships, and hospital ships. Vessels in this program are mission-oriented, designed to perform a

specific primary service such as underway refueling or offloading other ships which do not possess self-unloading capability.

No private contracts were awarded to U.S. shipyards for merchant vessels over 1,000 gross tons in fiscal year 1988.

Auxiliary Crane Ship Conversions

Under a Memorandum of Understanding between the Maritime Administration (MARAD) and the U.S. Navy, MARAD is responsible for administration of one aspect of the Navy's T-Ship Program--the Auxiliary Crane Ship (T-ACS) project--which involves the reactivation and conversion of 12 existing Ready Reserve Force (RRF) ships to auxiliary crane ships. Each is being equipped with either two or three sets of pedestal-mounted twin cranes with an outreach capable of unloading containerships lacking cargo-handling gear. MARAD is also responsible for maintaining the ships in a state of readiness for deployment in forward areas where cargo-handling facilities are limited, such as in underdeveloped ports or ports damaged by hostilities.

In FY 1988, MARAD completed conversion of the fifth and sixth crane ships, the SS FLICKERTAIL STATE (T-ACS 5) and the SS CORNHUSKER STATE (T-ACS 6), formerly the CV STAG HOUND and CV LIGHTNING, respectively. At the end of the reporting period, the seventh and eighth T-ACS ships, SS DIAMOND STATE (T-ACS 7) and

SS EQUALITY STATE (T-ACS 8), formerly the containerships, PRESIDENT TRUMAN and AMERICAN BUILDER, were being converted at Tampa Shipyards, Inc., of Tampa, FL. Although the redelivery dates were not firm the ships are expected to be delivered in FY 1989.

During the year, MARAD also invited bids for conversion of the containerships AMERICAN ALTAIR and AMERICAN DRACO as the ninth and tenth auxiliary crane ships. A contract was expected to be awarded to a U.S. shipyard in the second quarter of FY 1989.

Ship Deliveries

One commercial vessel of 1,000 gross tons and over was delivered in FY 1988. The 21,000-deadweight-ton containership SEALAND KODIAK, built by Bay Shipbuilding Corp. of Sturgeon Bay, WI, for Sea-Land Service, Inc., was delivered in November 1987.

No commercial vessels of 1,000 gross tons and over were on order at the end of the reporting period.

Schoolship Conversion

In FY 1988, MARAD completed all pre-award requirements for the early FY 1989 contract award to Bay Shipbuilding Corp. of Sturgeon Bay, WI, for conversion of the MORMACTIDE, a Government-owned breakbulk cargo vessel, to a public nautical schoolship. The ship was originally built by

Newport News Shipbuilding and Dry Dock Co. in 1962. After conversion, it will accommodate about 800 officers, crew, and cadets, and will include expanded mess rooms, galley, class rooms, a navigational laboratory, maintenance and repair laboratories, and shops. An additional diesel generator and switchboard will be

installed as well as increased air conditioning and heating equipment, evaporators, sewage treatment plants, and laundries to support the expanded complement. Work on the vessel was scheduled for completion by November 1989.

Title XI Guarantees

The Federal Ship Financing Guarantee Program was established by Title XI of the Merchant Marine Act, 1936, as amended. As originally enacted, Title XI authorized the Federal



The 21,000-deadweight-ton containership SEA-LAND KODIAK, built by Bay Shipbuilding Corp. for Sea-Land Service, Inc., was delivered in November 1987.

Government to insure private-sector loans or mortgages made to finance or refinance the construction or reconstruction of American-flag vessels.

Title XI was amended in 1972 to provide direct Government guarantees of the underlying debt obligations, with the Government holding a mortgage on the equipment financed.

The U.S. Government insures or guarantees full payment to the lender of the unpaid principal and interest of the mortgage obligation in the event of default by the vessel owners.

During FY 1988, MARAD approved in principle one Title XI guarantee in the amount of \$26.5 million for the refinancing of the tanker OMI COLUMBIA, owned by OMI Challenger Transport, Inc. Based on a previous Title XI commitment, MARAD issued a security agreement covering one vessel during the period.

As of September 30, 1988, Title XI guarantees in force amounted to approximately \$3.9 billion. Active pending applications on that date represented approximately \$551.4 million in requests for additional guarantees. (See Table 3.)

During FY 1988, Congressional authority for the Title XI program had a cap of \$12 billion, with \$9.5 billion allocated to MARAD, \$1.65 billion reserved for ocean thermal energy conversion vessels and facilities, and \$850 million authorized to guarantee the financing of fishing vessels by the National Oceanic and Atmospheric Administration.

The insurance premiums and guarantees fees paid by users go into the Federal Ship Financing Fund, a revolving fund which may be used for payment of any defaults. During this reporting period, MARAD paid \$183.3 million as a result of eight defaults.

During FY 1988, the Federal Ship Financing Fund operated at a deficit of \$195 million. The cash balance of the fund on September 30, 1988, was \$169.3 million. The Federal Ship Financing Fund was not self-supporting during FY 1988. This necessitated new borrowings from the U.S. Department of the Treasury totaling \$95 million in FY 1988 and \$420 million as of September 30, 1987.

Capital Construction Fund

The Capital Construction Fund (CCF) Program was established under the Merchant Marine Act of 1970. It assists operators in accumulating capital to build, acquire, and reconstruct vessels through the deferral of Federal income taxes on certain deposits, as defined in Section 607 of the Merchant Marine Act, 1936, as amended.

The CCF program enables operators to build vessels for the U.S. foreign trade, Great Lakes, noncontiguous domestic trade (e.g., between the West Coast and Hawaii), and the fisheries of the United States. It aids in the construction, reconstruction, or acquisition of a wide variety of vessels, including containerships, tankers, bulk carriers, tugs, barges, supply vessels, ferries and passenger vessels.

During calendar year 1987, \$253 million was deposited into these accounts. Since the program was initiated in 1971, fundholders have deposited \$4.9 billion in CCF accounts and withdrawn \$3.8 billion for the modernization and expansion of the U.S. merchant marine. As of September 30, 1988, a total of 88 companies (shown in Table 4) were parties to CCF agreements.

Construction Reserve Fund

Like the Capital Construction Fund, the Construction Reserve Fund (CRF) encourages upgrading of the American-flag fleet. This program allows eligible parties to defer taxation of capital gains on the sale or other disposition of a vessel if net proceeds are placed in a CRF and reinvested in a new vessel within 3 years.

The CRF is used predominately by owners of vessels operated in coastwise trades, the inland waterways, and other trades not eligible for the CCF program. Its benefits are not as broad as those of the CCF.

The number of companies with CRF balances remained constant at eight during the 1988 fiscal year. (See Table 5.) The total monies on deposit decreased from \$3.6 million to \$3.1 million dollars.

Shipyard Improvements

During FY 1988, the American shipbuilding and repair industry invested over \$145 million in upgrading and expanding facilities. Plans were underway to spend at

least \$65 million in FY 1989, mainly to improve efficiency and competitiveness for future participation in the Navy's

construction, repair, and overhaul projects.

Since the last major amendment to the Merchant

Marine Act in 1970, the U.S. shipbuilding and ship repair industry has invested some \$4.2 billion in facility improvements.

Table 1: MARAD MANAGED AUXILIARY CRANE SHIP CONVERSION ACTIVITY DURING FY 1988

Project	Shipyard	No. Ships	Redelivery Date
Conversions Underway T-ACS 7 and 8	Tampa Shipyards	2	5-89 (Est.)
Conversions Completed T-ACS 5 and 6	NORSHIPCO	2	4-88
Total Under Contract		2	

Table 2: WORLDWIDE SHIP DELIVERIES - CALENDAR YEAR 1987 (TONNAGE IN THOUSANDS)

Country of Construction	No.	Total All Types Deadweight Tons	No.	Combination Pass. & Cargo Deadweight Tons	No.	Freighters Deadweight Tons	No.	Bulk Deadweight Tons	No.	Tankers Deadweight Tons
Total	436	15,580.6	8	67.7	203	2,546.5	123	7,718.3	102	5,248.1
United States	4	271.9	-	-	3	62.7	-	-	1	209.2
Argentina	1	22.8	-	-	1	22.8	-	-	-	-
Belgium	2	14.0	-	-	2	14.0	-	-	-	-
Brazil	4	485.2	-	-	1	7.1	3	478.1	-	-
Bulgaria	7	115.0	-	-	2	17.2	3	87.1	2	10.7
China	16	453.9	1	2.1	7	70.9	5	145.4	3	235.5
Denmark	17	350.6	-	-	11	57.2	-	-	6	293.4
Finland	2	134.7	-	-	1	19.2	-	-	1	115.5
France	4	103.4	1	7.3	-	-	1	40.8	2	55.3
Germany (East)	14	199.7	-	-	14	199.7	-	-	-	51.5
Germany (West)	29	284.1	2	8.3	22	224.3	-	-	5	51.5
Greece	1	5.4	-	-	1	5.4	-	-	-	-
India	3	30.9	-	-	2	4.6	1	26.3	-	-
Italy	11	282.0	2	36.8	2	8.7	5	212.7	2	-
Japan	183	7,400.9	1	6.9	74	1,172.9	60	3,498.4	48	2,722.7
Korea (South)	57	3,020.3	-	-	15	179.9	27	2,008.2	15	832.2
Malaysia	1	4.9	-	-	-	-	1	4.9	-	-
Mexico	1	45.0	-	-	-	-	-	-	1	45.0
Netherlands	7	35.4	-	-	6	33.6	-	-	1	1.8
Norway	2	5.2	-	-	2	5.2	-	-	-	-
Philippines	1	4.9	-	-	-	-	-	-	-	-
Poland	10	303.4	-	-	6	55.7	3	4.9	1	83.0
Romania	7	332.0	-	-	4	33.2	1	64.0	2	234.8
Spain	17	469.0	-	-	8	46.8	5	399.3	4	22.9
Sweden	2	29.0	1	6.3	-	-	-	-	1	22.7
Taiwan	5	432.6	-	-	3	120.6	2	312.0	-	-
Turkey	6	24.4	-	-	6	24.4	-	-	-	-
U.A.R. (Egypt)	2	15.5	-	-	2	15.5	-	-	-	-
U.S.S.R.	1	19.8	-	-	1	19.8	-	-	-	-
United Kingdom	4	229.5	-	-	2	44.5	2	185.0	-	-
Yugoslavia	15	455.2	-	-	5	80.6	3	86.5	7	288.1

Table 3: FEDERAL SHIP FINANCING GUARANTEE (TITLE XI) PROGRAM SUMMARY
Principal Liability (Statutory Limit \$9.5 Billion) on September 30, 1988

Vessel Types	Contracts in Force		Pending Applicants	
	Vessels Covered	Principal Amount	Vessels Covered	Principal Amount
Deepdraft Vessels:				
Tankers	63	\$1,357,654,008	-	\$ - - - - -
Cargo	45	539,656,000	-	- - - - -
LNGs	8	595,756,000	-	- - - - -
Bulk/OBOs	22	312,278,717	-	- - - - -
Total	138	2,805,344,725	-	- - - - -
Other Types:				
Drill Rigs/Ships	24	187,893,551	-	- - - - -
Drill Service	42	53,794,173	-	- - - - -
Tugs	198	195,669,289	-	- - - - -
Barges	2,251	459,985,861	-	- - - - -
Miscellaneous	20	151,693,937	4	\$551,431,000
Total	2,535	1,049,036,811	-	- - - - -
Total Vessels	2,673	3,854,381,536	-	- - - - -
Shipboard Lighters	998	18,573,659	-	- - - - -
Total	3,671	3,872,955,195	4	\$551,431,000

Table 4: CAPITAL CONSTRUCTION FUND HOLDERS--September 30, 1988

Alaska Riverways, Inc.	Exxon Shipping Corp.	Matson Navigation Co., Inc.
Amak Towing Co., Inc.	Falcon Alpha Shipping, Inc.	Middle Rock, Inc.
AMC Boats, Inc.	Falcon Capital, Inc.	Miller Boat Lines, Inc.
American President Lines, Ltd.	Farrell Lines, Inc.	Moody Offshore, Inc.
American Shipping, Inc.	Foss Maritime Co.	Neuman Boat Lines, Inc.
Andover Co., L.P.	Fred Devine Diving & Salvage, Inc.	Nicor, Inc.
Aquarius Marine Co.	G&B Marine Transportation, Inc.	North American Boat Rentals, Inc.
Ashland Oil, Inc.	GATX Corp.	Oceanic Research Services, Inc.
Atlantic Richfield Co.	General Electric Credit and Leasing Corp.	O.L. Schmidt Barge Lines, Inc.
Atlas Marine Co.	General Electric Credit Corp. of Delaware	Ocean Shipholdings, Inc.
Bankers Trust New York Corp.	General Electric Credit Corp. of Georgia	Oglebay Norton Co.
Bethlehem Steel Corp.	Gilco Supply Boats, Inc.	OMI Corp.
Binkley Co., The	Great Lakes Towing Co.	Overseas Shipholding Group, Inc.
Blue Lines, Inc.	Hannah Brothers	Pacific Hawaiian Lines, Inc.
Brice, Inc.	Hannah Marine Corp.	Ritchie Transportation Co.
Campbell Towing Co.	Hawaiian Tug & Barge Corp.	Rouge Steel Co.
Canonie Constructors Co.	Hvide Shipping, Inc.	Seabulk Tankers, Ltd.
Cement Transit Co.	Inland Steel Co.	Sea-Land Corp.
Central Gulf Lines, Inc.	Inter-Cities Navigation Corp.	Sheplers, Inc.
Citimarlease (Burmah I), Inc.	Interstate Towing Co.	Smith Lighterage Co., Inc.
Citimarlease (Burmah LNG Carriers, Inc.	John E. Graham & Sons	Schnitzer Steel Products Co.
Citimarlease (Burmah Liquegas), Inc.	Kinsman Lines, Inc.	Steel Style Marine
Citimarlease (Fulton), Inc.	L&L Marine Services, Inc.	Tidewater, Inc.
Citimarlease (Whitney), Inc.	Leppaluoto Offshore Marine, Inc.	Totem Resources Corp.
Crowley Maritime Corp.	Luedtke Engineering Co.	Union Oil Co. of California
CSI Hydrostatic Testers, Inc.	Lykes Bros. Steamship Co.	Waterman Steamship Corp.
Dillingham Tug & Barge Corp.	Madeline Island Ferry Lines, Inc.	Western Pioneer, Inc.
Edison Chouest Offshore, Inc.	Marine Investment Co. of Delaware	Windjammer Cruises, Inc.
Edward E. Gillen Co.		Young Brothers, Ltd.
Eserman Offshore Service, Inc.		Zidell, Inc.

Table 5: CONSTRUCTION RESERVE FUND HOLDERS--September 30, 1988

Arrow Tankers, Inc.	Ingram Industries, Inc.	Mobil Oil Corp.
Cargill Marine and Terminal, Inc.	Joan Turecamo, Inc.	Serodino, Inc.
Central Gulf Steamship Corp.	Kurz Marine, Inc.	

Chapter 2

Ship Operation

U.S. Fleet Profile

The U.S.-flag, privately owned, deep-draft merchant fleet (including the Great Lakes fleet listed in Table 14) totaled 509

vessels with an aggregate carrying capacity of about 23.5 million deadweight tons (dwt.) on September 30, 1988.

The oceangoing segment of the privately owned fleet included 428 vessels of 21.4 million dwt., of which 396 ships of 19.1 million dwt. were active. The latter comprised 35 breakbulk cargo ships, 136 intermodal vessels (containerships, barge-carrying vessels, and roll-on/roll-off

vanships known as RO/ROs), 2 combination passenger-cargo ships, 201 tankers (including liquefied natural gas carriers), and 22 bulk carriers. (See Table 6.) All 32 of the inactive vessels were laid up.



The Ready Reserve Force LASH vessel, CAPE FAREWELL, shown here, is moored at the Port of Mobile, AL loaded with a full complement of barges.

Employment of the U.S.-flag oceangoing fleet (including Government-owned ships) at the end of the fiscal year is shown in Table 7.

The privately owned American-flag merchant fleet ranked 8th in the world on a deadweight-ton basis and 11th on the basis of number of ships on January 1, 1988. (See Table 8.)

Commercial cargoes carried by ships of all flags in the U.S. oceanborne foreign trade totaled 718.6 million tons in calendar year 1987. U.S.-flag foreign trade tonnage increased from 28.5 million to 28.7 million tons, and the U.S.-flag share of total tonnage decreased from 4.2 percent in 1986 to 4 percent in 1987.

Commercial cargoes transported in U.S. oceanborne foreign trade from 1978 through calendar year 1987 are shown in Table 9. The table shows the total trade by tonnage and value, and the portion carried by U.S.-flag vessels.

Operating-Differential Subsidy

U.S.-flag vessels which operate in essential foreign trade are eligible for operating-differential subsidy (ODS) which is administered by the Maritime Administration (MARAD). ODS is designed to offset certain lower ship operating costs of foreign flag competitors. Net subsidy outlays during FY 1988 amounted to \$230.2 million.

There was no subsidy paid for voyages in the Great Lakes trade in fiscal year 1988. ODS accruals and expenditures from

January 1, 1937, through September 30, 1988, are summarized in Table 10. Accruals and outlays by shipping lines for the same period are shown in Table 11.

For 1988, ODS reform legislation was submitted to Congress to allow subsidized operators greater operating flexibility but at a lower subsidy cost. Unsubsidized operators would also have been eligible for subsidy. Congress did not enact any changes to the program in the reporting period.

Section 614 Activities

Section 614 of the Merchant Marine Act, 1936, as amended, permits a company receiving ODS funds to elect to suspend its ODS agreement for all or a portion of its vessels, subject to certain conditions. Suspension of the ODS agreement includes suspending all attendant statutory and contractual restrictions in the ODS agreement, except those pertaining to operation in the domestic trade.

No vessels operated under suspended ODS agreements in FY 1988.

Subsidy Rates

The Subsidy Index System established by the Merchant Marine Act of 1970 provides for payment of seafaring wage subsidies in per diem amounts. The rate of change in the index is computed annually by the Bureau of Labor Statistics and is used as the measure of change in seafaring employment costs.

ODS rates also are calculated for maintenance and repairs, hull and machinery insurance, and protection and indemnity insurance for both premiums and deductibles.

In 1986, MARAD modified its procedures for determining ODS to enable the finalization and payment of subsidy amounts on a more current basis. MARAD has completed all 1988 subsidy rates applicable to liner vessel operations and has substantially completed the 1988 subsidy rates applicable to bulk vessel operations.

Passenger/Cruise Service

At the end of this reporting period, U.S.-flag oceangoing passenger service was provided by the cruise liners INDEPENDENCE and CONSTITUTION, each with a 750-passenger capacity. Built in 1950 and 1951 and refurbished in 1988, the vessels were operated by American Hawaii Cruises, Inc. in the Hawaiian inter-island trade.

On October 1, 1988, Aloha Pacific Cruises Limited Partnership began offering seven-day cruises in the Hawaiian Islands. The partnership operates the MONTEREY which was rebuilt in 1988 as a 600-passenger, deluxe cruise ship.

Four operators provided local coastwise service with vessels carrying fewer than 200 passengers. American Canadian Line served the New England Coast, Great Lakes, and Saguenay River of Canada; American Cruise Lines served the Atlantic Coast as did the Clipper Cruise Line; and

Exploration Cruise Lines operated on the U.S. and Canadian Pacific Coast, including Alaska.

On the inland waterways, two traditionally styled steamboats, the 267-passenger DELTA QUEEN and 635-passenger MISSISSIPPI QUEEN operated by Delta Queen Steamboat Co. provided a variety of cruises on the Mississippi and Ohio Rivers. Additionally, American Cruise Lines offered cruises on the Lower Mississippi River.

As of September 30, 1988, MARAD had applications pending under its Title XI program from U.S. Maritime Associates for two 1,200-passenger cruise ships, and from United States Flag ships for two 1,440-passenger cruise ships.

Section 804 Activities

Section 804 of the Merchant Marine Act, 1936, as amended, prohibits any contractor receiving ODS or any holding company, subsidiary, affiliate, or associate of such contractor, directly or indirectly, to own, charter, act as agent or broker for, or operate any foreign-flag vessel which competes with an essential U.S.-flag service, without prior approval of the Secretary of Transportation. The prohibition also applies to any officers, directors, agents, or executives of such an organization.

In April 1988, MARAD extended for a second two-year period a section 804 waiver originally granted to American President Lines, Ltd. (APL) in May 1986. The waiver allows APL to charter and operate three foreign-flag vessels for feeder service between its Line A or Line B ports through May 1990.

The vessels are permitted to serve Singapore, Manila, and Thailand.

On June 3, 1988, MARAD granted a 5-year section 804 waiver to permit APL to own or charter and operate 10 foreign-flag vessels on six feeder services in southern and southwestern Asia.

MARAD also granted an 804 waiver to Chestnut Shipping Co. and Margate Shipping Co. on August 5, 1988, for a period of six months to permit an affiliate, Keystone Shipping Co., to charter foreign-flag liquid bulk vessels in the 50,000- to 150,000- deadweight-ton range.

Foreign Transfers

In fiscal year 1988, MARAD approved the transfer of 88 ships of 1,000 gross tons and over to foreign firms. Forty-four vessels were sold for scrapping abroad.

MARAD also granted permission for the foreign transfer of 158 vessels of less than 1,000 gross tons during the fiscal year. These included 150 commercial and 8 pleasure craft.

During the year MARAD approved three contracts of affreightment to non-citizens. Sixty-five U.S.-owned ships of over 1,000 gross tons and 59 under 1,000 gross tons were approved for charter to aliens. Twenty-one charter approvals were either amended or modified.

Pursuant to Public Law 89-346 and 46 CFR 221.21-221.30, the Agency removed two banks and approved the retention of 54 banks on the Roster of Approved Trustees. One new bank was

approved as trustee, and one request for approval as trustee was denied.

During the reporting period there were 31 violations reported involving privately owned ships, and 20 violations were mitigated or settled.

MARAD's approval of the transfer of vessels of 3,000 gross tons and over to foreign ownership or registry, or both (whether for operation or scrapping) are subject to the terms and conditions of the Agency's current Foreign Transfer Policy (46 CFR Part 221 Appendix). As of September 30, 1988, there were 78 vessels subject to these terms and conditions, which accompany titles to the ships and remain in effect for the period of their remaining economic lives.

User charges for processing applications for foreign transfers and similar actions totaled \$94,055 in the reporting period. This total includes \$6,995 in fees filed pursuant to MARAD contracts reflecting prior domestic and foreign sales.

Activities under Section 9 of the Shipping Act, 1916, are summarized in Table 13.

