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PANAMA CANAL COMMISSION

ANNUAL REPORT



FISCAL YEAR ENDED SEPTEMBER 30, 1990



PANAMA CANAL COMMISSION

**Balboa, Republic of Panama
OFFICE OF THE ADMINISTRATOR**

FROM THE ADMINISTRATOR

As the first permanent Panamanian Administrator of this great waterway, it is a pleasure to submit the annual report of the Panama Canal Commission for fiscal year 1990. Sharing in this honor is Mr. Raymond P. Lavery, the first permanent U.S. Deputy Administrator of the Commission. These appointments mark a milestone in the implementation of the Panama Canal treaties and the eventual transfer of the waterway to Panama.

Fiscal year 1990 was another important year for the Panama Canal. Operation Just Cause, which was initiated in December 1989, restored democracy to the Republic of Panama and ended the intimidation of Canal employees by the repressive regime of General Manuel Noriega. The Canal remained in excellent operating condition throughout the year, and vessels continued to transit safely and expeditiously.

The eleventh year of operation under the terms of the Panama Canal Treaty concluded with most major elements of Canal traffic registering their second consecutive year of decline, despite a slight upturn in commercial cargo tonnage moving through the waterway. Oceangoing commercial transits decreased marginally by 0.4 percent and average ship size fell, resulting in a 2.3 percent decline in Panama Canal net tonnage as compared to the last fiscal year. Total tolls revenue was up 7.8 percent due to a 9.8 percent toll rate increase which took effect at the beginning of this year. Without the toll rate hike, tolls revenue would have been 1.8 percent below last year.

The Commission continues to make significant investments in modernization, maintenance and improvement projects. Major accomplishments include the overhaul of four miter gates and associated chamber work at Gatun Locks, continued widening of the Canal's Pacific entrance, installation of a new firefighting system at Miraflores Locks, and acquisition of two new tugboats. Careful attention was also given to tailoring human resource development programs to ensure that well qualified Panamanians will be available to assume full responsibility for the effective management, maintenance and operation of the Canal. At the close of the year, Panamanians comprised slightly more than 86 percent of the work force, with increasing participation in all facets of the Canal's operation.

The Honorable Robert W. Page presented his resignation as Chairman of the Board of Directors of the Panama Canal Commission, effective the end of fiscal year 1990, at which time Mr. M. P. W. Stone assumed the responsibilities of the Chairman. Other changes to the Board included the appointment of four new Panamanian members and one new U.S. member.

I applaud the admirable performance, courageous efforts and personal sacrifice of the Commission work force during this challenging year. As we proceed with the final decade leading to the transfer of the Canal to Panama, I am confident that the Panama Canal is prepared to meet the demands of the world's shipping community, and will provide high quality transit service for many years to come.

A handwritten signature in dark ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

GILBERTO GUARDIA F.
Administrator

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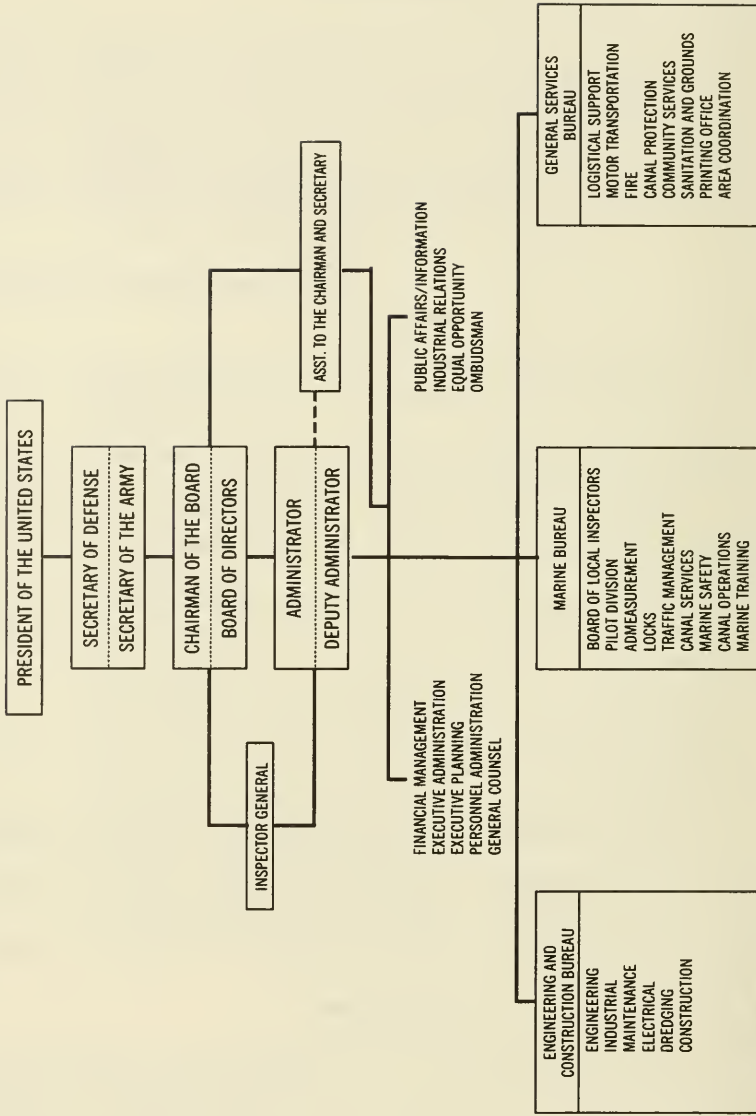
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PANAMA CANAL COMMISSION