Table 6: U.S. OCEANGOING MERCHANT MARINE--SEPTEMBER 30, 1988 ¹

	Privately Owned		MARAD Owned		Total	
	Number Ships	Deadweight Tons (000)	Number Ships	Deadweight Tons (000)	Number Ships	Deadweight Tons (000)
Active Fleet:						
Passenger/Pass. Cargo	3	21	4	32	7	53
General Cargo	35	494	1	11	36	505
Intermodal	136	3,946	-	-	136	3,946
Bulk Carriers (Inc. TB)	22	975	-	-	22	975
Tankers (Inc. TKB & LNG)	201	13,686	1	17	202	13,703
Total Active Fleet	397	19,122	6	60	403	19,182
Inactive Fleet:						
Passenger/Pass. Cargo	2	25	13	98	15	123
General Cargo	5	67	167	1,978	172	2,045
Intermodal	3	91	37	855	40	946
Bulk Carriers (Incl. TB)	4	294	-	-	4	294
Tankers (Incl. TKB & LNG)	17	1,818	32	1,269	49	3,087
Total Inactive Fleet	31	2,295	249	4,200	280	6,495
Total Active and Inactive:						
Passenger/Pass. Cargo	5	46	17	130	22	176
General Cargo	40	561	168	1,989	208	2,550
Intermodal	139	4,037	37	855	176	4,892
Bulk Carriers (Incl. TB)	26	1,269	-	-	26	1,269
Tankers (Incl. TKB & LNG)	218	15,504	33	1,286	251	16,790
Total American Flag	428	21,417	255 ²	4,260	683	25,677

¹ Vessels of 1,000 gross tons and over, excluding privately owned tugs, barges, etc.

² Includes 246 National Defense Reserve Fleet vessels, 91 of which belong to the Ready Reserve Fleet.

NOTE: Tonnage figures may not add due to rounding.

Table 7: EMPLOYMENT OF U.S.-FLAG OCEANGOING MERCHANT FLEET--SEPTEMBER 30, 1988 ¹

Status and Area of Employment	Vessel Type (tonnage in thousands)											
	Total		Passenger/ Pass. & Cargo		General Cargo		Intermodal		Bulk Carriers ²		Tankers ³	
	Deadweight No.	Deadweight Tons	Deadweight No.	Deadweight Tons	Deadweight No.	Deadweight Tons	Deadweight No.	Deadweight Tons	Deadweight No.	Deadweight Tons	Deadweight No.	Deadweight Tons
Grand Total	683	25,677	22	176	208	2,550	176	4,892	26	1,269	251	16,790
Active Vessels	403	19,182	7	53	36	505	136	3,946	22	975	202	13,703
Privately Owned	397	19,122	3	21	35	494	136	3,946	22	975	201	13,686
U.S. Foreign Trade	145	5,192	-	-	29	420	82	2,664	11	641	23	1,467
Foreign-to-Foreign	25	2,164	-	-	-	-	6	136	-	-	19	2,028
Domestic Trade	177	10,339	3	21	2	20	28	562	9	272	135	9,464
Coastal	87	3,422	-	-	-	-	1	27	6	193	80	3,202
Noncontiguous	90	6,917	3	21	2	20	27	535	3	79	55	6,262
M.S.C. Charter	50	1,427	-	-	4	54	20	584	2	62	24	727
Government Owned	6	60	4	32	1	11	-	-	-	-	1	17
B.B. Charter & Other Custody	6	60	4	32	1	11	-	-	-	-	1	17
Inactive Vessels	280	6,495	15	123	172	2,045	40	946	4	294	49	3,087
Privately Owned	31	2,295	2	25	5	67	3	91	4	294	17	1,818
Temporarily Inactive	-	-	-	-	-	-	-	-	-	-	-	-
Laid-up	23	2,055	2	25	-	-	2	61	4	294	15	1,675
Laid-up (MARAD Custody)	8	240	-	-	5	67	1	30	-	-	2	143
Government Owned (MARAD												
Custody)	249	4,200	13	98	167	1,978	37	855	-	-	32	1,269
National Defense Reserve Fleet	246	3,978	13	98	167	1,978	37	855	-	-	29	1,047
Ready Reserve Force (RRF)	91	1,564	1	9	51	668	30	691	-	-	9	196
Other Reserve	143	2,249	6	59	112	1,262	5	77	-	-	20	851
Special Programs ⁴	5	119	1	9	2	23	2	87	-	-	-	-
Non-Retention ⁵	7	46	5	21	2	25	-	-	-	-	-	-
In Processing for RRF	-	-	-	-	-	-	-	-	-	-	-	-
Other Government Owned	3	222	-	-	-	-	-	-	-	-	3	222

¹ Excludes vessels operating exclusively on the Great Lakes, inland waterways, and those owned by the United States Army and Navy and special types such as cable ships, tugs, etc.

² Includes Tug Barges.

³ Includes Tanker Barges and LNG vessels.

⁴ Vessels unavailable for activation due to special status.

⁵ Vessels not actively maintained.

Table 8: MAJOR MERCHANT FLEETS OF THE WORLD -- JANUARY 1, 1988

Country	No. of Ships ¹	Rank by No. of Ships	Deadweight Tons	Rank by Deadweight Tonnage
Liberia	1,465	3	93,537,000	1
Panama	3,208	1	68,884,000	2
Japan	1,265	4	44,819,000	3
Greece	1,030	7	39,387,000	4
Cyprus	1,168	6	30,318,000	5
U.S.S.R.	2,439	2	24,479,000	6
British Colonies	514	10	22,245,000	7
United States (Privately Owned)	444	11	21,200,000	8
China	1,211	5	17,992,000	9
Nassau Bahamas	337	17	15,203,000	10
Philippines	530	8	13,749,000	11
Singapore	432	12	11,634,000	12
Italy	525	9	11,268,000	13
Korea (Republic Of)	423	13	10,548,000	14
Brazil	325	20	9,763,000	15
All Others ²	7,991		153,531,000	
Total	23,307		588,557,000	

¹ Oceangoing merchant ships of 1,000 gross tons and over.

² Includes 265 United States Government-Owned ships of 4,545,000 dwt.

Table 9: U.S. OCEANBORNE FOREIGN TRADE/COMMERCIAL CARGO CARRIED ¹

Calendar Year	Tonnage (Millions)									
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total Tons	775.6	823.1	772.2	760.0	675.5	630.4	676.8	640.9	674.8	718.7
U.S.-Flag Tons	32.1	35.0	28.2	34.2	31.1	36.7	29.4	27.3	28.5	28.8
U.S. Percent of Total	4.1	4.2	3.7	4.5	4.6	5.8	4.3	4.3	4.2	4.0
Liner Total Tons	56.5	57.0	59.3	60.0	54.5	56.8	63.5	66.7	71.8	79.4
Liner U.S.-Flag Tons	16.0	15.7	16.2	16.5	14.3	14.0	13.8	14.0	14.3	11.9
Liner U.S. Percent	28.3	27.5	27.3	27.6	26.2	24.6	21.7	21.0	19.9	14.9
Non-Liner Total Tons	308.8	342.7	356.7	365.6	335.8	317.7	346.3	327.5	309.0	327.1
Non-Liner U.S. Flag Tons	4.5	3.6	4.1	4.5	3.3	4.8	5.1	5.1	4.9	6.3
Non-Liner U.S. Percent	1.5	1.0	1.2	1.2	1.0	1.5	1.5	1.5	1.6	1.9
Tanker Total Tons	410.3	423.4	356.3	334.4	285.6	256.0	266.9	246.7	294.0	312.2
Tanker U.S.-Flag Tons	11.6	15.7	7.9	13.2	13.2	17.9	10.5	8.2	9.3	10.6
Tanker U.S. Percent	2.8	3.7	2.2	3.9	4.7	7.0	3.9	3.3	3.2	3.4
	Value (\$ Billions)									
Total Value	195.8	242.1	294.3	315.4	281.2	267.4	302.7	311.0	320.5	359.4
U.S.-Flag Value	30.7	35.7	42.3	47.0	43.5	43.0	44.6	46.4	49.0	44.8
U.S. Percent of Total	15.7	14.7	14.4	14.9	15.5	16.1	14.7	14.9	15.3	12.5
Liner Total Value	99.9	117.6	136.9	148.0	140.6	139.6	164.0	181.2	199.9	221.9
Liner U.S.-Flag Value	28.6	32.5	39.2	41.7	39.1	37.9	41.2	43.4	46.5	41.7
Liner U.S. Percent	28.6	27.6	28.7	28.1	27.8	27.2	25.1	24.0	23.3	18.8
Non-Liner Total Value	52.5	62.0	74.1	81.0	72.0	69.8	78.6	77.2	83.2	92.1
Non-Liner U.S.-Flag Value	1.0	1.1	1.3	1.9	1.2	1.2	1.1	1.4	1.3	1.6
Non-Liner U.S. Percent	1.8	1.7	1.8	2.3	1.7	1.7	1.5	1.8	1.6	1.8
Tanker Total Value	43.4	62.6	83.6	86.4	68.5	58.0	60.1	52.6	37.4	45.4
Tanker U.S.-Flag Value	1.1	2.1	1.8	3.4	3.2	4.0	2.2	1.6	1.2	1.5
Tanker U.S. Percent	2.7	63.4	2.1	3.9	4.7	6.8	3.7	3.1	3.2	3.2

¹ Table includes Government-sponsored cargo; excludes U.S./Canada trans-lakes cargoes and certain Department of Defense cargoes.

* Preliminary data.

Table 10: ODS ACCRUALS AND OUTLAYS--JANUARY 1, 1937, TO SEPTEMBER 30, 1988

Calendar Year of Operation	Accruals			Outlays		Net Accrual Liability
	Subsidies	Recapture	Subsidy Accrual	Paid in FY 1988	Total Amount of Net Accrued Paid	
1937-1955	\$682,457,954	\$157,632,946	\$524,825,008	\$-0-	\$524,825,008	\$-0-
1956-1960	751,430,098	63,755,409	687,674,689	-0-	687,674,689	-0-
1961	170,884,261	2,042,748	168,841,513	-0-	168,841,513	-0-
1962	179,396,797	4,929,404	174,467,393	-0-	174,467,393	-0-
1963	189,119,876	(1,415,917)	190,535,793	-0-	190,535,793	-0-
1964	220,334,818	674,506	219,660,312	-0-	219,660,312	-0-
1965	183,913,236	1,014,005	182,899,231	-0-	182,899,231	-0-
1966	202,734,069	3,229,471	199,504,598	-0-	199,504,598	-0-
1967	220,579,702	5,162,831	215,416,871	-0-	215,416,871	-0-
1968	222,862,970	3,673,790	219,189,180	-0-	219,189,180	-0-
1969	230,256,091	2,217,144	228,038,947	-0-	228,038,947	-0-
1970	232,541,169	(1,908,643)	234,449,812	-0-	234,449,812	-0-
1971	202,440,101	(2,821,259)	205,261,360	-0-	205,261,360	-0-
1972	190,732,158	-0-	190,732,158	-0-	190,732,158	-0-
1973	219,475,963	-0-	219,475,963	-0-	219,475,963	-0-
1974	219,297,428	-0-	219,297,428	-0-	219,297,428	-0-
1975	260,676,152	-0-	260,676,152	-0-	260,676,152	-0-
1976	275,267,465	-0-	275,267,465	-0-	275,267,465	-0-
1977	294,779,691	-0-	294,779,691	-0-	294,779,691	-0-
1978	285,075,424	-0-	285,075,424	-0-	285,075,424	-0-
1979	279,347,897	-0-	279,347,897	-0-	279,347,897	-0-
1980	386,309,467	-0-	386,309,467	-0-	386,309,467	-0-
1981	352,060,560	-0-	352,060,560	-0-	352,060,560	-0-
1982	366,654,502	-0-	366,654,502	-0-	366,654,502	-0-
1983	278,716,168	-0-	278,716,168	392,324	277,735,168	981,000
1984	341,871,848	-0-	341,871,848	539,288	341,871,848	-0-
1985	364,968,973	-0-	364,968,973	1,025,950	366,417,148	(1,448,175)
1986	318,016,595	-0-	318,016,595	690,557	317,932,595	91,000
1987	180,004,612	-0-	180,004,612	30,039,117	180,092,962	(88,350)
1988	222,918,123	-0-	222,918,123	197,501,164	197,501,164	25,416,959
Total Regular ODS	\$8,525,131,168	\$238,186,435	\$8,286,944,733	\$230,188,400	\$8,261,898,299	\$24,952,434
Soviet Grain Program ¹	\$147,132,626	-0-	\$147,132,626	-0-	\$147,132,626	-0-
Total ODS	\$8,672,263,794	\$238,186,435	\$8,434,077,359	\$230,188,400	\$8,409,030,925	\$24,952,434

¹ No longer operative.

Table 11: OPERATING-DIFFERENTIAL SUBSIDY ACCRUALS AND OUTLAYS BY LINES--JANUARY 1, 1937, TO SEPTEMBER 30, 1988

LINES	Accruals			ODS Paid	Net Accrued Liability
	ODS	Recapture	Net Accrual		
Aeron Marine Shipping	\$26,079,663	\$0	\$26,079,663	\$26,079,663	\$0
American Banner Lines ¹	2,626,512	0	2,626,512	2,626,512	0
American Diamond Lines ¹	185,802	28,492	157,310	157,310	0
American Export Lines ²	693,821,868	10,700,587	683,121,281	683,121,281	0
American Mail Lines ³	158,340,739	7,424,902	150,915,837	150,915,837	0
American Maritime Transport	1,535,133	0	1,535,133	1,520,052	15,081
American President Lines ³	1,234,585,423	17,676,493	1,216,908,930	1,216,712,796	196,134
American Shipping	21,063,213	0	21,063,213	20,476,559	586,654
American Steamship ¹	76,462	0	76,462	76,462	0
Aquarius Marine Co.	28,765,326	0	28,765,326	28,367,339	397,987
Aries Marine Shipping ¹	25,291,415	0	25,291,415	25,291,415	0
Atlantic & Caribbean S/N ¹	63,209	45,496	17,713	17,713	0
Atlas Marine Co.	30,928,129	0	30,928,129	30,198,911	729,218
Baltimore Steamship ¹	416,269	0	416,269	416,269	0
Bloomfield Steamship ¹	15,588,085	2,613,688	12,974,397	12,974,397	0
Chestnut Shipping Co.	52,454,594	0	52,454,594	51,684,388	770,206
Delta Steamship Lines ¹	575,053,817	8,185,313	566,868,504	566,868,504	0
Ecological Shipping Co. ⁹	4,968,943	0	4,968,943	4,968,943	0
Equity	750,572	0	750,572	750,572	0
Farrell Lines	616,041,457	1,855,375	614,186,082	612,842,375	1,343,707
Prudential Lines ⁴	641,012,300	24,223,564	616,788,736	616,788,736	0
Gulf & South American Steamship ⁵	34,471,780	5,226,214	29,245,566	29,245,566	0
Lykes Bros. Steamship	1,626,594,539	52,050,598	1,574,543,941	1,562,751,029	11,792,912
Margate Shipping	87,412,439	0	87,412,439	84,834,629	2,577,810
Moore McCormack Marine	75,774,542	0	75,774,542	73,849,867	1,924,675
Moore McCormack Lines ⁸	734,212,876	17,762,445	716,450,431	716,450,431	0
N.Y. & Cuba Mail Steamship ⁹	8,090,108	1,207,331	6,882,777	6,882,777	0
Oceanic Steamship ¹	113,947,681	1,171,756	112,775,925	112,775,925	0
Ocean Carriers	36,140,900	0	36,140,900	36,133,900	7,000
Pacific Argentina Brazil Line ¹	7,963,936	270,701	7,693,235	7,693,235	0
Pacific Far East Line ⁶	283,693,959	23,479,204	260,214,755	260,214,755	0
Pacific Shipping Inc. ⁹	18,840,400	0	18,840,400	18,840,400	0
Prudential Steamship ¹	26,352,954	1,680,796	24,672,158	24,672,158	0
Seas Shipping ¹	25,819,800	2,429,102	23,390,698	23,390,698	0
States Steamship ¹	231,997,100	5,110,997	226,886,103	226,886,103	0
United States Lines ⁷	750,518,013	54,958,689	695,559,324	695,559,324	0
Waterman Steamship	285,962,200	0	285,962,200	282,730,046	3,232,154
Worth Oil Transport ⁹	17,428,314	0	17,428,314	17,428,314	0
South Atlantic Steamship ¹	96,374	84,692	11,682	11,682	0
Seabulk Transmarine I & II, Inc.	30,164,322	0	30,164,322	28,785,426	1,378,896
Total Regular ODS	\$8,525,131,168	\$238,186,435	\$8,286,944,733	\$8,261,992,299	\$24,952,434
Soviet Grain Programs ⁹	\$147,132,626		\$147,132,626	\$147,132,626	\$0
Total ODS	\$8,672,263,794	\$238,186,435	\$8,434,077,359	\$8,409,124,925	\$24,952,434

¹ No longer subsidized or combined with other subsidized lines.

² AEL was acquired by Farrell Lines, March 29, 1978.

³ APL merged its operations with AML's October 10, 1973.

⁴ Changed from Prudential-Grace Lines, Inc., August 1, 1974.

⁵ Purchased by Lykes Bros. Steamship Co., Inc.

⁶ Went into receivership August 2, 1978.

⁷ Ceased to be subsidized line in November 1970 but returned as a subsidized carrier in January 1981. Ceased to be subsidized line in April 1987.

⁸ Purchased by United States Lines October 1983.

⁹ No longer operative.

Table 12: ODS CONTRACTS IN FORCE--SEPTEMBER 30, 1988

A. Liner Trades

Operator and Contract No.	Contract Duration	Number Subsidized Ships	Service (Trade Route/Area)	Annual Sailings	
				Minimum	Maximum
American President Lines, Ltd. MA/MSB-417	1-01-78 to 12-31-97	23	Transpacific Services: ¹	72	108
			California/Far East Line A (TR 29)		
			California/Far East Line A Extension (TRs 17, 28, 29) ^{2, 3}	18	28
			Washington-Oregon/Far East Line B (TR 29)	54	80
			Washington-Oregon/Far East Line B Extension (TRs 17, 28, 29) ⁴	6	-
Farrell Lines, Incorporated MA/MSB-352	1-01-76 to 12-31-95	2	U.S. Atlantic/West Africa (TR 14-1) ^{5, 6}	20	38
Farrell Lines, Incorporated MA/MSB-482	1-01-81 to 12-31-2000	4	U.S. Atlantic/Mediterranean Service (TRs 10, 13) ⁶	44	66
Lykes Bros. Steamship Co. Inc. MA/MSB-451	1-01-79 to 12-31-98	26	U.S. Gulf/U.K. Continent (TR 21)	36	60
			U.S. Gulf & S. Atlantic/Mediterranean (TR 13) ^{7, 12}	42	48
			U.S. Gulf/Far East (TR 22) ^{7, 9, 10, 12, 15}	36	60 Overall maximum not to exceed 330
			U.S. Gulf/South & East Africa (TR 15-B) ^{7, 9, 11, 12, 15}	18	24
			U.S. Atlantic & Gulf/West Coast South America (TR 31/2) ¹³	24	48
			Great Lakes/Mediterranean-India (Trade Area 4) ^{7, 12}	3	10
			U.S. Pacific/Far East, North (TR 29) ¹⁴	20	80
			U.S. Pacific/Far East, South (TR 17/29) ¹⁴		20
Prudential Lines, Inc. MA/MSB-421	1-01-78 to 12-31-97	0	U.S. North Atlantic/Mediterranean (TR 10) ¹⁶	24	36
United States Lines, Inc. ¹⁷ MA/MSB-483					
Addendum No. 4 to amended and restated MA/MSB-483	7-08-83 to 12-31-95	0	U.S. Atlantic & Gulf/Australia, New Zealand (TR 16)	16	21
United States Lines (S.A.) Inc. ¹⁶ MA/MSB-338 (formerly Moore-McCormack Lines, Inc.)	1-01-75 to 12-31-94	0	U.S. Atlantic/East Coast South America (TR 1)	40	70
			U.S. Atlantic/South & East Africa (TR 15-A)	22	36
MA/MSB-353 (formerly Delta Steamship Lines, Inc.)	1-01-76 to 12-31-95	1	U.S. Gulf/East Coast South America (TR 20)	26	53
MA/MSB-425 (formerly Delta Steamship Lines, Inc.)	6-17-78 to 12-31-97	0	U.S. Atlantic/Caribbean (TR 4)	22	33

Operator and Contract No.	Contract Duration	Number Subsidized Ships	Service (Trade Route/Area)	Annual Sailings	
				Minimum	Maximum
Waterman Steamship Corp. MA/MSB-115	6-04-71 to 6-03-91	4 ¹⁸	U.S. Atlantic-Gulf/India, Persian Gulf & Red Sea, Indonesia, Malaysia, Singapore, Brunei (TRs 18, 17) ¹⁹	30	40
Waterman Steamship Corp. MA/MSB-378	10-26-76 to 10-25-96	0 ²⁰	U.S. Atlantic-Gulf/Far East, Indonesia, Malaysia, Singapore, Brunei (TRs 12, 22, 17) ¹⁸	8	12
Waterman Steamship Corp. MA/MSB-450	11-21-78 to 11-20-98	0 ²¹	U.S. Gulf/Western Europe (TR 21)	24	35
Total Liner Trades		60			

- ¹ Dual service privileges provide that full containerships may call at both California and Washington-Oregon, with voyages originating in California being Line A sailings, and voyages originating in Washington-Oregon being Line B sailings; however, both types of such voyages shall be counted toward maximum sailings in both Lines A and B, with the outbound and inbound portions of the sailings being counted and applied separately.
- ² Service to/from U.S. Atlantic ports is on a privilege basis with a maximum of 28 sailings.
- ³ Includes required service to Indonesia, Malaysia (except Sarawak and Sabah), and Singapore. Numbers of required sailings are a portion of the required sailings on Line A.
- ⁴ Includes required service to Indonesia, Malaysia, and Singapore. Numbers of required sailings are a portion of the required sailings on Line B.
- ⁵ Farrell is also permitted to make 12 sailings annually from the U.S. Gulf to West Africa.
- ⁶ Farrell owns one LASH vessel, AUSTRAL RAINBOW, which is eligible to operate with subsidy on TR 10/13 or 14-1.
- ⁷ Lykes is permitted to make 24 sailings annually between U.S. North Atlantic and Mediterranean ports on a privilege basis in conjunction with required service on TR 13, 15B, 22, and TA 4. Lykes is permitted to make 48 sailings annually between U.S. Pacific and Mediterranean ports on a privilege basis in conjunction with required service on TR 13.
- ⁸ Lykes is permitted to make 24 sailings annually between U.S. Atlantic and South and East Africa on a privilege basis in conjunction with required service on TR 15B.
- ⁹ Lykes has the option to perform additional sailings on TRs 22 and 15B over maximum sailings if the minimum sailings are made on all other services: on TR 22, nine additional sailings; on TR 15B, five additional sailings. The overall maximum must not exceed 330 annual sailings.
- ¹⁰ Subject to stipulation that a minimum of 12 and a maximum of 30 sailings per annum shall include ports in Indonesia and Malaysia (including Singapore)
- ¹¹ Lykes is also permitted to make 12 sailings annually from the U.S. Gulf to West Africa on a privilege basis in conjunction with required service on TR 15B.
- ¹² Lykes is permitted to make 16 sailings annually between U.S. Atlantic and Gulf ports and Southwest Asian ports (Suez to Burma) in conjunction with required service on TR 13, TR 15B, TR 22 and TA 4.
- ¹³ Caribbean Subservice--a maximum of 24 sailings per annum may provide limited TR 19 service exclusively between U.S. Gulf ports and ports on the Atlantic coast of the Republic of Panama, the former Panama Canal Zone, and the north coast of Colombia.
- ¹⁴ Lykes stopped service on TR 29 and TR 17/29 in July 1986.
- ¹⁵ Lykes may make privilege calls from the U.S. Atlantic to the Far East in conjunction with required service on TR 22.
- ¹⁶ Prudential Lines TR 10 service was suspended in May 1986.
- ¹⁷ USL/USL(S.A.), in bankruptcy, provides no service under the subsidy contract; contracts have been authorized by MSB to be assigned to Midlantic National Bank as Trustee.
- ¹⁸ Between March and July 1984, Waterman sub-bareboat chartered three of the six vessels assigned to the contract back to Central Gulf Lines, from which they had been bareboat chartered. Waterman has bareboat chartered the PRESIDENT TAYLOR from American President Lines, Ltd. with option to renew every six months until termination of contract MA/MSB-115.
- ¹⁹ Waterman is to provide a minimum of 12 and a maximum of 18 sailings annually to the Indonesia, Malaysia, Singapore, Brunei (TR 17) area under Contract Nos. MA/MSB-115 and MA/MSB-378.
- ²⁰ Both vessels which had previously been assigned to the contract were turned in to MARAD under custodial agreements.
- ²¹ Waterman is authorized to operate its LASH vessels assigned to other contracts on TR 21.

Table 12: (Continued)

Bulk Trades:

Operator and Contract No.	ODS Agreements		Number of Subsidized Ships 9/30/88	Service	Annual Sailings
	Contract Effective Date	Contract Termination Date			Minimum No. of Days
Aeron Marine Shipping Co. MA/MSB-166	10-10-74	10-09-94	0 ¹	Worldwide Bulk Trade	335
American Shipping, Inc. MA/MSB-272	4-14-76	4-13-96	1	Worldwide Bulk Trade	335
Quarius Marine Co. MA/MSB-309	10-15-75	10-14-95	1	Worldwide Bulk Trade	335
American Maritime Transport, Inc. MA/MSB-129	8-09-73	8-08-93	2	Worldwide Bulk Trade	335
American Maritime Transport, Inc. MA/MSB-166A	10-10-74	10-09-94	1	Worldwide Bulk Trade	335
Co-Falcon II Shipping Co. MA/MSB-439	5-24-81	5-23-2001	1	Worldwide Bulk Trade	335
Las Marine Co. MA/MSB-274	12-30-76	12-29-96	1	Worldwide Bulk Trade	335
Nestnut Shipping Co. MA/MSB-299	12-01-76	11-30-96	2	Worldwide Bulk Trade	335
Unity Carriers I, Inc. MA/MSB-439	5-24-81	5-23-2001	1	Worldwide Bulk Trade	335
Unity Carriers III, Inc. MA/MSB-439	5-24-81	5-23-2001	1	Worldwide Bulk Trade	335
Argate Shipping Co. MA/MSB-134	12-28-73	12-27-93	3	Worldwide Bulk Trade	335
More McCormack Bulk Transport, Inc. MA/MSB-295	12-10-75	12-09-95	3	Worldwide Bulk Trade	335
Sean Carriers, Inc. MA/MSB-167	4-03-76	4-02-96	4	Worldwide Bulk Trade	335
ibulk Transmarine I, Inc. MA/MSB-440	3-27-81	3-26-2001	1	Worldwide Bulk Trade	335
ibulk Transmarine III, Inc. MA/MSB-442	9-20-81	9-19-2001	1	Worldwide Bulk Trade	335

Total Bulk Trades

23

The vessel ARCHON has been approved for subsidized operation. However, Aeron has not executed a contract addendum to place the ship in subsidized service.

Table 13: FOREIGN TRANSFERS AND OTHER SECTION 9 APPROVALS--FY 1988 ¹

A. Program Summary:	Number	Gross Tons
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U.S. PRIVATELY-OWNED VESSELS

Transfer to foreign ownership
and/or registry

Vessels of 1,000 gross tons and over	488	610,604
Vessels under 1,000 gross tons		
Commercial Craft	150	51,416
Pleasure Craft	8	650
Subtotal	158	52,066
Total	246	662,670

Charters to Aliens

Vessels of 1,000 gross tons and over	
Approvals	65
Modifications	2
Extensions	14
Vessels of under 1,000 gross tons	
Approvals	59
Modifications	
Extensions	

Contracts of Affreightment Approvals	3
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Violations	
Reported	31
Mitigated or Settled	20

Rescissions (Sales to Aliens)	7
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Stock Transfers to Aliens	5
---------------------------	---

Modifications (Sales to Aliens)	7
---------------------------------	---

Mortgages to Aliens	0
---------------------	---

Denials	2
---------	---

U.S. GOVERNMENT-OWNED VESSELS	0	0
--------------------------------------	----------	----------

¹ Approvals granted by MARAD pursuant to section 9, Shipping Act, 1916, as amended.

Table 13: (Continued)

B. FOREIGN TRANSFER APPROVALS--Vessels of 1,000 Gross Tons and Over

	Pursuant to Section 9 (U.S. Owned and U.S. Documented)		
	No. of Vessels	Gross Tons	Average Age
Tankers	1	17,614	22 yrs
Cargo	43	441,839	42 yrs
Passenger/Cargo	3	33,595	25 yrs
Miscellaneous	41	117,556	16 yrs
Total	88	610,604	29 yrs
Recapitulation of Vessels Transferred for Operation by U.S. Owners by Nationality			
	Number	Gross Tons	
Bahamian	2	11,660	
Canadian	9	48,697	
Cayman Islands	2	4,972	
Ghana	1	1,007	
Korea, Republic of (South)	1	1,183	
Liberian	2	9,377	
Mexican	1	1,699	
Netherlands Antilles	1	1,962	
Norwegian	1	3,162	
Panamanian	3	20,497	
Singapore	1	2,519	
United Arab Emirates	1	4,193	
Venezuelan	7	7,623	
Total	32	118,551	
Sale to Domestic Alien-Controlled Corporation	12	28,794	
Sale to Alien for Scrapping	44	463,259	
Total	56	492,053	
GRAND TOTAL	88	610,604	

Chapter 3

Domestic Operations

The segment of the American merchant marine operating in the Great Lakes, on the inland waterways, and in the coastwise, intercoastal, and domestic offshore trades carries a combined total of over one billion short tons of cargo each year.

Great Lakes

The U.S. Great Lakes fleet consisted of 81 self-propelled vessels of 1,000 gross tons and over, of which 58 were active on September 30, 1988. (See Table 14.) U.S. Great Lakes vessel operators experienced their most productive year since 1984 during this reporting period. Total tonnage for the three major commodities, iron ore, coal, and stone, was 92 million short tons

through September 1988. During that month, the Lake Carrier's Association projected that over 120 million tons would be carried by mid-January, the end of the navigation season, if weather and ice conditions allow late season operation.

Low lake water levels, which reduce cargo carrying capacity, combined with strong demand for cargo, kept the fleet at near capacity utilization. Nine older



The ROGER BLOUGH is a Great Lakes self-unloader.

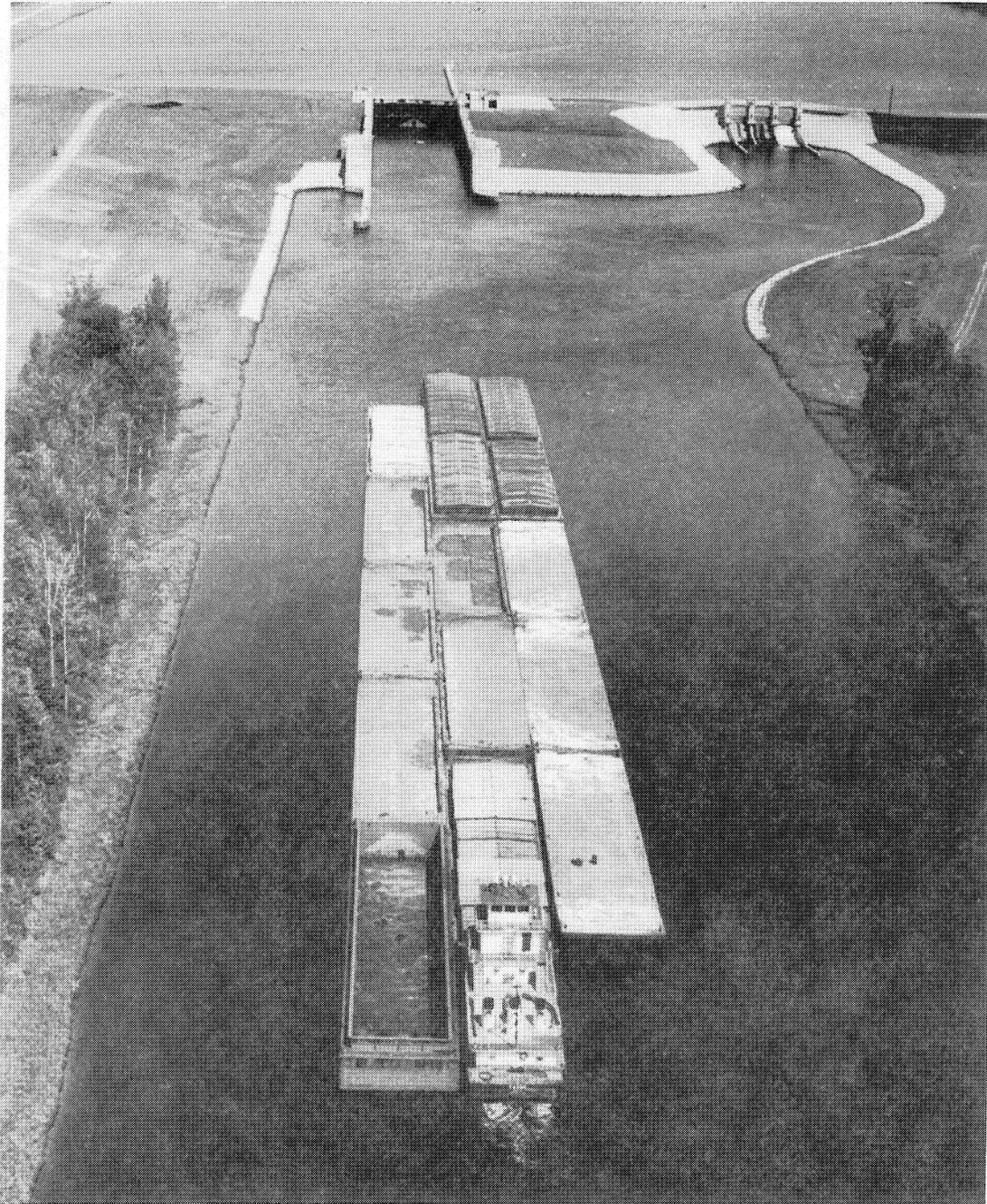
vessels, with an average age of 57 years, were taken out of service during the year. Only 19 vessels remained in lay up. Because of their age, size, or lack of self-unloading capability, the laid-up vessels were maintained primarily as emergency reserves.

Inland Waterways

As a result of severe drought conditions in the summer of 1988, the barge and towing industry serving the Mississippi River and its tributaries suffered from record low river levels, particularly on the

Lower Mississippi. Low water levels forced restricted barge loadings and tow sizes throughout the Western River System.

On June 15, 1988, the President established the Interagency Drought Policy



Lower Mississippi River barge traffic was severely disrupted in the summer of 1988. The Tenn-Tom provided significant relief for cargoes moving on the inland waterway system.

Committee to monitor the drought and coordinate the Federal response. The Maritime Administrator was a member of the committee and MARAD staff were active in preparing and analyzing reports.

During the period of intense drought, the controlled-depth Tennessee-Tombigbee Waterway (Tenn-Tom) was unaffected and provided significant relief for cargoes moving on the inland waterway system. Shippers were able to divert some of their cargo, particularly coal, from the Mississippi to the Tenn-Tom for transport to the port of Mobile, AL. In addition, approximately 900,000 metric tons of grain were rerouted from river ports through the Great Lakes ports of Chicago, Duluth-Superior, and Milwaukee.

The barge movement of military cargo increased in FY 1988. In June, the Arkansas National Guard utilized the McClellan-Kerr Arkansas River Navigation System to move about 240 military vehicles from Fort Chaffee, AK, to Camp Attebury, IN, for summer training exercises. Barge and towboat operators benefited from this upstream cargo movement while the National Guard units realized major savings in transport costs.

During the period, the Maritime Administration (MARAD) participated in the Upper Mississippi River Long-Term Resource Monitoring Program, which provides industry coordination with environmental planners throughout a five-state area.

Domestic Ocean Trades

A number of changes occurred in domestic ocean services in fiscal year 1988.

Containerships formerly owned by United States Lines, Inc. (USL) were purchased by both Sea-Land Service Corp. and the Puerto Rico Maritime Shipping Authority (PRMSA). Sea-Land put four of the vessels in a combined foreign/domestic service involving Puerto Rico, Jamaica, and U.S. East and Gulf Coast ports. PRMSA began operating three former USL ships in a purely domestic service between the Commonwealth of Puerto Rico and the U.S. mainland.

Both Ocean Line and Carolina Atlantic Transportation Service entered the East Coast-Puerto Rico trade with weekly tug/barge service.

Using vessels acquired from USL, Sea-Land instituted a new five-ship service between the U.S. West Coast and Taiwan, with intermediate domestic calls in Hawaii and Guam. These sailings replaced an interim Sea-Land service from the West Coast to Hawaii.

Carolina Caribbean Carriers, a tug/barge operator between the mainland and Puerto Rico, and Apex Oil Co., a tanker operator, filed for bankruptcy and discontinued serving the domestic trades in FY 1988. McAllister Brothers terminated its New York/Boston container feeder service in FY 1988, selling the operation to corporate management and investors who reinstated the service as Columbia Container Barge Service.

In domestic shipbuilding, the containership SEA-LAND KODIAK was delivered to Sea-Land by Bay Shipbuilding Corp. in FY 1988 for operation in the Alaskan trade. The container barge ISLANDER, slated for the mid-Pacific service of Matson Navigation, also was delivered during the reporting period. Late in the year, Matson requested bids from three U.S. shipyards for construction of a versatile 780-foot combination container and roll-on/roll-off vessel to enter its fleet by 1991.

By the start of the fourth quarter of the year, there had been a net decrease of 3.4 percent in the number of domestic ocean vessels. This represented a 1 percent decrease in carrying capacity.

In the Alaskan crude oil trade, 985 voyages were made from Valdez in FY 1988 by 56 U.S.-flag and 8 foreign-flag tankers. These ships transported an estimated 108.5 million long tons of petroleum cargoes, a 10.4 percent increase in carriage over FY 1987. U.S.-flag ships unloaded at ports in Alaska, on the Pacific Coast, and in Hawaii and Panama, while the foreign-flag vessels discharged at St. Lucia, a storage point, and in the U.S. Virgin Islands for refining.

During FY 1988, the Chiriqui Grande terminal at the eastern end of the Trans-Panama Pipeline transferred 26.6 million tons of Alaskan crude oil to U.S.-flag tankers. These vessels made 357 voyages to Atlantic and Gulf Coast ports.

Domestic Tanker Movements

Alaskan crude oil movements and product shipments between U.S. Gulf and Atlantic Coast ports remained the two key trades for U.S.-flag tankers in FY 1988. However, U.S. Gulf to East Coast tanker trade remained slack, due primarily to increased pipeline throughput.

As of May 1988, 16 tankers of 1.9 million deadweight tons were in lay-up. The majority of employment for the domestic tanker fleet was provided by the Alaskan oil trade.

At the close of this reporting period, freight rates in the domestic tanker trades were lower than 1987 levels. Even though most of the tankers in this trade were proprietary vessels either owned or long-term chartered and operated by the oil companies, a significant single-voyage market continued for independent tanker operators.

Offshore Drilling

At the end of FY 1988, there were 708 units (excluding tenders) in the world inventory of mobile offshore drilling units, of which 416 were owned by U.S.-based companies. Fourteen mobile units were under construction worldwide, with four units on order from U.S. based drilling contractors.

U.S.-owned rigs decreased by 14 units in FY 1988. On September 30, 1988, 233 rigs, or 56 percent of the total U.S.-owned drilling capacity fleet, were stationed in U.S. waters and all

but five of the total were located in the Gulf of Mexico.

The utilization of the Gulf-based mobile drilling fleet climbed from 54 percent to 67 percent in the five months from October 1987 through February 1988, then declined in the spring. An increase in drilling activity was recorded in June as operators entered into drilling contracts in order to retain leases set to expire at the end of the month. Increased activity boosted utilization to 62 percent during July 1988. Over the succeeding months utilization stabilized around the 60 percent mark recorded at the end of FY 1988.

The overall increase in utilization was reflected in slightly improved day rates. The most prevalent type of rig in the Gulf of Mexico is the cantilever jackup rated for operations in at least 250 feet of water. At the end of FY 1988, a rig of this design could command a rate of from \$10,000 to \$15,000 per day in the Gulf of Mexico. This compares to a range of from \$9,500 to \$13,000 per day at the end of FY 1987.

The 416 mobile offshore drilling units in the U.S.-owned fleet included thirteen rigs that were in MARAD's custody during 1988.

During FY 1988, MARAD approved the sale of 3 of the 13 rigs it held. Two were sold to a U.S.-based offshore investment company, of which one was later resold to a Mexican drilling company for use exclusively off the coast of Mexico. The third rig was sold for alternate use and was converted to a jack-up crane barge.

While disposing of three rigs, MARAD acquired custody of five others--two jackups, one semisubmersible and two drillships--financed with the aid of Title XI ship financing guarantees.

As a result of these transactions, at the end of FY 1988, MARAD had six jackups, two semisubmersibles and two drillships in its custody.

Table 14: U.S. GREAT LAKES FLEET ¹--SEPTEMBER 30, 1988

	Vessels	Gross Registered Tons	Estimated Deadweight Tons
Total	81	1,130,890	2,122,178
Bulk Carriers	69	1,076,893	2,202,600
Active	58	952,923	1,893,765
Temporarily Inactive	1	27,482	44,000
Laid-Up Inactive (More than 12 months)	10	96,488	163,835
Tankers	3	14,022	20,578
Active	3	14,022	0
Temporarily Inactive	0	0	0
Others ²	9	39,975	-
Active	1	3,968	-
Temporarily Inactive	0	-	-
Laid-Up Inactive (More than 12 months)	8	36,007	-

¹ Self-propelled vessels of 1,000 gross registered tons and over.

² Includes railroad car ferries, auto ferries.

Chapter 4

Market Development

The Maritime Administration (MARAD) conducts specialized marketing programs designed to increase U.S.-flag participation in the Nation's oceanborne foreign commerce. Programs are directed toward market research, improvement of communications between carriers and shippers, and individual consultation with firms active in international trade.

Marketing Program

MARAD's marketing program is conducted in cooperation with Agency offices strategically located throughout the country. In FY 1988, trade specialists assigned to these offices consulted with the transportation policymakers of over 1,000 firms engaged in foreign commerce to encourage the adoption of a company policy to utilize U.S.-flag vessels for the carriage of a fair share of their oceanborne commerce.

Voluntary reports from carriers and shippers indicate that about \$5.9 million in additional ocean freight revenues for U.S.-flag vessels resulted from these policy consultations. Over the last 6 years, more than \$60 million in additional revenue for U.S.-flag carriers has been generated by this program.

U.S.-flag operators continued to use MARAD resources to strengthen and reinforce their own competitive marketing initiatives in FY 1988. Under the Market Lead System, MARAD provides market

intelligence from private and Government sources to U.S.-flag vessel operators. These notices identified more than 100 individual business opportunities having cargo potential for the carriers during this reporting period.

MARAD actively participated in some 80 seminars, forums, workshops, and other meetings involving international trade and distribution during the year. Attended by shippers, carriers, freight forwarders, and other maritime interests, these meetings provided an opportunity for the exchange of information and views on transportation economics and practices. The meetings, held in such diverse places as New York, New Orleans, Seattle, and Little Rock, AK, also enabled the Agency to brief several thousand executives of firms involved in foreign trade on the national policy benefits which result from shipper utilization of U.S.-flag services.

During the year, a series of meetings with individual liner operators was initiated to improve the effectiveness of their marketing interface with MARAD.

Market Analysis and Planning

The Market Analysis and Planning Program is the Agency's primary area of research aimed at improving the U.S.-flag fleet's competitiveness by enhancing revenue and profitability.

In fiscal year 1988, a report on U.S. imports and exports transshipped through Canada was published. It indicated an upward trend for tonnage and value of cargo moved during the year 1986,

the most recent year for which final Bureau of the Census data were available.

Bilateral Cargo Monitoring

MARAD continued monitoring cargo movements between the United States and its trading partners as part of its efforts to assure a fair transportation environment for U.S.-flag shipping. Numerous trades were examined on an *ad hoc* basis. Some were monitored more closely due to changing trade conditions, unilateral actions on their part, or the existence of bilateral trade agreements. Because of a previous bilateral agreement and recurring talks concerning possibilities of a new agreement, trade between the United States and China was closely monitored.

In calendar year 1987, the liner trade between the two countries totaled 5.1 million tons valued at \$6.7 billion, which represented an increase of \$1.4 billion over the previous year. U.S.-flag liner vessels lifted 7 percent of the overall liner trade by weight and 25 percent by value. Chinese-flag vessels lifted 11 percent by weight and 16 percent by value. The results for both U.S. and Chinese-flag vessels are comparable to the previous year.