INTRODUCTION

ORGANIZATION

The Panama Canal Commission is an agency of the Executive Branch of the United States Government, provided for by the Panama Canal Treaty of 1977, and established by the Panama Canal Act of 1979 (93 Stat. 452; 22 U.S.C. 3601 et seq), enacted September 27, 1979. The authority of the President of the United States with respect to the Commission is exercised through the Secretary of Defense and the Secretary of the Army. The Commission is supervised by a nine-member Board. Five members are nationals of the United States appointed by the President with the advice and consent of the Senate. Four members are nationals of the Republic of Panama who are proposed by the Republic of Panama for appointment by the President.

The Commission was established to carry out the responsibilities of the United States with respect to the Panama Canal under the Panama Canal Treaty of 1977. In fulfilling these obligations, the Commission manages, operates, and maintains the Canal, its complementary works, installations, and equipment, and provides for the orderly transit of vessels through the Canal. The Commission will perform these functions until the treaty terminates on December 31, 1999, at which time the Republic of Panama will assume full responsibility for the Canal.

The operation of the waterway is conducted on a self-financing basis. The Commission is expected to recover through tolls and other revenues all costs of operating and maintaining the Canal, including interest, depreciation, capital for plant replacement, expansion and improvements, and payments to the Republic of Panama for public services and annuities, in accordance with paragraph 5 of Article III and paragraphs 4(a) and (b) of Article XIII, respectively, of the Panama Canal Treaty of 1977. Revenues from tolls and all other sources are deposited in the U.S. Treasury in an account known as the Panama Canal Revolving Fund. The resources in this fund are available for continuous use and serve to finance Canal operating and capital programs which are reviewed annually by the Congress.

THE CANAL

The Panama Canal is a lock-type canal approximately 51 miles long from deep water to deep water. The minimum width of the navigable channel is 500 feet. Navigable channel depth can vary according to the amount of water

available in Canal storage areas; however, the normal permissible transit draft is 39 feet 6 inches tropical fresh water.

Vessels transiting the Canal are raised in three steps to the level of Gatun Lake, the principal source of Canal water, then lowered to sea level again in three steps. The three sets of Canal locks are paired so as to permit simultaneous lockage of two vessels in the same or opposite direction.

Since August 15, 1914, the official date of its opening, the Panama Canal has served world trade virtually without interruption. Through this fiscal year, a total of 704,351 vessels of all types have transited with 594,462 or 84.4 percent of the total being of the oceangoing commercial class.

TOLL RATES

Toll rates during FY 1990 were: (a) on merchant vessels, Army and Navy transports, hospital ships, supply ships, and yachts, when carrying passengers or cargo, \$2.01 per net vessel ton of 100 cubic feet of actual earning capacity, as determined in accordance with the "Rules of Measurement of Vessels for the Panama Canal;" (b) on such vessels in ballast, without passengers or cargo, \$1.60 per net vessel ton; and (c) on other floating craft, \$1.12 per ton of displacement. These rates have been in effect since October 1, 1989.

A temporary 20 percent surcharge on all tariff rates for tug and linehandling services, approved by the Commission's Board of Directors, was implemented on April 1, 1990. The surcharge is to offset a variety of unbudgeted extraordinary costs incurred by the Commission as a result of the actions and political decisions of the former Panama regime of General Manuel Noriega. Shortly after the close of fiscal year 1990, a decision was made to terminate the surcharge on February 28, 1991.

By treaty, the United States continues to provide to Colombia free transit through the Canal of its troops, materials of war, and ships of war.

BOARD OF DIRECTORS
Ending Fiscal Year 1990

Honorable ROBERT W. PAGE
Chairman, Board of Directors
Panama Canal Commission
Washington, D.C.