Preference Cargoes

Monitoring of compliance with United States cargo preference laws is essential in encouraging Federal agencies to maximize the use of U.S.-flag vessels. MARAD is responsible for overseeing compliance and reporting results

to the U.S. Congress under three principal laws. These laws are:

- The Cargo Preference Act of 1904, which requires all items procured for or owned by the military departments to be carried exclusively on U.S.-flag vessels. (MARAD's oversight activity under the Merchant Marine Act of 1970 [Public Law 91-469] encompasses all of the Department of Defense's (DOD) ocean transportation requirements to ensure that at least 50 percent of the 100 percent requirement is met by the use of privately owned U.S.-flag commercial vessels as required by Public Law 83-664.);

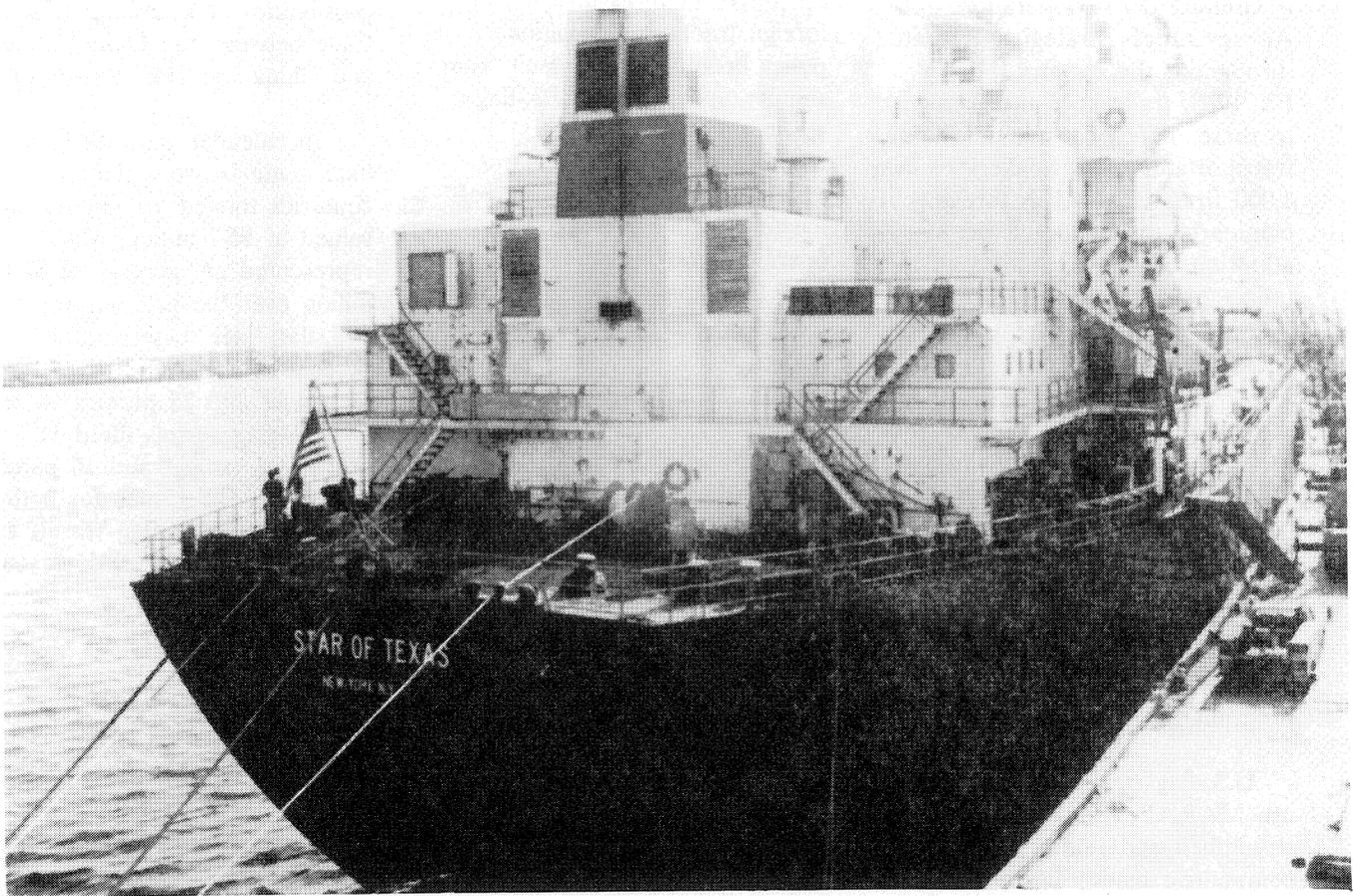
- Public Resolution 17 of the 73rd Congress, which requires that all cargoes generated by the Export-Import Bank (Eximbank) be shipped on U.S.-flag vessels, unless waiver is granted; and

- The Cargo Preference Act of 1954 (Public Law 83-664), which requires that at least half of all Government-generated cargo subject to the law be transported on privately owned U.S.-flag commercial vessels if they are available and at fair and reasonable rates. In 1985, amendments were made to the Merchant Marine Act, 1936, requiring that the percentage of certain agricultural cargoes moving on U.S.-flag vessels increase from

50 to 75 percent over a three-year period commencing in April 1986.

To assure that all cargo preference laws are followed, MARAD monitors the shipping activities of 70 Federal agencies, independent establishments, and Government corporations. (See Table 15). With the exception of the Eximbank, for which records are maintained over the life of a loan or guarantee, and the DOD commercial contractor cargoes, statistics for all other programs are monitored on the basis of either a calendar-year or 12-month program.

A computerized reporting system enabled MARAD to



The STAR OF TEXAS being loaded with approximately 34,000 tons of sacked flour destined for Egypt.

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A computerized reporting system enabled MARAD to process 22,700 bills-of-lading for 1987. These documents covered civilian agencies, some DOD contractor shipments, Eximbank, and most Foreign Military Sales Credit (FMSC) Program cargoes. The equivalent of 40,000 bills-of-lading that embrace Military Assistance Program (MAP) and FMSC shipments also were processed using computer tapes provided by DOD.

Agencies Not in Full Compliance with Public Law 83-664

U.S. Department of Agriculture (USDA) failed to achieve the statutory U.S.-flag participation for the P.L. 480, Title I Program for the reporting period of April 1, 1987 through March 31, 1988. The shortfall in the required U.S.-flag participation was not a result of the unavailability of U.S.-flag vessels. It appears to

have resulted from a failure by USDA to approve enough U.S.-flag vessels which would have completed their loading sufficiently in advance of the end of the accounting period.

In 1987, several of the Department of Defense's contracting agencies did not achieve the required U.S.-flag participation under Public Law 83-664. However, MARAD does not view the foreign-flag vessel carriage of these agencies' cargoes as overt violations of either of the statutes. In 1987 the DOD agencies were still in the process of carrying out full-scale operations which addressed the cargo preference clauses and the drafting of procedures to implement these clauses in their contracts.

The Agency for International Development (AID) for the Public Law 480, Title II program, failed to comply with MARAD's regulation 46 CFR 381.3, which requires that Federal agencies are to provide MARAD with bills-of-lading, or the data contained thereon. AID did not provide the required documents/information after repeated requests for the material by MARAD.

ERRATA

Several paragraphs were inadvertently dropped from the beginning of page 28 of MARAD '88, the Annual Report of the Maritime Administration for Fiscal Year 1988.

The complete text which should appear on page 28 is printed on the reverse of this sheet.

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Ocean Freight Differential

Amendments to the Merchant Marine Act of 1936 made in 1985 require MARAD to reimburse the USDA's Commodity Credit Corporation (CCC) for ocean freight differential (OFD) costs between U.S.-flag and foreign-flag vessels. This involves OFD costs for increased U.S.-flag share of agricultural shipments exported under certain specified export programs (Public Law 83-480 and Section 416 programs). OFD cost is defined as the difference between the cost of shipping a cargo on a U.S.-flag vessel and the cost of shipping on a foreign-flag vessel.

USDA continues to be responsible for funding OFD costs for the first 50 percent share of cargo that must move in U.S.-flag vessels under each program. MARAD is responsible for the OFD costs above 50 percent, not to exceed the legislated increments of 60 percent in the first USDA/CCC Cargo Preference Year (April 1, 1986 to March 31, 1987), 70 percent in the second year (covered by this report) and 75 percent in the third and subsequent years. MARAD borrows from the U.S. Treasury funds needed to reimburse USDA/CCC for the approved OFD amounts within agreed upon time periods. The 1988 appropriation provided funds for 1988 and future years to repay

borrowing from Treasury. During the report year, which commenced April 1, 1987, MARAD's share of the OFD based on fully supported CCC invoices received when this report was prepared, has amounted to \$39,185,894.

The 1985 amendments to the Merchant Marine Act also required MARAD to reimburse CCC for any ocean freight costs that exceed 20 percent of the sum of ocean freight, OFD and value of commodities disbursed by them covering shipments during the fiscal year. Through FY 1988 this provision did not require any payments by MARAD.

Additionally the 1985 amendments require that certain steps be taken, as may be necessary and practicable, without detriment to any port range, to preserve for U.S. Great Lakes ports each year through CY 1989 the percentage share or metric tonnage (whichever is less) of Public Law 480, Title II bagged, processed, or fortified commodities as exported through these ports during CY 1984. According to the USDA, 245,338 metric tons, representing 20 percent of the total of these Title II commodities, were exported through Great Lakes ports during CY 1984. During the program year, which began on April 1, 1987, the quantity of these Title II commodities shipped through Great Lakes ports amounted to 248,011 metric tons. This satisfies the minimum tonnage requirement specified in the statute.

DOD Commercial Contractor Shipments

Agreements have been executed by MARAD with the Departments of Army, Navy, and Air Force, the Corps of Engineers, and the

Defense Logistics Agency covering their commercial contracting activities. Under these agreements, MARAD assists DOD and its commercial contractors and suppliers in securing appropriate U.S.-flag shipping services and in the monitoring of these cargoes.

The 1987 statistics for Cargo Preference Act of 1904 cargoes shown in Table 15 include only a portion of the commercial contractor cargoes generated by these agencies, because a number of DOD's contracts in 1987 still did not contain the bill-of-lading reporting provision.

DOD's Troop Support cargoes which are processed by MTMC and MSC are listed separately. A breakdown of tonnage between U.S.-flag privately owned and U.S. Government-owned vessels is also included. The data is provided by the MSC, with no independent MARAD verification. Precise revenue data from the MSC are not available.

The Army, Navy, and the Defense Logistics Agency failed to achieve 100 percent U.S.-flag participation in their commercial contracting activities during CY 1987. Only a small portion of foreign-flag participation was due to the non-availability of U.S.-flag vessels. The primary reasons for the shortfalls were inconsistencies previously existing in the Defense Acquisition Regulation provisions, the absence of appropriate U.S.-flag provisions in a subsequent number of DOD's contracts, and some procuring agencies' lack of experience with cargo preference. However, significant increases in the U.S.-flag participation have occurred since MARAD initiated its activity with DOD, and these problems have been addressed by recent agreements between MARAD and the DOD con-

tracting commands concerning implementation of the Federal Acquisition Regulation (FAR), which became effective on April 1, 1984. The FAR clearly states that DOD cargoes are covered by the Cargo Preference Act of 1904, making them subject to a 100 percent U.S.-flag requirement. The establishment of permanent DOD wide procedures by the Defense Acquisition Counsel is expected ultimately to remove the current problems with DOD's contracts concerning cargo preference.

International Cooperative Projects' Contractor Shipments

Consistent with international cooperative agreements, DOD participates with our NATO allies in joint procurement of certain items used in common by our defense establishments. Because the U.S.-flag requirement remains at 100 percent for DOD's involvement in such procurement, actual U.S.-flag participation by statute cannot be less than the percentage relationship of the U.S. Government's financial participation in the particular cooperative project. Therefore, U.S.-flag actual performance in these projects can legitimately be less than 100 percent of the total tonnage reported. This concept was confirmed through exchanges of letters between DOD and MARAD in 1982 and 1983. DOD agreed to insert a provision in every Memorandum of Understanding for Cooperative Procurement reflecting this concept for U.S.-flag utilization. Because of the sensitivity of these projects, none are specifically named, but all projects' shipping activities are incorporated into the total for this category.

This first reporting of DOD's international cooperative projects

includes the shipments of prior years which were never reported.

U.S.-flag participation in all projects has exceeded the minimum level specified in the Memoranda of Understanding. Therefore, full compliance with the governing cargo preference statutes is being achieved.

Strategic Petroleum Reserve

In order to develop and maintain a Strategic Petroleum Reserve (SPR), in 1977 the U.S. Government announced its intention to store 750 million barrels of crude oil in salt domes along the U.S. Gulf Coast. At the end of 1987, 541 million barrels of crude oil had been stored at five SPR sites.

The Cargo Preference Act requires the Department of Energy (DOE) to transport at least 50 percent of the oil in U.S.-flag tankers. In 1977, MARAD and DOE agreed that a long ton/mile formula would be used to determine compliance, rather than total tonnage carried.

In calendar year 1987, U.S.-flag tankers carried SPR cargo amounting to 1.3 billion long ton/miles (50 percent). This carriage generated \$7 million in revenue, which is higher than the 1986 level (\$5.4 million) due to the increased oil acquired under the program.

Eximbank

The Eximbank program's total ocean freight revenues decreased from \$15.9 million in 1986 to \$10.5 million in 1987. In CY 1987, U.S.-flag operators earned \$8.3 million--78 percent of total ocean freight revenues. This decline resulted from reduced new projects and completion of others.

Table 15: GOVERNMENT-SPONSORED CARGOES--CALENDAR YEAR 1987 ^{1,2 9,10,11}

Public Law 664 Cargoes:

Program	U.S.-Flag Revenue (\$1,000)	Total Metric Tons ³	U.S.-Flag Metric Tons ³	Percentage U.S.-Flag Tonnage
Agency for International Development (AID):				
Loans and Grants	46,035	1,247,499	645,476	52
P.L. 480 - Title II	153,926	2,147,947	1,573,947	73 ¹
Section 416	59,691	1,384,612	992,553	72 ¹
Department of Agriculture:				
P.L. 480-Title I/III	190,777	4,915,000	3,411,988	69 ^{1 4}
Department of Commerce:				
Agencies	832	2,982	1,109	37 ⁵
Department of Defense (DOD):				
Foreign Military Sales Credit and MAP Merger Programs	30,376	119,578	97,410	82 ³
Department of Energy:				
Bonneville Power Administration	28	449	132	29 ⁵
Strategic Petroleum Reserve	7,000	3,569,492	1,803,036	51 ⁶
Other Agencies	770	3,464	2,907	84
Department of Health and Human Services	25	55	28	51
Department of Justice:				
Federal Bureau of Investigation	12	7	7	100
National Aeronautics and Space Administration	402	407	311	76
National Science Foundation	2,664	31,151	31,059	100
General Services Administration	1,018	1,143	946	83
Department of Transportation:				
Urban Mass Transportation Administration	4,036	6,985	4,332	62 ³
Coast Guard	150	232	232	100
U.S. Information Agency	315	1,082	604	56
Department of State:				
Foreign Building Office	1,208	62,62	4,382	70
Other Agencies (not including AID)	2,671	5,388	4,856	90
Turnkey-Security Upgrade	313	1,247	1,129	91
Other Agencies	4	5	5	100 ⁷

Table 15: GOVERNMENT SPONSORED CARGOES--CALENDAR YEAR 1987 ^{1 2 8 10 11}--(Continued)

Public Resolution 17 Cargoes:

	Total Freight Revenue	U.S.-Flag Freight Revenue	Percentage U.S.-Flag
Export-Import Bank	\$ 10,588,889	\$8,320,724	79 ⁸

Cargo Preference Act of 1904 Cargoes:

	Metric Tons ⁹	Percentage of Total Troop Support Cargoes
Department of Defense Troop Support Cargoes ¹²		
Military Sealift Command (MSC)		
U.S.-flag privately owned vessels	12,139,840	91.4
U.S.-flag vessels less than years under U.S. registry	-	-
U.S. Government owned vessels	187,048	1.4
Grand Total U.S.-flag carriage of MSC Troop Support Cargoes	13,278,343	92.8

Program	U.S.-Flag Revenue (\$1,000)	Total Metric Tons ³	U.S.-Flag Metric Tons ³	Percentage U.S.-Flag Tonnage
Department of Defense Commercial Contractor Cargoes: ^{10,13}				
Army Material Command	1,979	12,512	11,815	94
Air Force	1,308	5,429	5,429	100
Corps of Engineer	836	1,959	1,959	100
Defense Logistics Agency	7,608	42,793	35,757	84
Navy	5,221	25,579	25,154	98
Total U.S.-flag carriage of Department of Defense Commercial Contractor Cargoes	16,952	88,272	80,114	
Department of Defense International Cooperative Projects:				
Prior years' shipments	2,135	13,397	10,584	79
CY 1987 Shipments	410	2,135	2,032	96

Cash Transfer Cargoes:

Program	U.S.-Flag Revenue (\$1,000)	Total Metric Tons	U.S.-Flag Metric Tons	Percentage U.S.-Flag Tonnage
Agency for International Development (AID) Israeli Cash Transfer Program	27,994	1,635,292	876,235	54 ¹¹

¹ The Food Security Act of 1985 (P.L.) 99-198 impacted on the P.L. 480 Title I, II, III, and Section 416 programs by changing the reporting period from a calendar year to a 12-month period, commencing April 1, 1986 through March 31, 1987 and by increasing the U.S.-flag share from 50 to 75 percent over a 3-year period. The required U.S.-flag share for the current reporting period, April 1, 1987 to March 31, 1988, is 70 percent.

² Includes civilian agencies, Department of Defense (DOD) Foreign Military Sales Program, and a partial listing of DOD commercial contractor shipments. DOD Troop Support cargoes processed by the MSC are also reported.

Table 15: GOVERNMENT SPONSORED CARGOES--CALENDAR YEAR 1987^{1 2 9 10 11}--(Continued)

- ³ Several agencies' tonnages are reflected in metric tons for uniformity only. Cargo preference compliance for those programs involving high cube/low density cargo, is achieved on a gross revenue ton basis. Percentages reflected on a weight tonnage basis for such programs do not necessarily represent the exact extent of the program's compliance with the statute.
- ⁴ This program did not meet the minimum 70 percent U.S.-flag participation level. Sufficient U.S.-flag service was available on a timely basis which would have enabled the agency to meet the cargo preference compliance requirement.
- ⁵ Agencies complied with the statute. The imbalance in favor of foreign-flag shipments was due to nonavailability of U.S.-flag service.
- ⁶ MARAD accounts for the SPR program on the basis of long term miles (LTM). In CY 1987 this program provided a total of 2.6 billion LTM of which U.S.-flag carriers derived 1.3 billion LTM or 50 percent.
- ⁷ Cargo of government and private agencies that generated less than 100 metric tons of cargo in 1987. The agencies which reported in 1987 are Drug Enforcement Administration; Geological Survey; Labor Department; National Oceanic and Atmospheric Administration; Smithsonian Institute; Treasury Department; U.S. Customs; Veterans Administration.
- ⁸ Compliance based on Freight Revenue only.
- ⁹ As MSC records liner cargo in measurement tons, MARAD has converted these to metric tons using a factor of .284 metric tons per measurement ton.
- ¹⁰ DOD's contracting activities are subjected to the Cargo Preference Act of 1904 (10 USC 2631). P.L. 664 impacts 10 USC 2631 requiring that privately owned U.S.-flag vessels must be used for at least 50 percent of DOD's 100 percent U.S.-flag requirement. DOD's contractors must use privately owned U.S.-flag commercial vessels for 100 percent of their cargoes since such cargoes are processed totally within the commercial transportation environment.
- ¹¹ While statistics are shown for CY 1987 shipments, Israeli cash transfer program is maintained on a fiscal year basis. This reflects the terms of the side letter executed each year between the government of Israel (GOI) and AID. On a fiscal year 1987 basis, GOI shipped 54.0 percent on U.S. flag vessels:

Program	U.S.-Flag Revenue (\$1,000)	Total Metric Tons	U.S.-Flag Metric Tons	Percentage U.S.-Flag Tonnage
AID/Israeli Cash Transfer FY 1987	\$26,872	1,530,282	827,123	54

- ¹² MARAD is unable to verify the Troop Support cargo data since complete information was not available in time for this report.
- ¹³ Data reflects only a partial listing of DOD's contracting activities due to the time required for DOD to update its active contracts to include the full U.S.-flag shipping provisions contained in the FAR.

Chapter 5

Port and Intermodal Development

The Maritime Administration (MARAD) provides technical assistance in port and intermodal planning and operations to State and local port authorities, private industry and foreign governments. It also develops contingency plans for the utilization of ports and port facilities to meet defense needs

in times of national emergency or war. (See also Chapters 8 and 9.)

the Nation's economy and military security.

Annual Report on Ports

The Secretary of Transportation is required by Public Law 96-371 to submit a report to Congress on the status of public ports of the United States. The combined report for calendar years 1986 and 1987 examined the composition of the port industry, highlighted issues and problems, and reviewed the importance of U.S. ports to

Port and Waterway Development

MARAD continued, in FY 1988, to promote the use of real-time marine research simulation, by the U.S. Army Corps of Engineers and others for testing alternative port channel widths and configuration designs to reduce the cost of maintenance dredging and deepening projects in U.S. harbors.



Lykes Bros. containership taking on cargo in New Orleans.

Technical Assistance to the Port Industry

MARAD continued to provide technical assistance to the port industry through two major programs and several projects dedicated to strengthening the role of U.S. ports in economic development and national defense. This involved the development of various analytical reports, methodologies and data systems for improving planning, productivity, and the general efficiency of port management and

marine terminal operations. These technical projects were cost-shared by MARAD and appropriate State or local port authorities and private sector organizations.

Port and Intermodal Planning Program

The Agency's 1988 cost-shared port and intermodal planning program included cooperative port development studies with local,

State, and regional port agencies and associations; port planning and management information systems; and financial and economic impact analysis projects. Emphasis continued to be placed on developing generic methodologies usable by any U.S. port or region. This included development of appropriate software for use on microcomputers.

Projects under this program which were completed, continued, or initiated in FY 1988 are listed below:

Projects Completed	Description
Port Facilities Data Base Evaluation	Implemented changes in the hardware, software, and data record configuration of the Agency's automated <i>Port Facilities Inventory</i> .
Strategic Planning Handbook	Chaired a special subcommittee of the American Association of Port Authorities (AAPA) Planning and Research Committee, which developed a <i>Port Strategic Planning Handbook</i> to assist ports in evaluating their total operating environments for long-term planning purposes.
National Economic Impact Model	Completed development of an automated MARAD Input-Output Model to determine economic contributions of the various sectors of the U.S. maritime industry.
Port Executive Information System	Completed a cooperative cost-shared agreement with the AAPA to develop a microcomputer-based Executive Information System that will provide select operational, financial and marketing information to senior port executives.
National Petroleum Council	Developed data for the National Petroleum Council on petroleum storage capabilities at U.S. coastal and Great Lakes ports which will be used in an assessment of the U.S. petroleum industry.
Government Shipping Research	Managed five projects selected and contracted for under the MARAD Government Shipping Research Program which explore ways to improve shipping practices and lower transport costs of P.L. 480 cargoes.

Projects Completed	Description
Sea Grant Cooperation	Completed an agreement with the National Sea Grant College Program to cooperate in reviewing technical proposals, planning joint seminars, exchanging technical information and resources, and cost-sharing research projects.
Caribbean Port Tariff Analysis	In conjunction with the Office of the Secretary of Transportation, completed a comparative analysis of marine terminal tariffs and tariff changes in Caribbean Basin ports.
Port Training Program	Completed a cost-shared study with the Organization of American States which provided the foundation for a 5-year training program for mid-level and senior port officials in Latin American and Caribbean ports that will be implemented for member states during FY 1989.
Port Training Technical Paper	Prepared a technical paper on port training which was presented to Latin American and Caribbean port representatives at the 77th Annual Convention of the AAPA.
Port Technologies Conference	Co-sponsored and served as Program Chairman of the first national conference of the U.S. Section of the Permanent International Association of Navigation Congresses on port, vessel and waterway technologies for the 1990s.

Ongoing Projects	Description
Upper Mississippi River Transportation Economic Study	Continued to serve on the Steering Committee for the Upper Mississippi River Transportation Economic Study. A consortium of five Upper Mississippi River states, MARAD, and the Department of Agriculture are participating in this economic analysis and modeling of measures of efficiency for river operations.
National Port Assessment (1990-1995)	Continued working on the second edition of the MARAD <i>National Port Assessment (1990-1995)</i> . The analysis includes anticipated data, forecasts, hinterlands, facilities, supporting maps, etc.
Port Expenditure Survey	Continued data analysis of the industry-conducted survey to update the MARAD report <i>United States Port Development Expenditure Survey</i> , which profiles major expenditures for new construction, modernization, and rehabilitation.

Ongoing Projects	Description
Port Facilities Inventory	Continued maintaining, operating, and updating MARAD's port facility inventory for inland river and ocean ports and assisted in integrating the database into the Agency's Maritime Statistical Information System.
U.S. Stevedoring Industry Study	Continued to develop a national update and expansion of the MARAD report, <i>The Stevedoring and Marine Terminal Industry</i> , with the National Association of Stevedores.

Projects Initiated	Description
MARAD Port Data System Relationships	Began an assessment of port models and data bases available at MARAD in order to maximize their utility to industry.
Inland Origin and Destination Data	Initiated efforts to integrate the new Bureau of the Census data on the inland origin and destination of U.S. foreign waterborne trade with Data Resources, Inc.'s <i>World Sea Trade System</i> reports currently received in MARAD.

Port and Intermodal Operations Program

This cost-shared program helps improve productivity in the operation of facilities, equipment,

and waterways. The program also provides planning for emergency operating conditions at ports in time of crisis or war.

Projects completed, ongoing, or initiated in FY 1988 are described below:

Completed Projects	Description
Intermodal Equipment Inventory	Prepared and distributed the <i>Inventory of American Intermodal Equipment--1987</i> , a comprehensive statistical review and classification of equipment owned by American steamship and container leasing companies.

Completed Projects	Description
Marine Terminal Productivity Roundtables	Sponsored a national Roundtable on productivity in U.S. marine container terminals in cooperation with the National Academy of Sciences' Marine Board and senior industry, Government, and labor leaders. Participated in the first regional productivity Roundtable, sponsored by the Master Contracting Stevedoring Association of the Pacific Coast.
Regional Automated Cargo Release System	Completed a cooperative agreement with the Golden Gate Ports Association to research the requirements and develop a generic design of an automated import cargo release system for U.S. that plan to use the U.S. Customs' Automated Commercial System.
Coal Export Marine Terminal Capacity	Prepared and distributed the MARAD publication <i>Existing and Potential U.S. Coal Export Loading Terminals</i> .
Climate Change Conference	Co-sponsored and participated in the First North American Conference on Preparing for Climate Change held in Washington, D.C. Discussed the impact of worldwide sea level rise due to projected global temperature increases.
Environmental Impact Seminar	Assisted in planning the first International Maritime Organization Seminar on Mitigation of Environmental Impacts on Port Development in Developing Nations.
Inventory of Port Training	Completed worldwide inventory of training programs for marine terminal managers as input to ongoing discussions with industry to develop and conduct a two-week training course for marine terminal supervisory personnel at the U.S. Merchant Marine Academy.
Developing Countries Intermodal Container Capability	Prepared report on intermodal container facilities in Africa, South America, and Asia to assist in an evaluation of a U.S.-flag carrier's shipbuilding plans.
Safety and Environmental Protection Reports	Prepared and distributed four separate issues MARAD's <i>Report on Port and Shipping Safety and Environmental Protection</i> .
Marine Pollution Workshop	Assisted the Environmental and Policy Institute of the East-West Center located in Hawaii in organizing and conducting a workshop on "Preventing Marine Pollution from Ships in the Peoples Republic of China."

Completed Projects

Description**Maritime Security Training**

In cooperation with the U.S. Department of State, Office of Diplomatic Security, maritime security briefings were conducted for law enforcement security personnel from the Philippines, Greece, and Tunisia.

Maritime Security Demonstration

Conducted a demonstration for the U.S. Coast Guard and the State Department of the Anti-Shipping Activities Message Program that has been developed by the Defense Mapping Agency.

Ongoing Projects**Description****Interagency Environment and Hazard Liaison**

Maintained liaison with the U.S. Coast Guard, Environmental Protection Agency, State Department, U.S. Army Corps of Engineers, and other agencies on matters pertaining to activities of the Shipping Coordinating Committee, the Chemical Transportation Advisory Committee, and the Towing Safety Advisory Committee.

Interagency Group on Terrorism

Continued to serve as a member of the Department of State's Inter-Department Group on Terrorism which coordinates international training activities to combat terrorism and reports to Congress each calendar year.

Container Transport by River Barge

Continued to represent the United States on an international working group on container barge transport by inland vessel, sponsored by the Permanent International Association of Navigation Congresses. A final report is scheduled to be published in 1989.

Projects Initiated**Description****Overweight Marine Containers**

Participated in industry and Government discussions and various study efforts concerning the issue of overweight marine containers moving on U.S. highways. Prepared a position paper on a proposed remedial concept utilizing a licensing process.

Double-Stack Domestic Transport

Prepared a request for proposals for a cost-shared study with the Federal Railroad Administration to examine the potential of double-stack container carriage by rail in domestic transportation and its implications for railroads and ports.

Technology Transfer

Many projects and activities undertaken by MARAD are initiated at port industry request or are proposed as a response to port industry needs. In each case, the results are designed to serve

the needs of the widest spectrum of port users, in addition to the proponent. Consequently, the Agency has an active program to acquaint the port industry with available tools, their benefits, and

the procedures for obtaining the materials.

During FY 1988, the following technology transfer activities occurred:

Transfer Projects	Description
MARAD Management Tools	Demonstrated MARAD's automated port economic impact kit and its riverine port management information system at the first national technology conference of the U.S. Section of the Permanent International Association of Navigation Congresses.
Economic Impact Analysis	Co-sponsored, with the AAPA, two workshops on port economic impact analysis using the MARAD Port Economic Impact Kit as the basis for workshop instruction.
Strategic Planning Seminar	Assisted the Planning & Research Committee of the AAPA in organizing and presenting a seminar on Port Strategic Planning.
Computer-Aided Video Instruction Techniques	Conducted a computer-aided video demonstration for Oregon State University at the Department of Transportation. This state of the art technology was developed for training port managers and planners.

Chapter 6

Technology Assessment

The Office of Technology Assessment was formed within the Maritime Administration (MARAD) on October 1, 1987, as successor to and with combined responsibilities of, the Offices of Advanced Ship Development, Advanced Ship Operations, and Maritime Technology. Its mission is to assess technology related to the development and use of water transportation systems for both commercial economic and national security purposes.

It studies current maritime developments and future trends and it identifies and stimulates the transfer of advanced technologies from other areas into the maritime or related industries. It also serves as a focal point to bring advanced technical expertise to bear on issues of concern to MARAD and the Department of Transportation.

Technical and Program Studies Plan (TPSP) contracts and cooperative agreements awarded in FY 1988 are listed in Appendix III.

Military Sealift

MARAD's Military Sealift program involves development of efficient, effective waterborne transportation services for commercial vessels in cooperation with the U.S. Navy. It also aids in developing adequate logistical support for military operations.

MARAD sponsored a Military Sealift Technology Conference on

October 28-29, 1987, bringing together over 350 representatives of MARAD, the Department of Defense, industry, and academia to review sealift status, discuss problem areas, and set goals for addressing the utilization of the commercial merchant fleet to provide sealift in times of national emergency.

Projects completed during fiscal year 1988 included a feasibility study of technology to control a load suspended from a crane while discharging cargo from a vessel moored offshore.

The possible use of mobile offshore jack-up and semi-submersible drilling units as offshore port facilities in amphibious operations was also examined and recommended for testing.

Another study determined that an elevated tower with rotating cargo platforms could provide dramatic increases in productivity when used in place of traditional burtoning gear for offshore discharge.

At the end of the reporting period, plans to continue work on advancing these and other sealift technologies were being discussed with the Navy and other Department of Defense agencies.

Government Shipping

The Government Shipping program seeks to develop lower cost transportation services for the carriage of cargo preference shipments for Government agencies such as the Department of Agriculture and the Agency for International Development.

Projects initiated during fiscal year 1987 and continued in FY 1988 included:

- Analysis of transportable floating grain-handling systems employing state-of-the-art cargo-handling technology; and
- Feasibility of developing an automated bagging system for bulk grain products at port locations.

These projects are scheduled for completion in fiscal year 1989.

Marine Science

The Marine Science program involves the exploration and understanding of ship structures and hydrodynamics technologies fundamental to vessel design and performance in a seaway.

Ship structural projects seek solutions for structural problems affecting ship safety and survivability. They encompass the development of new structural materials and improved structural design and fabrication procedures. They are cost-shared with, and jointly administered by, several other Government agencies with contracts awarded by the U.S. Coast Guard (USCG) on behalf of the interagency Ship Structure Committee.

During fiscal year 1988, a major program element was initiated to develop and implement reliability-based structural design procedures. Three projects awarded during the reporting period involved uncertainties of estimated loads and load effects on marine structures, hull strapping of ships, and fiber-reinforced plastics for marine structures.

One hydrodynamics project was implemented in fiscal year 1988. The Massachusetts Institute of Technology will complete the analysis of existing full-scale maneuvering data, and conduct additional full-scale ship maneuvering and resistance trials in FY 1989.

Maritime Safety

The Maritime Safety program is a new initiative. It is directed toward assessing advanced vessel navigation and communication systems, operational procedures, and maintenance policies which enhance maritime safety while enabling vessels to operate more efficiently and meet Federal standards for safety and air, water, and noise pollution both in port and at sea. Initiatives included a joint MARAD/USCG effort under a Cooperative Technical Studies Program. Three projects were begun in fiscal year 1988.

The first involved a failure modes and effects hazards analysis study by Southwest Research Institute for the U.S. Coast Guard Chemical Transportation Advisory Committee (CTAC). This work reviewed CTAC draft safety standards on shoreside and shipboard recovery of hydrocarbon vapors and resulted in significant safety improvements in the draft standards.

Two other projects address human factor issues. Dynamic Research Inc., began reviewing human factor elements in marine casualties and will develop methods for investigating casualties and recording information in a computer data base. The Transportation Systems Center began a study of shipboard crew fatigue. Worldwide crew manning

levels are being reduced drastically and this project focuses on the potential effects of fatigue on safety and productivity.

Effective Manning

The Effective Manning program involves operations research and analysis to increase the productivity of shipboard personnel by rationalizing manning structures and improving the quality of life through joint labor and management efforts.

An ongoing project with American President Lines, Ltd. was completed in fiscal year 1988. It involved cooperative shipboard and shoreside experiments and a foreign visit by owner and union representatives. The project demonstrated how a 21-person crew can operate a U.S.-flag ship efficiently. The report, *Effective Manning in the Orient*, dealt with the manner, extent, and speed with which significant manning changes are being made abroad in this area.

An 18-month study, co-sponsored by MARAD and the USCG, on the *Effect of Smaller Crews on Maritime Safety* was begun by the Marine Board of the National Academy of Sciences Commission on Engineering and Technical Systems. It addresses the manning and safety of coastal and oceangoing vessels, as well as Great Lakes carriers.

Ship Performance

The Ship Performance program involves the study and development of ship design innovations and "add on" systems that can be incorporated on U.S.-flag vessels to improve their operational

performance, and reduce maintenance costs and power consumption, and labor costs.

A long-term project with the Copper Development Association, Inc., was completed in fiscal year 1988. The study evaluated the use of copper-nickel sheathing on a ship's exterior underwater hull surface to reduce corrosion and biofouling, thus improving ship operating efficiency. The report summarized the technology and full-scale trials, and provided an in-depth examination of shipyard installation methods and costs. A reasonable cost benefit was shown for ships having as little as 10 years of remaining life.

Erskine Systems Control, Inc., completed development of a prototype, on-line, real-time, ship performance measurement and monitoring system in this reporting period. While performance testing was not completed, the system indicated a promising onboard tool for instantly analyzing fuel/speed performance.

A project with the American Bureau of Shipping continued in fiscal year 1988 with the development of a Shipboard Contingency Planning System. This computer-based decision support system will provide useful information concerning actions to be taken by the ship master in the event of damage caused by flooding, grounding, collision, or other incidents affecting the integrity of the hull.

An ongoing project by Phillips Cartner & Co., Inc., involves studying advancements in ship features that permit improved performance through both technological innovation and effective manning. An industry team is assisting in this vessel productivity assessment.

Cargo Handling

The Cargo Handling program assesses advanced materials handling, automation, data processing, and communications technologies which could reduce the cargo handling and documentation costs of intermodal shipments between water and rail or motor carrier transportation modes.

During the reporting period, MARAD continued to encourage and support industry research and development through the Cargo Handling Cooperative Program (CHCP). Three U.S.-flag carriers, who are parties to the cooperative agreement, carried out joint projects designed to increase cargo-handling productivity through the introduction of new technology.

The potential of automatic equipment identification, or AEI, was tested for applications within the maritime industry. Using radio frequency identification systems (RFID), tests were performed at American President Lines, Ltd. (APL) (Oakland), Matson Navigation Terminals (Seattle), and at Sea-Land Service, Inc. (Anchorage). A joint test with the Military Traffic Management Command (MTMC) and APL tracked containers loaded at the Military Ocean Terminal Bay Area (MOTBA), Oakland, CA, to their destination at the MTMC warehouse on Okinawa.

Work on developing a standard for AIE/RFID for the maritime industry has been underway since 1986. The first draft standard was circulated by the ISO Technical Committee 104.

Joint projects with the Naval Supply Systems Command

(NAVSUP), MTMC, and the U.S.-flag carrier members of the CHCP have developed and tested the use of microcircuit cards to provide pertinent shipping information on the contents of a container. The successful tests have led to planning of additional joint Department of Defense/CHCP testing designed to lead to paperless shipping, enhance the throughput of containers in marine terminals, and increase the productivity of intermodal transportation.

The use of microcircuit technology to maintain identification, historical, and logistical data pertinent to a specific piece of equipment is being developed in a joint CHCP/Army project. Modified "smart cards" will be permanently mounted to a vehicle or material-handling equipment and will collect dynamic real-time data via sensors which read the vital signs during operation. The system interfaces into standard maintenance and repair computer systems and replaces a manual, business-form oriented logbook and keypunched data input. It will provide more efficient use of manpower, may reduce standard M&R requirements and increase equipment utilization. Tests of a prototype system were scheduled to begin in early FY 1989.

Also during the year, a joint NAVSUP/CHCP project was testing the use of low-frequency, high-data RFID tags to track palletized/unitized shipments in a warehouse environment from receipt, to storage and to ultimate shipping. The tags have the capability to identify the pallet with a specific number and also carry information on the commodity, pieces, weight, and cube of the cargo. By using fixed

and portable readers, a real-time warehouse inventory with accurate locations will be possible.

A test of voice recognition technology was successfully completed at Sea-Land's Tacoma (WA) terminal. The prototype provided maintenance and repair information and container availability as containers were inspected in the container yard. An inspector, wearing a headset and a portable radio, communicated directly with a computer as he inspected containers for damage. Reports on the extent of damage, parts required, and estimated repair time were prepared immediately and the availability of containers in good condition was reported to the dispatcher.

Waterway Development

MARAD's Waterway Development program applies advanced simulation methodologies to enhance understanding of the interaction of vessel maneuvering capabilities and channel configuration in harbors, rivers, and canals.

At the request of the U.S. Army Corps of Engineers, San Francisco District, a contract was awarded during FY 1988 to study potential improvements to the John F. Baldwin Ship Channel. This study, to be conducted at the now privatized Computer-Aided Operations Research Facility ship handling simulator, will consider a variety of channel and ship test configurations including varying environmental conditions and harbor approaches. San Francisco Bay pilots will participate in the project.

Fleet Management Technology

The Fleet Management Technology program continued ongoing projects in expert systems, voice response systems, and ship-to-shore data communications in this reporting period.

Among the projects completed during the year were a prototype expert system for piloting vessels in restricted waters, a customer service voice-response system for cargo shipment information, and a system for the efficient transmission of weather data to ships at sea.

The Piloting Expert System incorporates the "Rules of the Road" as well as the expert knowledge of pilots from the Sandy Hook Pilots Association. It currently includes a detailed graphical representation of New York Harbor. It is expected that the system will be used as a training device for ships officers and pilots.

The Customer Service Voice Response System provides user access via a touch-tone telephone to cargo shipment information contained in an ocean carrier's mainframe computer. The system is microcomputer based and includes hardware for speech synthesis, touch-tone decoding, terminal emulation, and micro-to-mainframe communications. The system has been designed for any application requiring access to data in a mainframe or mini-computer.

A project to develop and test techniques for transmitting a large digital weather data base to ships at sea was completed during FY 1988. The major objective was to transmit the data base accurately and economically. In order to accomplish this, the data were parameterized, compressed, and stored ready for transmission from a shoreside microcomputer via MARISAT to ships at sea. The data are being used for efficient routing of vessels.

Another project in progress during FY 1988 involved development of an expert diesel engine maintenance system being conducted with APL and MACSEA, a technology consulting company. It is expected to be completed during FY 1989.

Maritime Technology Policy

The Maritime Technology Policy program provides for the Agency's participation in the basic activities of the Marine Board and the Transportation Research Board and utilizes the technical advisory role of the National Research Council on maritime policy issues of national significance.

Technology Transfer

The Technology Transfer program provides for the development, collection, and dissemination of technological

information relevant to domestic and international water transportation, including foreign sources. In fiscal year 1988, this program included the operation of the Maritime Technical Information Facility (MTIF) located on the grounds of the U.S. Merchant Marine Academy at Kings Point, NY.

The facility promotes development, collection and dissemination of maritime technological, statistical, economic and other information. Its resources are made available to industry on a cost-reimbursable basis. Products and services include a *Maritime Abstract Journal*, available by subscription, and online searching of MARIBASE, an automated information retrieval system database. Information specialists are available to provide searching and other information services.

Chapter 7

Maritime Labor and Training

The Maritime Administration (MARAD) supports the training of merchant marine officers and supplemental training related to safety in U.S. waterborne commerce. The Agency also monitors maritime industry labor practices and policies in conjunction with national and international organizations, and promotes consonant labor relations.

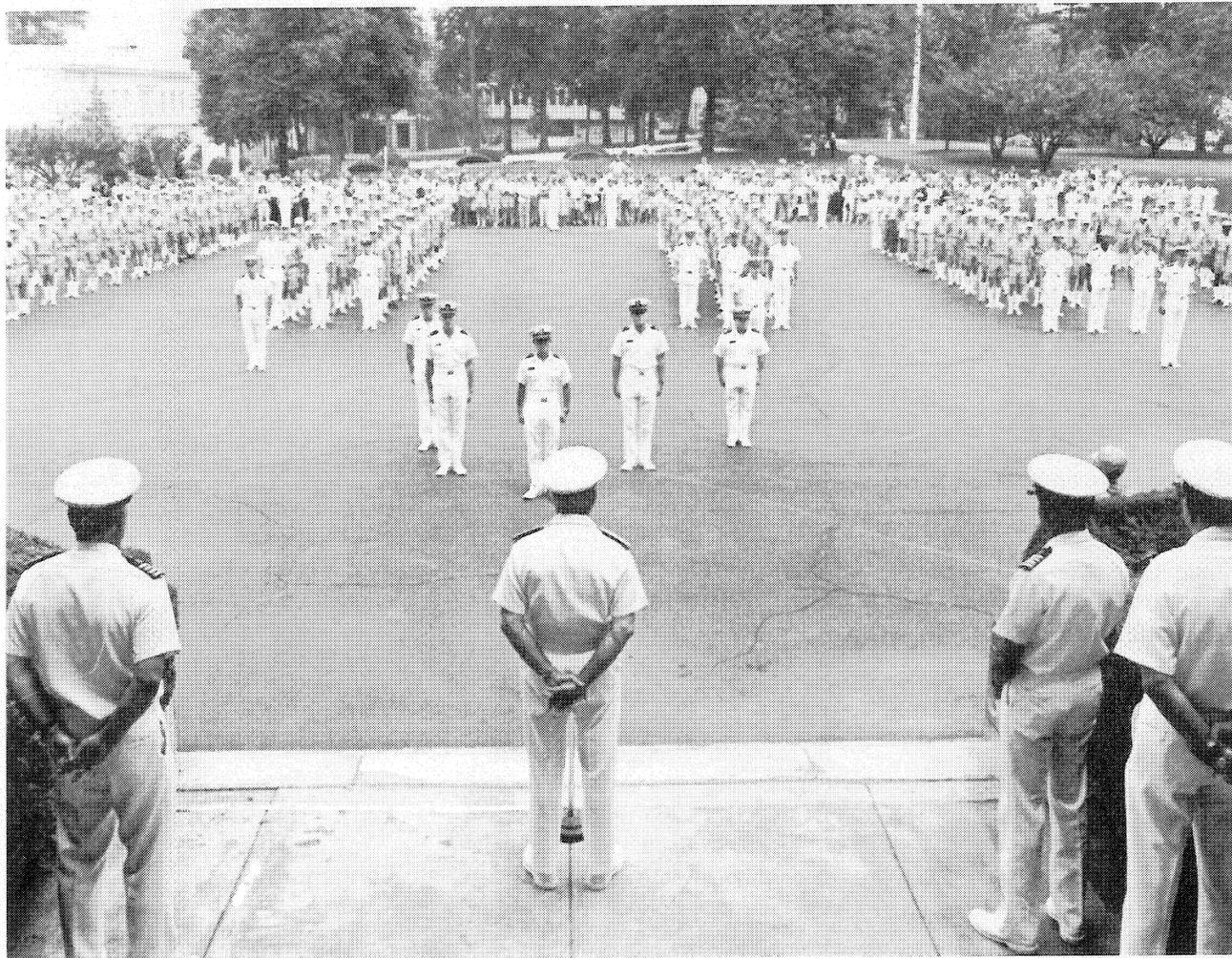
U.S. Merchant Marine Academy

MARAD operates the U.S. Merchant Marine Academy at Kings Point, NY, to train young men and women to become officers in the American merchant marine. In addition to classroom training midshipmen are required to spend a year at sea on American-flag vessels.

Graduates receive U.S. Coast Guard licenses as deck or engineering officers, or both, and Bachelor of Science degrees. U.S. citizen graduates are also obligated

to apply for, and accept commissions as ensigns in the U.S. Naval Reserve.

The Class of 1988 comprised 83 third mates, 106 third assistant engineers, and 24 graduates who completed the dual deck/engine program. There were 17 women among the graduates. Within 90 days following commencement, approximately 91 percent of the 213 graduates had already found employment in the maritime industry, aboard ship or ashore, or were serving on active duty in the U.S. military service.



"Acceptance Day" remarks by the Superintendent of Kings Point, welcoming plebes to the regiment of midshipmen.

Average enrollment at the Academy during the year was 846.

At the beginning of the 1988-89 school year, the regiment of midshipmen included 75 women, 13 of whom are scheduled to graduate in June 1989.

Members of Congress nominated 2,108 constituents for the Class of 1992. A total of 266 appointments were made in FY 1988. All classes of the Academy are under mandatory service obligation contracts to serve 5 years in the U.S. merchant marine or in maritime-related employment, maintain a Naval Reserve Commission for 8 years, and renew their 5-year U.S. Coast Guard licenses at least once after graduates.

The Academy is accredited by the Middle States Association of Colleges and Schools. The Marine Engineering Systems curriculum is accredited by the Accreditation Board of Engineering and Technology.

State Maritime Academies

MARAD provides financial assistance to six State maritime academies in accordance with the Maritime Education and Training Act of 1980 (Public Law 96-453). The legislation provides for the training of merchant marine officers to meet national objectives stated in the Merchant Marine Act, 1936, as amended.

The State academies are located at Vallejo, CA; Castine, ME; Buzzards Bay, MA; Traverse City, MI; Fort Schuyler, NY; and Galveston, TX. The six State maritime academies graduated 483 students in 1988.

In addition to U.S. Coast Guard licenses, graduates of five academies receive Bachelor of Science degrees (associate degrees are awarded by the Great Lakes Maritime Academy in Traverse City, MI). In 1988, 53 graduates accepted active duty commissions in the armed services.

After graduation, 72 percent of the graduates found employment in the maritime industry aboard ship or ashore, or were serving on active duty in the U.S. Navy or Coast Guard.

Public Law 96-453 provides for a mandatory 3-year service obligation in the U.S. merchant marine for any subsidized student as a condition to receiving annual Federal student incentive payments of \$1,200 each. Under this same law, MARAD currently provides training vessels to the five salt-water academies for use in at-sea training and shoreside laboratories.

As required by Public Law 100-202, MARAD, in collaboration with the State Academies, began development of an implementation plan for the sharing of a reduced number of training vessels. Completion of the plan is expected in FY 1989.

Supplemental Training

MARAD's supplemental training program provides classroom instruction and hands-on training in maritime firefighting, diesel engineering, and defense readiness. During this reporting period, MARAD trained 1,528 maritime personnel in ship and barge firefighting. Participants were largely U.S. seafarers, but included others concerned with maritime fire safety such as Coast Guard personnel

and port-city professional firefighters.

MARAD-sponsored basic fire-fighting training is offered at the Agency's fire school at Swanton, OH, the U.S. Navy-Military Sealift Command/MARAD fire-training facility in Earle, NJ, and the U.S. Navy fire-training installation, Treasure Island, San Francisco, CA. A fee of \$25 per student training day is charged for MARAD fire-training courses.

The Agency's Continuing Education Marine Diesel Program conducted at Kings Point, NY, provided 44 industry personnel with special courses on the operation and maintenance of diesel power plants.

MARAD renewed two contracts to maritime industry radio officer training schools to train radio officers. This program facilitates improved communications between U.S. Navy and U.S. merchant marine ships. Such communications capabilities would be vital in event of a military contingency. Concurrently, 71 shipmasters participated in the ongoing Master Mariners Readiness Training Course funded by MARAD and conducted at Kings Point. The course provides currently employed captains and their prospective replacements with instructions governing joint U.S. Navy/U.S. merchant marine operational practices and procedures.

Labor Relations

Longshore

The International Longshoremen's Association (ILA) began contract talks with

waterfront management in September 1988 to get an early start on forging a new ILA master contract to replace the current agreement which expires on September 30, 1989.

Preliminary information on the talks indicate that the ILA would like a 1-year contract which coincides with the expiration of the International Longshoremen's and Warehousemen's Union (ILWU) contract on the West Coast. The management side, which included representatives from the ports of New York and Boston, and the Carriers Container Council, proposes a 5-year contract. Management presented modifications to the master contract work rules claiming changes are required to enable ILA ports to be more competitive with non-ILA terminals. Areas targeted for negotiation include gang sizes, longer and more flexible work-hours and the 50-mile container rules with the container rules as the highest priority item.

The ILA announced its intention to find innovative ways to improve work performance, strengthen the financial position of the companies that hire its members, and bring jobs back into the union.

In August 1988, the U.S. Circuit Court of Appeals for the District of Columbia ruled that the Federal Maritime Commission (FMC) had jurisdiction over the 50-mile container rules because the rules were incorporated in carrier tariffs. The Court also supported the FMC's determination that the rules were unlawful under shipping laws. The decision is now being appealed to the U.S. Supreme Court. As a result, the ILA reopened its current master contract for negotiation covering

port employers from Maine to Texas.

On the West Coast, the International Longshoremen's and Warehousemen's Union (ILWU) contract with the Pacific Maritime Association (PMA) does not expire until July 1990. The ILWU contract contains similar container-handling rules as the East Coast ILA contract and will also be affected by the forthcoming U.S. Supreme Court decision.

At an April 1988 convention, ILWU delegates voted to reaffiliate with the AFL-CIO from which it was expelled in 1950. This move is expected to facilitate the settling of inter-union disputes. ILWU delegates to the convention also pledged to defeat all efforts to establish non-union longshore operators on the West Coast.

Also in this reporting period, the president of the ILWU suggested that the ILWU and ILA form a standing committee to meet regularly on issues of concern. Both unions feel a unified voice on labor issues which spans the Pacific, Gulf and Atlantic Coasts ports will strengthen labors' position for dealing with waterfront management.

ILA and ILWU leaders met with management representatives in Las Vegas in July 1988. This meeting opened lines of communication between longshore labor and management operating on all coasts.

Seafaring

Contracts with seafaring maritime unions are not scheduled to expire until June 1990.

In the spring of 1988, the Marine Engineers Beneficial Association (MEBA), District 1/ National Maritime Union of America (NMU), AFL-CIO, was formed by the merger of the longstanding MEBA 1 and the former NMU. MEBA District 1/NMU is the strongest district of the National Marine Engineers Beneficial Association, AFL-CIO. Chaired by its President, C.E. DeFries, and Executive Vice President, Shannon J. Wall, the district now represents 58 percent of deep sea engineer officers and 32 percent of unlicensed personnel.

The major unions representing shipboard personnel announced an "8-Point Proposal" for the next administration which outlines their recommendations for the maritime industry. The proposals include recommendations for strengthening government support of the industry, insuring a fair share of cargo, and fair treatment of U.S.-flag operators. It also recommends establishing a high level Government maritime official, preserving existing maritime laws, and attaining higher U.S. employment aboard foreign-flag cruise ships operating from U.S. ports.

Labor Data

During FY 1988, average monthly U.S. seafaring employment in all sectors (private, Government contract, and Great Lakes) decreased to 14,470, down 1.2 percent from the FY 1987 average of 14,639. (See Table 16.) The total work force in selected U.S. commercial shipyards decreased slightly from 93,939 in FY 1987 to 92,141 in FY 1988. Average longshore employment rose from 26,904 to 28,503, up 5.9 percent.

Merchant Marine Awards

Two major events occurred in FY 1988 to enhance official recognition of the wartime service of America's merchant seafarers.

On January 19, 1988, the Secretary of the Air Force determined that the service of "The American Merchant Marine in Oceangoing Service during the Period of Armed Conflict, December 7, 1941, to August 15, 1945," would be considered "active duty" under the provisions of Public Law 95-202 for the purposes of all laws administered by the Veterans Administration (VA). As a result, the U.S. Coast Guard and the Department of the Army were given primary responsibility for processing veterans' status applications for merchant mariners and awarding honorable discharges.

MARAD, in a cooperative role, issued instructional packages, processed 2,500 pieces of correspondence concerning the decision, answered hundreds of telephone inquiries from merchant mariners and their relatives, the staff of the Executive and Legislative branches of government and numerous veterans organizations.

Pursuant to Public Law 100-324, the Merchant Marine Decorations and Medals Act enacted during FY 1988, MARAD began issuing certificates of service to every merchant mariner whose service in the United States merchant marine has been determined to be active duty under Public Law 95-202. The agency will provide certificates of service to an estimated 40,000 to 80,000 individuals.

In addition to authorizing MARAD to award a certificate of service, Public Law 100-324 authorizes the Secretary of Transportation to award decorations or medals of appropriate design to members of the United States merchant marine for service in areas of conflict in support of our Armed Forces. The decorations may be of similar designs as are authorized for members of the Armed Forces of the United States for similar acts of service.

Table 16: MARITIME WORKFORCE AVERAGE MONTHLY EMPLOYMENT

	Average Monthly Employment in Fiscal Year	
	1987	1988
Seafaring Shipboard Jobs:	14,639	14,470
Shipyards¹	93,939	92,141
Production Workers	65,277	64,143
Management and Clerical	28,662	27,998
Longshore:	26,904	28,503

¹Commercial yards in the Active Shipbuilding Base, constructing new ships and/or seeking new construction orders.

Chapter 8

National Security

The Maritime Administration (MARAD) maintains the National Defense Reserve Fleet (NDRF) as a ready source of vessels for use in national emergencies and assists the U.S. maritime industry in fulfilling its traditional role as the Nation's fourth arm of defense in logistically supporting the military when needed. The Ready Reserve Force (RRF), a component of the NDRF, is composed of vessels maintained in an advanced state of readiness for swift activation.

Reserve Fleet

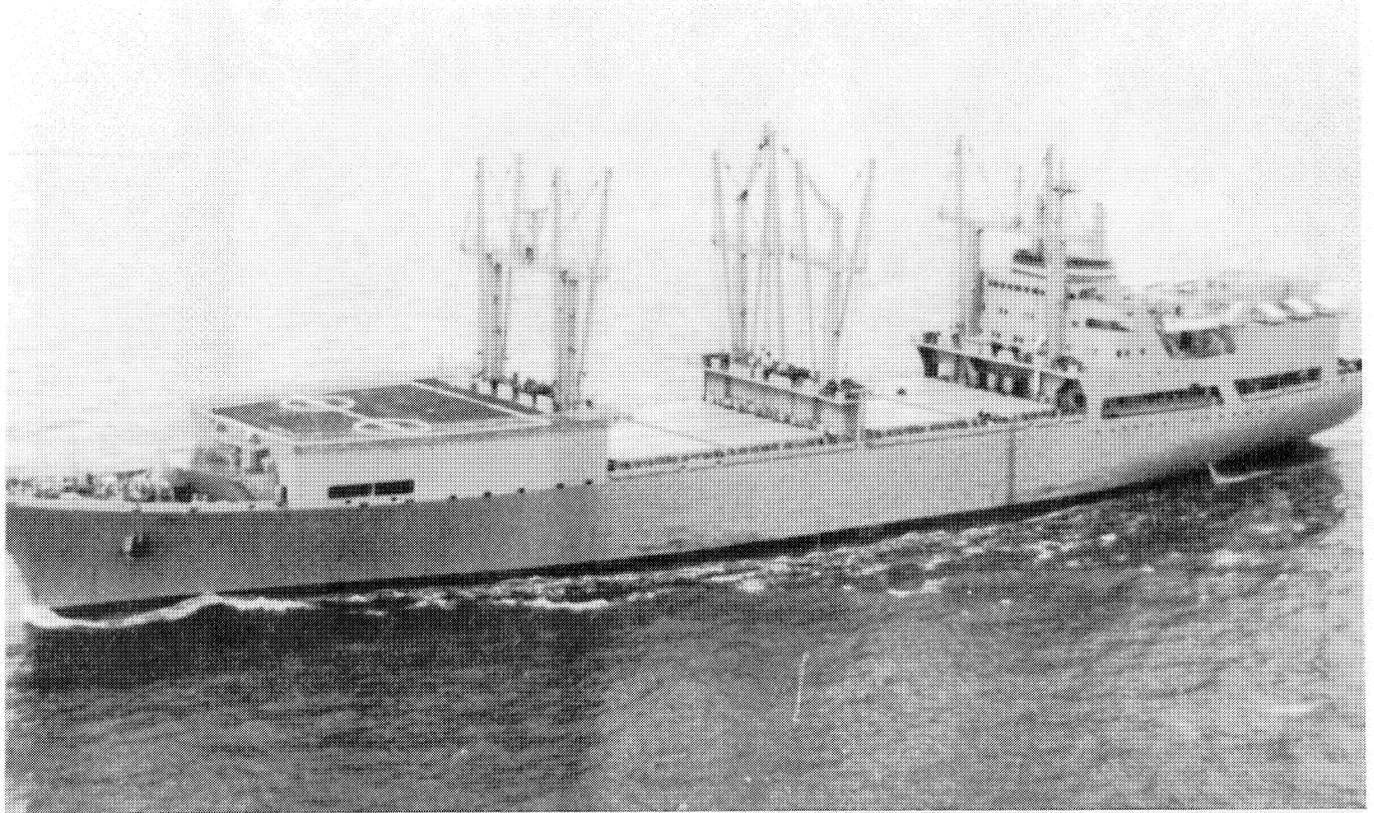
The NDRF serves as an inactive reserve of ships that would be activated to meet the shipping requirements of the United States during national emergencies. Vessels in the NDRF are available for use in both military and nonmilitary emergencies, including commercial shipping crises. Vessels in the NDRF include inactive merchant ships as well as naval auxiliaries.

As of September 30, 1988, the NDRF consisted of 320 ships assigned to three locations: James River, VA; Beaumont, TX; and Suisun Bay, CA, including 47 RRF vessels which are outported at various locations throughout the

country. (See Tables 17 and 18.) Of the 320 ships, 241 are in the Fleet Preservation Program, which involves conventional preservation, dehumidification, and cathodic protection.

Ready Reserve Force

The Ready Reserve Force (RRF) is a select component of the NDRF established by a joint Department of the Navy and MARAD Memorandum of Agreement (MOA). As required by the MOA, the RRF Program was funded by Navy and managed and administered by MARAD in FY 1988. However, RRF funding will be appropriated directly to MARAD beginning in FY 1989.



The CURTISS, shown here, is one of two vessels built to provide rapid deployment of U.S. Marine Corps fixed and rotary aircraft units.

The ships in the RRF are maintained by MARAD in a state of readiness which would allow activation in 5, 10, or 20 days to meet sealift needs in the early stages of military contingency operations. Non-RRF vessels in the NDRF would require 30 to 90 days for activation. As of September 30, 1988, the RRF consisted of 91 ships with a planned expansion to 120 ships by FY 1992.

To keep pace with the growth of the RRF, the Secretary of the Navy has approved an outporting plan whereby certain RRF vessels would be berthed at or near activation sites and expected load-out ports. On September 30, 1988, 20 ships had been outported to layberths on the East Coast; 17 ships were on the West Coast; and 7 ships on the Gulf Coast. Two vessels were outported in Japan, and one in Hawaii at year's end.

Procedures for retaining the readiness condition and operation of RRF vessels underwent a major transition from the General Agent Agreement concept to competitively awarded Ship Manager contracts in this reporting period. During the second quarter of FY 1988, MARAD awarded 10 contracts to private industry for the retention and operation of 69 RRF vessels



The T-ACS ship GOPHER STATE participated in LOGEX '88, a DOD Joint Logistical Over-the Shore exercise.

and 2 additional vessels which will be managed under the RRF program. Additional RRF vessels will be covered by Ship Manager contracts in the future.

In continuing tests of the readiness of vessels in the RRF, the Chief of Naval Operations ordered eight activations in FY 1988. These included two State school training vessels, one aviation logistics support vessel, and five RRF cargo vessels.

Also in this reporting period, MARAD activated and provided to the Department of Defense (DOD) three RRF vessels for participation in LOGEX '88: the SEABEE vessel CAPE MOHICAN, the auxiliary crane ship GOPHER STATE (T-ACS 4), and the OPDS tanker AMERICAN OSPREY. This Joint Logistical Over-the-Shore exercise was conducted off Cape Henry, VA, with both the Navy and Army participating. It involved testing of SEA-SHEDS (cargo modules that are installed in containerships to facilitate loading of military vehicles and other cargo of varied configuration), including installation prior to the exercise, the mooring of the craneship alongside a SEABEE and repeated cargo load/discharge operations of cargo into various types of lighterage. A continuous flow of cargo operations was conducted 24 hours a day from August 13-31, 1988.

The CAPE MOHICAN (SEABEE) was used extensively to test loading and discharge of various size U.S. Army vessels, and lighterage using modified SEABEE container adapter frames. The tanker AMERICAN OSPREY, converted for use as an Offshore Petroleum Discharge System ship, discharged and retrieved the Single Anchor Leg

Mooring base and buoy, successfully testing the launch and recovery system for pumping petroleum from anchor to shore (approximately two miles) through flexible hoses.

At the request of the Navy Department, MARAD installed Underway Replenishment Consolidation System features on two selected RRF vessels in FY 1988. This brings to nine the number of RRF vessels with Sealift Enhancement Features.

Also in FY 1988, MARAD at the behest of the Navy, joined a study team to assess the requirements and technology of fast sealift ships.

During FY 1988 the Naval Sea Systems Command (NAVSEA) identified two RRF Roll-On/Roll-Off (RO/RO) ships, CAPE LOBOS and CAPE LAMBERT, for conversion to special support ships. These vessels were formerly owned by FEDNAV Lakes Service, Inc.

NAVSEA requested MARAD to administer the contract to convert the ships. Design work was begun during the reporting period. After conversion, the vessel will be transferred to the Navy and operated by the Military Sealift Command. They will perform range safety and instrumentation support for live and simulated missile firing exercises test tactics and combat systems before being placed in the Navy fleet. The ships will also serve as an "aggressor" force during exercises and provide limited services such as use as a research and development platform when not needed for Navy Fleet Support.

T-AG(X) Test Platform

In early fiscal year 1988 MARAD continued an effort begun in FY 1987 at the request of NAVSEA for its T-AG(X) program and suggested several alternative vessels for conversion to an oceanographic research test platform. NAVSEA subsequently selected the MARSEA FIFTEEN, which was converted in less than a year and operated by MARAD through a General Agency Agreement.

Aerostat Project

In FY 1988, MARAD provided the U.S. Coast Guard with the M/V LIBERATOR, an offshore supply vessel, and contracted for its modification as an Aerostat Support Vessel. The vessel is being converted by the Trinity Group in Lockport, LA, under a contract with MARAD and will support a balloon-mounted radar system used for drug interdiction.

This joint project is expected to result in significant cost savings to the Government. Delivery was expected in January 1989.

Exchanges for Scrap

MARAD accepted the trade-in to the NDRF of ten vessels during fiscal year 1988 in exchange for scrap vessels under Section 510(i) of the Merchant Marine Act, 1936, as amended. The exchange transactions involved 28 traded-out NDRF vessels at a total value in excess of \$7 million above the value of the trade-in vessels.

Ship Sales

One Government-owned vessel was offered for sale to citizens and noncitizens in FY 1988 for scrapping within the United States or for nontransportation purposes. With no tenders received for scrapping in this country it was sold to a noncitizen.

In the absence of shipbreaking activity in this country, six previously granted approvals for scrapping in the United States were modified to permit resale of vessels to noncitizens for scrapping in foreign areas.

Between 1958 and 1988, a total of 2,319 vessels were sold for scrap or nontransportation purposes for a total return to the Government of \$203.3 million. Many of these vessels were sold to U.S. citizens for nontransportation use under conditions which required that the vessels ultimately be scrapped within the United States.

Fish Reef Program

Pursuant to Public Law 92-402, as amended by Public Law 98-623, ownership of the following vessels has been transferred for sinking offshore as artificial fishing reefs:

- The ex-USS VERMILLION was transferred to the State of South Carolina;
- The FS-26 was transferred to the State of North Carolina; and
- The ex-MULIPHEN was transferred to the State of Florida.

At the end of FY 1988, five states remained on the waiting list to receive vessels as they became available for the fish reef program.

War-Risk Insurance

MARAD administers the standby emergency war-risk insurance program in accordance with Title XII of the Merchant Marine Act, 1936, as amended. This authority was reinstated on July 3, 1985, by Public Law 99-59 and is effective through June 30, 1990. The program encourages the continued flow of U.S. foreign commerce during periods when commercial insurance cannot be obtained on reasonable terms and conditions for the purpose of protecting vessel operators and seamen against losses resulting from war or warlike actions.

Between 1952 and September 30, 1984, binder fees collected by MARAD totalled \$1.45 million, builder's risk insurance totalled \$2.58 million, builder's risk insurance income totalled \$3.5 million, and income earned by the investment portfolio of these funds totalled \$9.8 million.

On September 30, 1988, 1,651 vessels were covered by binders issued during the past four years. These war-risk insurance binders may cover the vessel hulls, and also provide protection and indemnity insurance. There are 263 vessels which also have second seamen's war-risk insurance coverage provided by binders. All binders would be effective for 30 days following any automatic termination of commercial insurance.

War-risk insurance binders issued under Public Law 99-59, have generated \$87,275 in binder fees. During the fiscal year, \$4,515,029 has been generated in investment income. Since the most recent reinstatement of the statutory authority, the war-risk

revolving fund assets have increased to approximately \$17.8 million as of September 30, 1988.

No binders or policies related to MARAD's standby war-risk cargo insurance and builder's risk insurance programs have been issued under the reinstatement authority. However, 16 commercial underwriting agents were under standby contracts for the war-risk cargo insurance program.

Effective April 13, 1988, MARAD amended the war-risk insurance regulation to allow certain vessels registered in the Bahamas to become eligible to apply for war-risk insurance.

Marine Insurance

MARAD continued its role as claim agent for Government-owned vessels in fiscal year 1988. As of September 30, 1988, there were ten protection and indemnity claims outstanding; four were in litigation. Total settlement value of all cases was estimated to be \$300,000.

MARAD assures that contract requirements are met on all insurance placed in commercial markets by mortgagors of vessels on which the Government guarantees, insures, or holds mortgages; by charterers of Government-owned vessels; by charterers of Government-owned vessels; and by subsidized operators.

Table 19 shows marine and war-risk insurance approved in FY 1988.

MARAD issued a new regulation, effective July 20, 1988, concerning the placement of

marine hull insurance on subsidized and Title XI program vessels. The new rule eliminates the requirement that 75 percent of the required hull insurance be placed in the American market and provides for the approval of certain additional foreign underwriters to write hull insurance on MARAD program vessels. This regulation affords shipowners wider opportunity to obtain hull coverage from sound underwriters with minimal regulatory constraints.

officers for U.S.-flag merchant vessels in this area of the world. Additionally, as a result of hostile acts by Iran, MARAD briefed the masters of reflagged Kuwaiti tankers and naval liaison officers on operations in the Persian Gulf. It also assisted U.S.-flag operators sailing into the Gulf region on operational liaison matters with U.S. Navy forces.

initiated, with the Commander-in-Chief Pacific Fleet, a joint communications test with over 130 merchant ships in the Pacific and Indian Oceans. This test exercised implementation of the Allied Merchant Ship Communication system.

Numerous MARAD Advisories and miscellaneous notices were issued in FY 1988 involving such diverse areas as reporting of hostile incidents toward merchant ships and naval control of shipping exercises.

Emergency Operations

Attacks on merchant shipping in the Persian Gulf continued to plague the global shipping community during much of FY 1988. MARAD assisted the U.S. Navy by providing operating and communications instructions to the masters and naval liaison

In FY 1988, MARAD participated in several projects dealing with merchant vessel emergency operational communications. In a joint project with the Navy and the Defense Mapping Agency, a procedural doctrine was established for emergency call-up procedures between U.S. merchant ships and units of the Navy for protection and assistance. During the Naval Control of Shipping exercise, EXPANDED SEA 88, MARAD

Port Emergency Operations

During FY 88, MARAD carried out the following preparations for the operation of U.S. ports in emergencies which threaten national security.

Completed Projects	Description
Federal Port Controllers (FPC)	Completed nine FPC contracts with ports that will be involved in cargo movements during a national emergency.
National Port Readiness	Chaired meetings of the National Port Readiness Steering and Working Groups comprised of representatives of MARAD, Military Traffic Management Command (MTMC), Military Sealift Command (MSC), U.S. Coast Guard (USCG), U.S. Army Corps of Engineers (USACE), and Naval Control of Shipping Organization (NCSORG) per the Interagency Memorandum of Understanding (MOU) on Port Readiness.
Port Data Systems Study	Completed a study for the National Port Readiness Steering Group which examined the port data systems maintained or used by the six-member organizations of the Steering Group.

Container Requirements Study

Assisted the MTMC in the development of its Container Requirements and Availability Study and provided comments on the scope of work and source of data and furnished container statistics.

Emergency Port Facility Database

Provided the Department of Transportation's Office of Emergency Transportation with an updated version of MARAD's port facility database for use in DOT's Emergency Transportation Database. Developed a new series of report formats that will display key attributes of U.S. marine terminals.

Emergency Training

Developed and coordinated a series of regional training seminars for port emergency planning and operations personnel, including MARAD Federal Port Controllers, in conjunction with the National Port Readiness Working Group. The seminars were held in Washington, DC, New Orleans, LA, Los Angeles, and Oakland, CA.

Federal Port Controller Information System

Completed the first phase report on an automated Federal Port Controller Management Information System to organize emergency information.

Ongoing Projects

Description

Federal Port Controller Contracts

Continued negotiations with U.S. port authorities expected to be under FPC contracts. By the end of FY 1989, all necessary ports are expected to have contracted with MARAD's National Shipping Authority to serve as agents for the Government in the event a declared emergency would require a Federal port network.

Port Readiness Steering Group Support

Provided research and secretariat support to the National Port Readiness Steering Group.

Port Defense Executive Reserve

Developed a program to obtain National Defense Executive Reserve membership for FPC.

Contingency Response

Participated as a member of the MTMC's National Contingency Response (CORE) team, to promote military mobilization and defense preparedness planning.

Table 17: NATIONAL DEFENSE RESERVE FLEET--SEPTEMBER 30, 1988

Fleet Sites	Retention ¹	Scrap Candidates	Special Programs	Totals
James River, VA	97	8	13	118
Beaumont, TX	66	4	47	117
Suisun Bay, CA	78	0	7	85
Totals:	241	12	67	320

¹ Includes vessels maintained for emergency activation under the Fleet Preservation Program, including RRF. Also includes RRF vessels located at various outports.

Table 18: NATIONAL DEFENSE RESERVE FLEET, 1945 - 1988

Fiscal Year	Ships	Fiscal Year	Ships
1945	5	1967	1152
1946	1421	1968	1062
1947	1204	1969	1017
1948	1675	1970	1027
1949	1934	1971	860
1950	2277	1972	673
1951	1767	1973	541
1952	1853	1974	487
1953	1932	1975	419
1954	2067	1976	348
1955	2068	1977	333
1956	2061	1978	306
1957	1889	1979	317
1958	2074	1980	303
1959	2060	1981	317
1960	2000	1982	303
1961	1923	1983	304
1962	1862	1984	386
1963	1819	1985	300
1964	1739	1986	299
1965	1594	1987	326
1966	1327	1988	320 ¹

¹As of September 30, 1988, includes 55 vessels which are not merchant ships and/or which are below 1,000 gross tons.

Table 19: MARINE AND WAR-RISK INSURANCE APPROVED IN FY 1988

Kind of Insurance	Total Amount	Percentage	
		American	Foreign
Marine Hull & Machinery	\$6,641,578,103	50	50
Marine Protection and Indemnity ¹			
War-Risk Hull and Machinery	4,600,524,543	43	57
War-Risk Protection	4,600,524,543	43	57

¹ Protection and indemnity insurance coverage is obtained principally from assessable mutual associations managed in the British market and is unlimited, thereby making it impossible to arrive at the total amount or percentage figures for American and foreign participation.

Chapter 9

International Activities

During fiscal year 1988, the Maritime Administration (MARAD) continued its efforts to obtain equitable treatment for U.S.-flag carriers' participation in world trade. The Agency conducted bilateral discussions with the Soviet Union, China, Japan, Taiwan, Korea and Peru, and took part in several multilateral conferences.

Administrator's Mission to Asia

The Maritime Administrator headed an interagency delegation to Japan, China and Korea in April and May 1988 to continue efforts to eliminate restrictive practices that burden U.S. carrier operations. In discussions with senior officials in Japan, the U.S. delegation learned of expanded use of "high cube" containers and of substantial progress being made to open Japanese ports for Sunday cargo handling. Resolution of the latter issue was announced shortly after the delegation left Japan.

In China, the U.S. mission discussed prospects for reopening negotiations on a maritime agreement.

In Korea, the group reviewed the progress made in removing of restrictions on U.S. carriers. The U.S. group also visited the port of Pusan to stress the importance to U.S. carriers of future port development in Korea.

Maritime Discussions with Taiwan and Korea

MARAD led an interagency working team that held discussions in Taiwan and Korea in November 1987 on local restrictions on U.S. carrier operations. The talks in Taiwan led to a subsequent agreement that removed many of these constraints.

Maritime Negotiations with the Soviet Union

In October 1987 and March 1988, the Maritime Administrator headed an interagency delegation that held negotiations in Moscow and Washington, respectively, on a bilateral maritime agreement. Discussions dealt with cargo carriage and port access, as well as other issues. The discussions had not resulted in a new agreement by the end of the reporting period.

Organization for Economic Cooperation and Development (OECD)

Throughout fiscal year 1988, MARAD was part of the U.S. delegation to the regularly scheduled meetings of the OECD's Maritime Transport Committee (MTC), and its subordinate body, the Special Group on International Organizations. The Agency participated in meetings of the Joint Working Group of the MTC and the Committee on Capital Movements and Invisible Transactions. Principal subjects discussed at these meetings

included member country shipping policies and formulation of unified developed-country positions for the United Nations Liner Code Review Conference.

UNCTAD Committee on Shipping

In March 1988, MARAD participated on the U.S. delegation participating in the 13th session of the Committee on Shipping of the United Nations Conference on Trade and Development (UNCTAD). The committee meets biennially to address a broad range of shipping issues. At this session it also briefly considered shipbuilding.

Consultative Shipping Group

In November 1987, MARAD was part of a U.S. delegation that met with the Consultative Shipping Group (CSG) in Washington. The CSG consists of government representatives of the principal European maritime nations and Japan. The meeting was devoted to wide-ranging discussions of common problems faced by U.S. and CSG carriers, including third country practices to restrict carriers' access to cargoes and implementation of the European Community's common shipping policy regulations.

MARAD also provided technical support for the United States-Canada Consultative Shipping Group in their discussions of the U.S. Great Lakes Pilotage Study. Field staff provided industry comments and

specific examples of pilotage and longshoreman labor disputes affecting Great Lakes ship operations.

Other International Activities

During FY 1988, MARAD provided technical assistance to foreign organizations in port

planning and operations. For example, in cooperation with the International Maritime Organizations's World Maritime University, the Agency provided training at its offices and U.S. ports for two port representatives from Indonesia and Malaysia who were studying port operations and management. MARAD also served as chairman of the U.S.

Delegation to the General Assembly of the Permanent International Commission of the Permanent International Association of Navigation Congresses, held in Szczeczn, Poland. The Agency also continued liaison work with national and international organizations that provide technical assistance and training related to the Caribbean Basin Initiative.

Chapter 10

Administration

The administrative actions taken in support of the mission and programs of the Maritime Administration (MARAD) in fiscal year 1988 are summarized below.

Maritime Subsidy Board

The Maritime Subsidy Board (MSB), by delegation from the Secretary of Transportation, principally awards, amends, and terminates contracts subsidizing the construction and operation of U.S.-flag vessels in the foreign commerce of the United States. To perform its functions, the MSB holds public hearings, conducts fact-finding investigations, and compiles and analyzes trade statistics and cost data. MSB decisions, opinions, orders, rulings, and reports are final unless the Secretary of Transportation undertakes reviews of these actions.

The MSB is composed of the Maritime Administrator, who acts as Chairman of the Board, the Deputy Administrator, and the Agency's Chief Counsel. The Secretary of MARAD and the MSB acts as an alternate member in the absence of any one of the three permanent Board members.

The MSB met 42 times in FY 1988. It considered and acted on 77 items and issued 19 formal opinions, rulings, and orders. The Agency published 66 notices in the *Federal Register* relating to required statutory hearings and the development and adoption of rules and regulations in the

implementation of the Merchant Marine Act, 1936, as amended. The Secretary of MARAD, as Freedom of Information Officer, received and processed approximately 293 Freedom of Information Act requests.

During FY 1988, the MSB took a number of administrative actions to help strengthen the U.S. Merchant Marine. Service expansions were approved for several subsidized U.S.-flag operators adding trading flexibility for these operators. Lykes Bros. Steamship Co., Inc. was given approval to expand its services to include the East Coast of South America and the North Coast of Columbia and Venezuela. Farrell Lines, Inc. was given approval to increase the scope of its service from the South Atlantic to North Africa.

Also in this reporting period, American President Lines, Ltd. (APL) was given approval to accept delivery of five C9-M-F150 vessels pursuant to section 615 of the Merchant Marine Act, 1936. Use of the foreign building privilege of section 615 has enabled APL to introduce new competitive replacement vessels into service.

The construction-differential subsidy program has not been funded since 1981 and the MSB was not involved in construction subsidy decisions in FY 1988.

Legal Services, Legislation and Litigation

The Agency's Chief Counsel provides assistance on Department level legal issues which relate to MARAD programs. It also

provides legal support services for the contracting, procurement, and personnel activities conducted by MARAD Headquarters, regional offices, and the U.S. Merchant Marine Academy.

Litigation support is provided to the Department of Justice in admiralty and maritime cases arising from the operation and administration of MARAD's past and present programs. For example, extensive historical documentation is required to resolve the thousands of asbestos injury claims related to shipyard and shipboard asbestos exposure during World War II. Most recently, the surge of bankruptcies and Title XI defaults in various sectors of the maritime industry has generated increased litigation to protect the Government's interests in foreclosure proceedings.

Legislative efforts in FY 1988 were focused on building a consensus within the industry on how best to revise the liner operating-differential subsidy (ODS) program. Progress was made on clarifying and codifying statutory provisions for ship mortgages and vessel liens and the Congress did confirm MARAD's role in maintaining the Ready Reserve Force (RRF) component of the National Defense Reserve Fleet (NDRF). The Department was influential in the decision to exclude marine transportation services from the legislation to implement the free trade agreement with Canada.

The longstanding dispute involving repaying construction-differential subsidy (CDS) on tankers to permit them to engage in the domestic transportation of Alaskan oil was addressed in another formal rulemaking. It

again was challenged in the courts and found to be an insufficient basis by which to allow the lump sum repayment of CDS. A separate challenge to the transferability of foreign building rights under the interim provisions of section 615 of the Merchant Marine Act has introduced a similar uncertainty over the continuing validity of several past transactions involving the construction and acquisition of liner vessels abroad by ODS operators.

Regulatory initiatives included the publication of revised rules on the eligibility of foreign underwriters to provide hull insurance and the refinement of procedures for the evaluation of bids for the bulk carriage of preference cargoes.

Management Initiatives

MARAD made several organizational changes in fiscal year 1988. The shipbuilding, ship operations, research and development, marketing, and domestic enterprise activities were restructured. The previous position of Associate Administrator for Shipbuilding, Operations, and Research was redesignated as Associate Administrator for Shipbuilding and Ship Operations. The Office of Naval Architecture and Engineering and the Office of Shipbuilding Costs and Production were combined into a new Office of Ship Construction.

The Office of Advanced Ship Development and Technology and the Office of Advanced Ship Operations were combined and redesignated as a new Office of Technology Assessment. This newly created office reports to the Associate Administrator for

Marketing (formerly the Associate Administrator for Marketing and Domestic Enterprise).

These changes streamline MARAD's shipbuilding activities, simplify coordination and control of the affected activities, and strengthen MARAD's technology transfer and assessment activities.

A new Office of National Security Plans also was created. This office reports to the Associate Administrator for Policy and International Affairs and coordinates MARAD's national security planning activities. This reorganization permits MARAD to manage more effectively its diverse responsibilities in national and international military and civil mobilization and emergency operations.

MARAD's East Coast field activities also were reorganized in fiscal year 1988. The Eastern Region, headquartered in New York City, was redesignated the North Atlantic Region with no accompanying change in functions. A new region, the South Atlantic Region, headquartered in Norfolk, VA, was created within the old geographical boundaries of the former Eastern Region. It is responsible for among other things, all MARAD ship operations activities (including the RRF) on the East Coast. The Division of East Coast Ship Operations was abolished.

The change was prompted by the formal assignment to MARAD of full funding and program management responsibility for the RRF. This reorganization permitted MARAD to manage more effectively the expanding RRF program. It also enabled the headquarters staff to devote its attention to national program development and oversight

activities while providing for program accomplishment at the local level.

Audits

During FY 1988, the Department of Transportation's Office of Inspector General submitted the following final principal internal audit reports to MARAD:

- o Report on Audit of Operating-Differential Subsidy Rate Calculations.*
- o Report on Audit of Nonappropriated Fund Instrumentalities at the U.S. Merchant Marine Academy.*
- o Report on Audit of MARAD Contract Closeout Process.*
- o Report on Audit of Costs for Management Information System for the Ready Reserve Force.*
- o Report on Audit of Custodial Management of Repossessed Title XI Vessels and Rigs - MARAD Central Region.*
- o Report on Audit of DOT's Implementation of the Federal Manager's Financial Integrity Act.*
- o Report on Audit of Contract Administration.*
- o Report on Audit of Controls Over Consulting Services.*
- o Report on Audit Followup of the Maritime Administration's Implementation of the Prompt Payment Act.*
- o Report on Audit of User Charges.*

The U.S. Coast Guard also conducted a quality assurance review of the medical facilities and services at the U.S. Merchant Marine Academy's Patten Infirmary in this reporting period.

Information Management

The use of information resource management technology significantly expanded in FY 1988 to meet MARAD's need for increased information and information-processing capabilities. The number of microcomputer terminals in the office automation system was increased. Every Agency program and administrative office including regional offices, NDRFs, and the Merchant Marine Academy, now have MS-DOS based microcomputer work stations. Functions and capabilities of the microcomputers are being expanded to permit interoffice connection to form local and wide-area networks.

Enhancements to the minicomputer in the Operations Center have provided increased security measures for various Agency programs.

Initiatives to support the Ready Reserve Force include implementation of a shipboard spare parts inventory system and an automated contract system to assist in RRF procurement activities.

Personnel

MARAD employment totaled 1,068 at the end of FY 1988. The percentage of MARAD's female and minority employees and their representation in supervisory positions remained relatively stable

during the period, as did the percentage of handicapped employees.

Eighteen MARAD employees received high honors in FY 1988. Three Silver Medals, ten Bronze Medals, and five Secretary's Awards for Excellence were approved. Agency employees received 53 quality step increases and 102 special achievement awards in this reporting period.

Safety Program

Asbestos Control

During the year, the Agency continued its action plan for the prevention of asbestos exposures and uses in MARAD programs. MARAD policy is to prohibit or stringently limit personnel exposure to airborne asbestos fibers.

The Action Plan is geared to the elimination of asbestos materials from MARAD programs. It encompasses the repair or replacement of such materials already installed, modified work procedures, and employee training.

MARAD's Asbestos Medical Surveillance Program provides preplacement, periodic, and pre-separation medical examinations to designated MARAD employees exposed or potentially exposed to hazardous substances or conditions. Employees assigned to MARAD headquarters, the Beaumont, James River, and Suisun Bay NDRFs, the South Atlantic, North Atlantic, Central, and Western Region Offices, and the U.S. Merchant Marine Academy, Kings Point, NY, were provided occupational medical examinations.

Training Library

MARAD established during the year a safety and health training library of videotapes pertaining to general safe work practices, industrial hygiene, supervisory safety training, and construction and marine firefighting training. These safety and health videotapes are available for use by all MARAD facilities.

Installations and Logistics

Real Property

On September 30, 1988, MARAD's real property included NDRF sites at Suisun Bay, CA, Beaumont, TX, and James River, VA; a warehouse at Kearny, NJ; and the U.S. Merchant Marine Academy at Kings Point, NY.

The Kearny, NJ, warehouse was previously declared excess property and its disposal by the General Services Administration was pending at the end of this reporting period.

Facilities for training maritime firefighters were operated at Earle, NJ, and Treasure Island, CA, under MARAD agreements with the U.S. Navy, and in New Orleans, LA. MARAD operates the Toledo, OH, marine fire training facility under agreement with Delgado College.

Regional headquarters offices were maintained in New York, NY, Norfolk, VA, New Orleans, LA, Chicago, IL, and San Francisco, CA. Maritime Development Offices were maintained in Long Beach, CA, Seattle, WA, Houston, TX,



The containership SEA-LAND PERFORMANCE, shown here, is being loaded at the Port of Houston.

Portland, OR, and at the five regional headquarters. In addition to those located at Region Headquarters offices, Ship Management offices were maintained in New York, NY, Cleveland, OH, and Port Arthur, TX.

During FY 1988, Marine Safety International of New York, NY, continued to manage and operate the Agency's Computer-Aided Operations Research Facility at Kings Point, NY, under a cooperative agreement.

Accounting

MARAD's accounts are maintained on an accrual basis in conformity with generally accepted principles and standards, and related requirements prescribed by the Comptroller General.

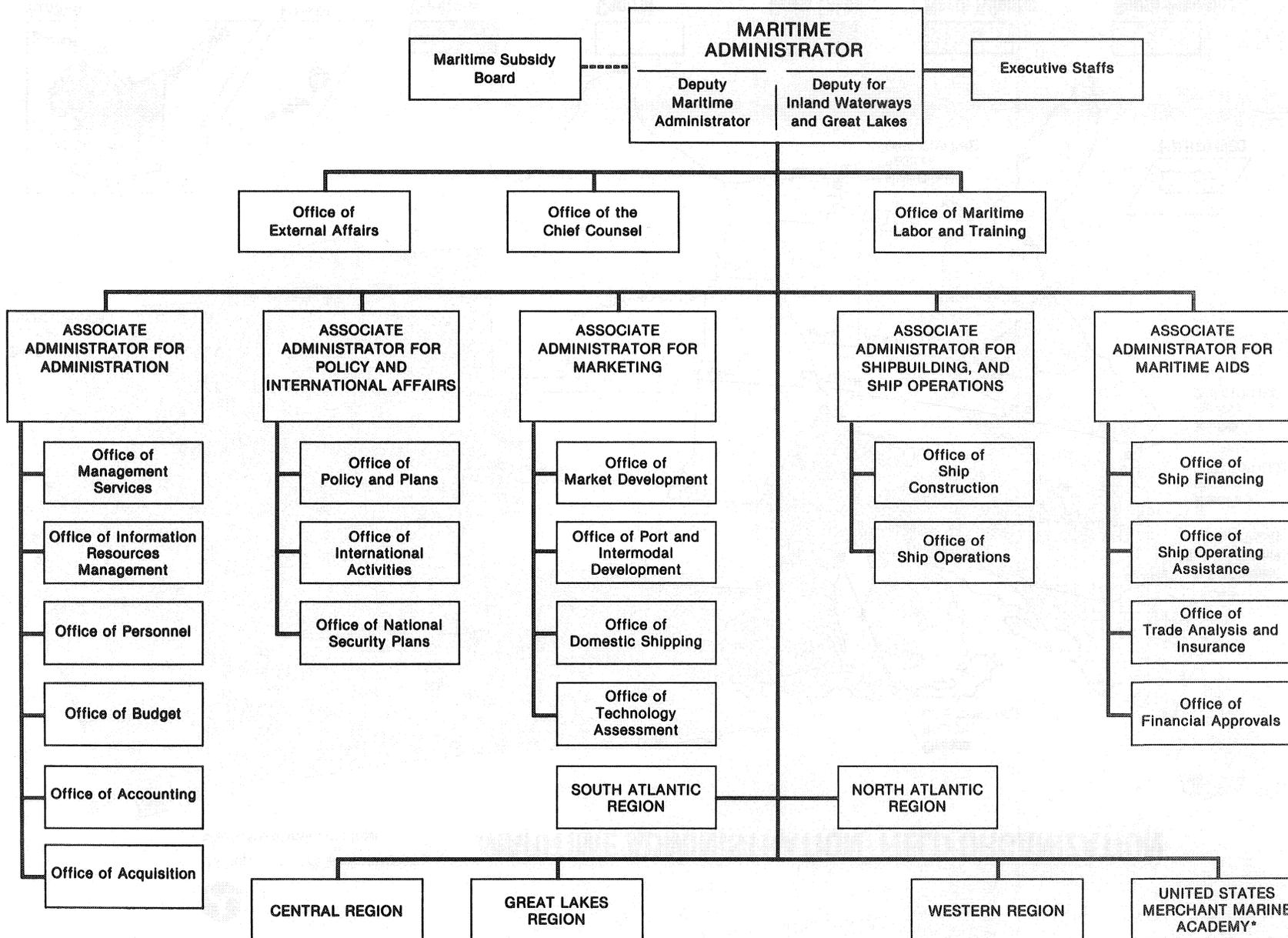
The cost of MARAD's combined operations for the year totaled \$605 million. This included \$263.2 million in operating-differential subsidies, construction-differential subsidies,

and ocean freight differential subsidies. It also included \$31.9 million for administrative expenses, \$17 million for maintenance and preservation of reserve fleet vessels, and \$7.9 million for financial assistance to State Maritime Academies.

MARAD incurred \$284.1 million in other operating expenses, net of income.

Financial statements of MARAD appear as Exhibits 1 and 2.

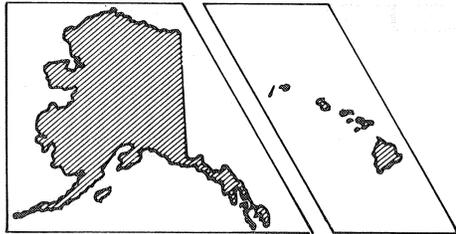
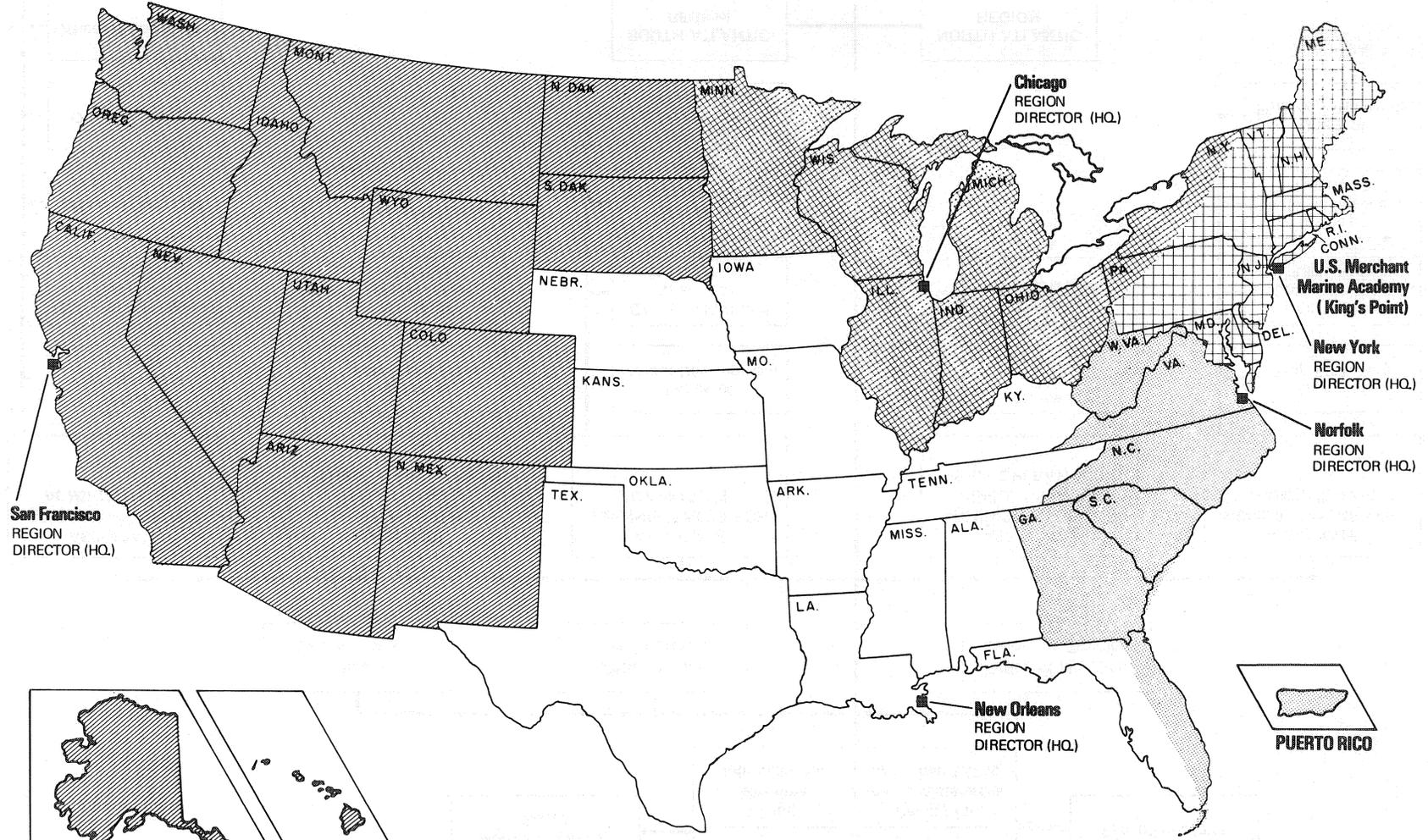
MARITIME ADMINISTRATION





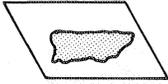
U.S. Department of Transportation
Maritime Administration

MARITIME ADMINISTRATION FIELD ORGANIZATION



ALASKA

HAWAII



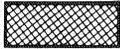
PUERTO RICO



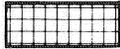
Western Region



Central Region



Great Lakes Region



North Atlantic Region



South Atlantic Region

WWW.MARITIMEADMINISTRATION.DOT.GOV

FINANCIAL STATEMENTS

U.S. Department of Transportation--Maritime Administration

Exhibit 1. Statement of Financial Condition

September 30, 1987, and September 30, 1988

ASSETS	September 30	
	1988	1987
Selected Current Assets		
Funded Balances with Treasury:		
Budget Funds	\$ 236,402,633	\$ 146,794,518
Deposit Funds	561,048	560,340
Allocations from Other Agencies	-	-
Budget Clearing Accounts	4,472	50,227
	<u>236,968,153</u>	<u>147,405,085</u>
Federal Security Holdings	15,455,000	14,755,000
Accounts Receivable:		
Government Agencies	86,672,769	156,081,540
The Public	41,474,526	33,394,576
Allowances (-)	(3,085,012)	(7,810,278)
	<u>125,062,283</u>	<u>181,665,838</u>
Advances To:		
The Public	249,894	198,903
	<u>249,894</u>	<u>298,904</u>
Total Selected Current Assets	\$ 377,735,330	\$ 344,024,826
Loans Receivable:		
Repayment in Dollars	1,294,446,636	1,611,621,243
Allowances (-)	(804,942,842)	(1,049,628,830)
	<u>484,503,794</u>	<u>561,992,413</u>
Inventories:		
Raw Materials and Supplies	-	4,519,188
Real Property and Equipment:		
Land	7,749,000	7,591,124
Structures and Facilities	230,316,585	218,014,461
Equipment and Vessels	1,303,023,997	1,538,904,721
Leasehold Improvements	172,175	168,335
Allowances (-)	(1,184,838,047)	(1,259,207,338)
	<u>356,423,710</u>	<u>505,471,303</u>
Other Assets:		
Works-in-Process--Other	18,969,491	18,969,471
Material and Supplies	1,034,000	3,440,187
	<u>20,003,471</u>	<u>22,409,658</u>
Total Assets	\$1,243,666,305	\$1,438,417,388

The Notes to Financial Statements are an integral part of this statement.

FINANCIAL STATEMENTS

U.S. Department of Transportation--Maritime Administration

September 30

LIABILITIES	1988	1987
<hr/>		
Selected Current Liabilities (Note 2)		
Accounts Payable (Including Funded Accrued Liabilities):		
Government Agencies	\$ 28,234,975	\$ 5,252,266
The Public	<u>64,496,914</u>	<u>52,332,274</u>
	89,731,189	57,584,540
Total Selected Current Liabilities	89,731,189	57,584,540
Deposit Fund Liabilities	561,048	560,340
Unfunded Liabilities:		
Accrued Annual Leave	2,311,170	7,923,826
Debt issued under Borrowing Authority:		
Borrowing from Treasury	515,000,000	420,000,000
Other Liabilities:		
Vessel Trade-in Allowance and Other Accrued Liabilities	<u>5,925,729</u>	<u>31,611,129</u>
Total Liabilities	<u>\$ 613,529,836</u>	<u>\$ 517,679,835</u>
Government Equity		
Unexpended Budget Authority:		
Unobligated	285,046,785	111,688,858
Undelivered Orders	<u>2,158,958,684</u>	<u>2,468,210,498</u>
	2,444,005,469	2,579,899,356
Unfinanced Budget Authority (-)		
Unfilled Customer Orders	(130,952,389)	(57,263,901)
Contract Authority	<u>(2,044,362,000)</u>	<u>(2,260,186,626)</u>
	(2,175,314,389)	(2,317,450,527)
Invested Capital	<u>361,445,389</u>	<u>658,288,724</u>
Total Government Equity	<u>\$ 630,136,469</u>	<u>\$ 920,737,553</u>
Total Liabilities and Government Equity	\$1,243,666,305	\$1,438,417,388

The Notes to Financial Statements are an integral part of this statement.

FINANCIAL STATEMENTS

U.S. Department of Transportation--Maritime Administration

Exhibit 2. Statement of Operations**Years Ended September 30**

	<u>1988</u>	<u>1987</u>
OPERATIONS OF THE MARITIME ADMINISTRATION		
Net Costs of Operating Activities		
Reserve Fleet:		
Maintenance and Preservation	<u>\$ 17,927,657</u>	<u>\$ 6,776,000</u>
Direct Subsidies and National Defense Costs		
Operating-Differential ies	221,368,940	228,285,103
Construction-Differential	1,252,220	310,225
Ocean Freight Differential	<u>40,605,435</u>	<u>24,337,626</u>
	<u>263,226,625</u>	<u>252,932,954</u>
Administrative	31,387,512	43,510,799
Research and Development	466,894	71,590,880
Financial Assistance to State Marine Schools	<u>7,961,000</u>	<u>12,073,000</u>
	<u>40,302,406</u>	<u>63,174,679</u>
Other Operating Income Net of Expenses	<u>(144,476)</u>	<u>2,072,695</u>
Net Cost of Maritime Administration Operations	<u>\$321,312,212</u>	<u>\$324,956,328</u>
OPERATIONS OF REVOLVING FUNDS (-Income):		
Vessel Operations Revolving Fund	88,717,396	(14,405,127)
War-Risk Revolving Fund	(111,537)	(1,725,384)
Federal Ship Financing Fund	<u>195,070,357</u>	<u>233,552,062</u>
	<u>283,676,216</u>	<u>217,421,551</u>
Net Cost of Combined Operations	<u>\$604,988,428</u>	<u>\$542,377,879</u>

The Notes to Financial Statements are an integral part of this statement.

U.S. DEPARTMENT OF TRANSPORTATION - MARITIME ADMINISTRATION

Notes to Financial Statements - September 30, 1988, and September 30, 1987.

1. The preceding financial statements include the assets, liabilities, income, and expenses of the Maritime Administration; the Vessel Operations Revolving Fund; the War-Risk Insurance Revolving Fund; and the Federal Ship Financing Fund.

2. The Maritime Administration was contingently liable under agreements guaranteeing obligations or insuring mortgages and construction loans payable to holders or lenders totaling \$3,863,993,195 on September 30, 1988, and \$4,278,971,066 on September 30, 1987. Commitments to guarantee additional obligations amounted to \$8,962,000 on September 30, 1988, and \$8,962,000 on September 30, 1987. The Agency estimates that \$200,000,000 in guaranteed loan losses will be incurred during the fiscal year ending September 30, 1989. U.S.

Government securities and cash of \$359,825 on September 30, 1988, and \$2,212,646 on September 30, 1987, were held in escrow by the Government in connection with the guarantee of obligations or the insurance of loans and mortgages which were financed by the sale of bonds in the securities market. There were no conditional liabilities for prelaunching War-Risk Builder's Insurance on September 30, 1988.

3. On September 30, 1988, the U.S. Government securities which had been accepted from vessel owners, charterers, subsidized operators, and other contractors as collateral for their performance under contracts amounted to \$180,000.

4. The Federal Ship Financing Fund, a revolving fund, is not currently self-supporting. This has necessitated borrowings from the U.S. Department of the Treasury totaling \$95

million on September 30, 1988, and \$420 million on September 30, 1987. No supplemental appropriation was received in fiscal year 1988.

5. The Maritime Administration wrote off loans receivable of \$358,680,415 for the Title XI Program during fiscal year 1988.

6. The Maritime Administration has adjusted its liabilities to \$2,044,362,000 recognizing the estimated total of the contractual liability outstanding on the current Operating Differential Subsidy contracts.

The Maritime Administration also incurred \$8,068,940 in additional liabilities resulting from finalization of voyages not previously recognized as contractual liabilities.

Appendix I: MARITIME SUBSIDY OUTLAYS--1936-1988

Fiscal Year	CDS	Reconstruction CDS	CDS	ODS	Total ODS & CDS
1936-1955	\$ 248,320,942 *	\$ 3,286,888	\$ 251,607,830	\$ 341,109,987	\$ 592,717,817
1956-1960	129,806,005	34,881,409	164,687,414	644,115,146	808,802,560
1961	100,145,654	1,215,432	101,361,086	150,142,575	251,503,661
1962	134,552,647	4,160,591	138,713,238	181,918,756	320,631,994
1963	89,235,895	4,181,314	93,417,209	220,676,685	314,093,894
1964	76,608,323	1,665,087	78,273,410	203,036,844	281,310,254
1965	86,096,872	38,138	86,135,010	213,334,409	299,469,419
1966	69,446,510	2,571,566	72,018,076	186,628,357	258,646,433
1967	80,155,452	932,114	81,087,566	175,631,860	256,719,426
1968	95,989,586	96,707	96,086,293	200,129,670	296,215,963
1969	93,952,849	57,329	94,010,178	194,702,569	288,712,747
1970	73,528,904	21,723,343	95,252,247	205,731,711	300,983,958
1971	107,637,353	27,450,968	135,088,321	268,021,097	403,109,418
1972	111,950,403	29,748,076	141,698,479	235,666,830	377,365,310
1973	168,183,937	17,384,604	185,568,541	226,710,926	412,279,467
1974	185,060,501	13,844,951	198,905,452	257,919,080	456,824,532
1975	237,895,092	1,900,571	239,795,663	243,152,340	482,948,003
1976**	233,826,424	9,886,024	243,712,448	386,433,994	630,146,442
1977	203,479,571	15,052,072	218,531,643	343,875,521	562,407,164
1978	148,690,842	7,318,705	156,009,547	303,193,575	459,203,122
1979	198,518,437	2,258,492	200,776,929	300,521,683	501,298,612
1980	262,727,122	2,352,744	265,079,866	341,368,236	606,448,102
1981	196,446,211	11,666,978	208,113,192	334,853,670	542,966,862
1982	140,774,519	43,710,698	184,485,217	400,689,713	585,174,930
1983	76,991,138	7,519,881	84,511,019	368,194,331	452,705,350
1984	13,694,523	-0-	13,694,523	384,259,674	397,954,197
1985	4,692,013	-0-	4,692,013	351,730,642	356,422,655
1986	-416,673	-0-	-416,673	287,760,640	287,343,867
1987	420,700	-0-	420,700	227,426,103	227,846,803
1988	1,236,379	-0-	1,236,679	230,188,400	231,425,079
Total	\$3,569,648,434	\$264,904,682	\$3,834,553,116	\$8,409,124,925	\$12,243,678,041

* Includes \$131.5 million CDS adjustments covering the World War II period, \$105.8 million equivalent to CDS allowances which were made in connection with the Mariner Ship Construction Program, and \$10.8 million for CDS in fiscal year 1954 to 1955.

** Includes totals for FY 1976 and the Transition Quarter ending September 30, 1976.

**Appendix II: COMBINED FINANCIAL STATEMENTS OF COMPANIES WITH
OPERATING-DIFFERENTIAL SUBSIDY CONTRACTS ***

Statement A- Combined Condensed Balance Sheets as of December 31, 1987 and 1986

	1987	1986
		(stated in thousands)
ASSETS		
Current Assets:		
Cash	\$50,122	\$109,537
Marketable Securities	67,470	57,538
Notes Receivable	1,963	2,031
Accounts Receivable	265,882	398,892
Estimated Allowance for Doubtful Receivables	(4,089)	(10,198)
Other Current Assets	86,821	100,733
Total Current Assets	\$468,169	\$658,533
Non-Current Assets:		
Restricted Funds	\$12,990	\$43,685
Investments	7,654	680
Property and Equipment (net of depreciation)	1,254,093	2,174,135
Other Assets	146,721	153,691
Deferred Charges	11,556	63,492
Goodwill and Other Intangible Assets	8,198	4,596
Total Non-Current Assets	\$1,441,212	\$2,440,279
TOTAL ASSETS	\$1,909,381	\$3,098,812
LIABILITIES & EQUITY		
Current Liabilities :		
Notes Payable	\$56,954	\$680,996
Accounts Payable	107,660	205,681
Accrued Liabilities	272,331	378,288
Other Current Liabilities	13,476	11,413
Advance Payments/Deposits	1,216	1,391
Total Current Liabilities	\$451,637	\$1,277,769
Non-Current Liabilities:		
Long Term Debt	\$753,878	\$1,149,174
Other Liabilities	216,797	121,066
Deferred Credits	64,850	72,224
Total Non-Current Liabilities	\$1,035,525	\$1,342,464
Total Liabilities	\$1,487,162	\$2,620,233
Owners' Equity:		
Invested Capital	\$165,074	\$232,362
Treasury Stock	2,451	2,451
Retained Earnings	259,596	248,668
Total Owners' Equity	\$422,219	\$478,579
TOTAL LIABILITIES AND OWNERS' EQUITY	\$1,909,381	\$3,098,812

Appendix II: (continued)
Statement B--Income Statement for Fiscal Years Ending in 1987 and 1986

	1987 -----	1986 -----
	(stated in thousands)	
Shipping Revenue	\$1,867,588	\$2,044,737
Operating-Differential Subsidy	223,509	234,864
Other Shipping Operations Revenue	106,927	133,985
Total Revenue from Shipping Operations	\$2,198,024	\$2,413,586
Shipping Expense	\$574,206	\$669,831
Shipping Port Call Expense	68,535	80,390
Cargo Handling Expense	974,466	1,047,820
Inactive Vessel Expense	6,096	12,523
Other Shipping Operations Expense	79,262	203,666
Total Expense of Shipping Operations	\$1,702,565	\$2,014,230
Gross Income from Shipping Operations	\$495,459	\$399,356
Other Revenue	33,867	30,871
Other Expense	(1,615)	49,298
General and Administrative Expense	275,307	334,739
Depreciation and Amortization Expense	75,815	108,020
Interest Expense	80,477	145,125
Net Income Before Income Taxes	\$99,342	(\$206,955)
Provision for Income Taxes	53,110	10,190
Net Income After Income Taxes	\$46,232	(\$217,145)
Effect of Change in Accounting Policy	0	5,229
Income or Loss from Extraordinary Items	(30,826)	2,124
NET INCOME	\$15,406	(\$209,792)
	=====	=====

(Data from Forms MA-172 filed by 17 subsidized companies.)

APPENDIX III: TECHNICAL AND PROGRAM STUDIES PLAN--FISCAL YEAR 1988

Project	Task	Vendor	Contract Number	Amount
Marine Science				
Ship Structure Committee	MARAD's share to participate in the Ship Structures Committee FY 88 Program.	U.S. Coast Guard Washington, DC	M-8-A-56	\$ 75,000*
Ship Maneuvering and Resistance Simulation	To develop improved methodologies to determine full scale ship resistance and maneuvering characteristics.	Massachusetts Institute of Technology Cambridge, MA	MA84-41014	70,100
Maritime Safety:				
Safety of Hydrocarbon Vapor Collection Systems	To evaluate the safety effectiveness of the U.S. Coast Guard Chemical Transportation Advisory Committee draft safety standards for marine vapor control systems through a failure modes and effects hazards analysis study. (The work was contracted by the U.S. Coast Guard to Southwest Research Institute, San Antonio, TX).	U.S. Coast Guard Washington, DC	M-8-A-71	23,000+
Role of Human Factors in Marine Casualties	To identify key human factors information to be collected when marine casualty occurs. Information will be retained in casualty analysis data system to clearly and/or quantitatively associate the role of human factors in marine casualties. (The work was contracted by the U.S. Coast Guard to Dynamic Research, Inc., Arlington, VA).	U.S. Coast Guard Washington, DC	M-8-A-71	77,000+
Shipboard Crew Fatigue, Safety, and Reduced Manning	To provide a working definition of fatigue and its importance in relation to lowered ship manning levels, and to provide a qualitative assessment of the effects of shipboard fatigue on safety and productivity as manning levels are reduced.	Transportation Systems Center Cambridge, MA	M-8-A-76	75,000+
Ship Performance:				
Vessel Productivity Assessment	To determine the most efficient, effective balance of manning, organization, management, and technology to operate future U.S.-flag oceangoing ships. Study will address requirements for ship technical and operational performance and consider recent results of foreign Government/industry "ship of the future" programs and adoption of appropriate innovations for the U.S.-flag fleet, and U.S. maritime industry incentives.	Phillips Cartner & Co., Inc. Alexandria, VA	88-80045	98,000

*Cost Shared

**Cost Reimbursable

+ Part of the jointly funded/administered MARAD/USCG Cooperative Technical Studies Program

APPENDIX III: Continued

Project	Task	Vendor	Contract Number	Amount
Cargo Handling Technology:				
Cargo Handling Cooperative Program	Carry out research, development, test and evaluation of new technologies, systems, and methods directed at increasing the cargo handling productivity of U.S.-flag carriers.	American President Lines, Ltd. Matson Terminals Inc. Sea-Land Service	MA-11715	\$440,000*
Application of Microcircuit Technology in Logistics	Complete work which will significantly reduce the batch processing of shipping documents and provide a system for the recall of facsimile documents that will allow for the recovery of equipment repair costs from third parties.	Advanced Technology, Inc. Reston, VA	88-80118	80,000**
Fleet Management:				
Decision Aids for Fleet Management	To assist the U.S.-flag container shipping industry in developing and implementing a computerized system for assisting shipboard and shoreside managers in making real-time vessel operating decisions.	Sea-Land Service Edison, NJ	CA-80107	100,000*
Waterway Development:				
CAORF Simulation Studies for Baldwin Channel	The U.S. Army Corps of Engineers, requested CAORF services to study proposed improvements to the John F. Baldwin Ship Channel. It includes a variety of test types, varying environmental conditions, and harbor approaches, and will utilize the services of experienced San Francisco bar pilots. This task was awarded under a Task Order Agreement.	Marine Safety International Kings Point, NY	88-80024	139,376**
Maritime Technology Policy:				
Marine Board FY 88	To continue support of the Marine Board of the National Academy of Sciences during FY 88.	Dept. of Interior Washington, DC	M-8-A-49	100,000
Technology Transfer:				
Maritime Technical Information Facility (MTIF)	To provide support for the operation of the MTIF in FY 88.	Seatrack Great Neck, NY	83-30023	106,413
MTIF Operations FY 88	Acquisition, distribution, and control of MTIF equipment and resources in FY 88.	Various	--	12,178

*Cost Shared

**Cost Reimbursable

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APPENDIX III: Continued

Project	Task	Vendor	Contract Number	Amount
✓ Port and Intermodal:				
Development of an Executive Information System (EIS) Design	To develop a port Executive Information System design to address the information/data needs of port executives to improve port efficiency and reduce costs.	American Association of Port Authorities, Alexandria, VA	CA-80106	\$ 50,000
Community Cargo Release System - Phase II	Evaluate recommended elements from Phase I study, conduct an economic and marketing analysis to determine marketability, develop methodology for MARAD which U.S. ports can use to determine what elements of generic design are suitable for their own port/region.	Golden Gate Ports Association Stockton, CA	CA-80108	20,000*
Domestic Container Impact Study	A cost-shared study with the Federal Railroad Administration (FRA) to investigate the potential for movement of domestic traffic in double-stack container trains and the implications for the economic and operating environments of railroads, ocean carriers, and port terminal operators.	FRA Washington, DC	M-8-A-53	80,000*
Intermodal Trade Data Access Network	Project acquires enhancements to World Sea Trade Service of Data Resources, Inc., to include Bureau of Census origin/destination data and allow downloading to MARAD PC computers for analysis.	Office of Secretary of Transportation Washington, DC	--	39,500

*Cost Shared
 **Cost Reimbursable
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Appendix IV: STUDIES AND REPORTS RELEASED IN FY 1988

The following major studies or reports were released by the Maritime Administration (MARAD) during fiscal year 1988.

A limited number of copies of publications marked [MARAD] are available from the Agency's Office of External Affairs. Those labelled [NTIS] may be purchased from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

MARAD 1987 (The Annual Report of the Maritime Administration for Fiscal Year 1987) 68pp [MARAD].

A Report to the Congress on the Status of the Public Ports of the United States 1986-1987, prepared by the Maritime Administration, September 1988, 119pp [MARAD].

Relative Cost of Shipbuilding, prepared by the Maritime Administration, October 1988, 43pp [MARAD].

Report on Survey of U.S. Shipbuilding and Repair Facilities, 1987, prepared by the Maritime Administration, December 1987, 125pp [MARAD].

Vessel Inventory Report, January 1, 1987, prepared by the Maritime Administration, 65pp [MARAD].

Improvements in Loading and Discharging of Military Sealift Breakbulk Cargos [NTIS].
PB89-100929/AS \$19.95

Measurement of Ship Resistance From Simple Trials During A Regular Voyage [NTIS].
PB88-236542/AS \$14.95

Potential for General Cargo in Off-Shore Barges and River Ocean Vessels [NTIS].
PB88-241070/AS \$32.95

Note: Reports prepared or issued by the Maritime Administration in previous years are listed in *MARAD PUBLICATIONS*, which is available upon request from headquarters and field offices of the Agency.

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