Honorable ROBERT R. MCMILLAN
Garden City, New York

Honorable ALFREDO N. RAMIREZ
Panama, Republic of Panama

Honorable CECILIA A. ALEGRE
Panama, Republic of Panama

Honorable WALTER J. SHEA
Annapolis, Maryland

Honorable LUIS A. ANDERSON
Mexico, D.F., Mexico

Honorable JOAQUIN J. VALLARINO, Jr.
Panama, Republic of Panama

Honorable ANDREW E. GIBSON
Short Hills, New Jersey

Honorable WILLIAM W. WATKIN, Jr.
Brevard, North Carolina

Executive Committee

Honorable ROBERT W. PAGE
Chairman

Honorable ALFREDO N. RAMIREZ

Honorable WALTER J. SHEA

Honorable JOAQUIN J. VALLARINO, Jr.

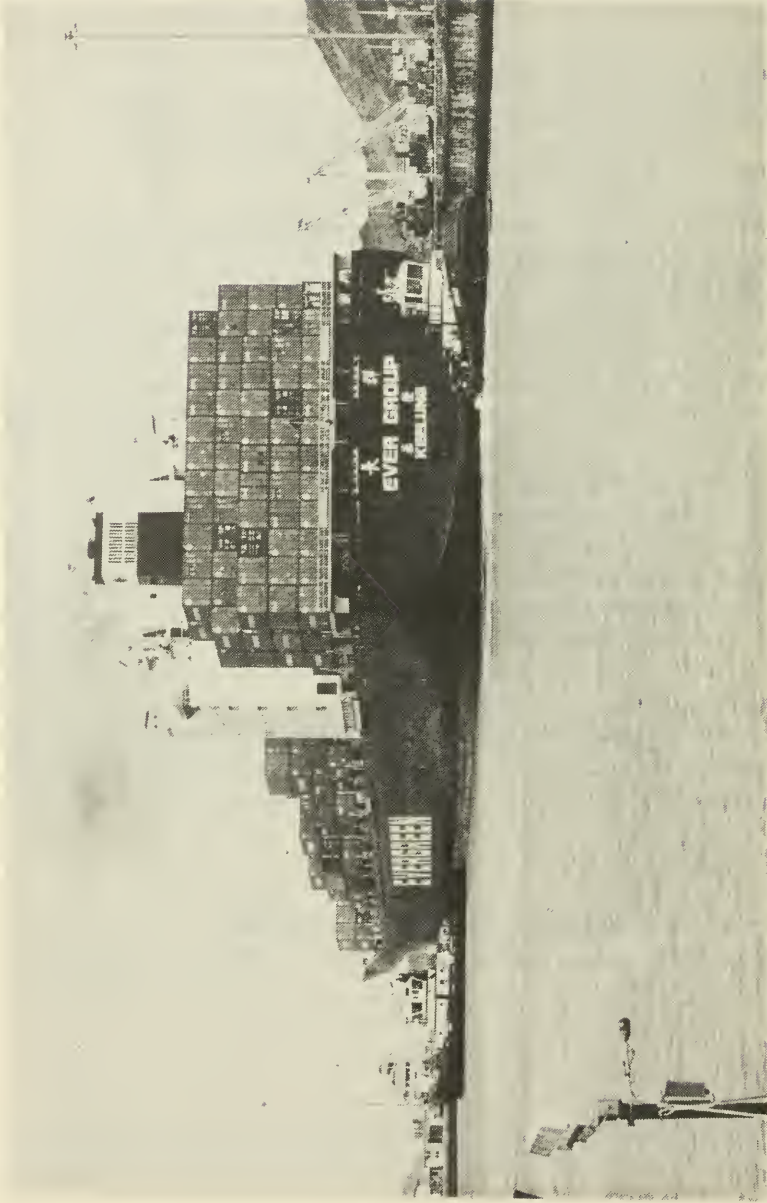
Honorable WILLIAM W. WATKIN, Jr.

OFFICIALS IN THE REPUBLIC OF PANAMA

Administrator Honorable GILBERTO GUARDIA F.
Deputy Administrator Honorable RAYMOND P. LAVERTY

OFFICIAL IN WASHINGTON, D.C.

Assistant to the Chairman and Secretary MICHAEL RHODE, Jr.



Two of the Canal's newest tugs, the D. P. McAULIFFE (left) and the UNIDAD, assist a Panamax size containership into the lock chamber during a southbound transit. These tugs are equipped with the latest technology and safety features.

Chapter I

CANAL TRAFFIC

TRAFFIC

Most major elements of Canal traffic registered their second consecutive year of decline in fiscal year 1990, despite a slight upturn in commercial cargo tonnage moving through the waterway. The fear of recession in the U.S. economy, the economic slowdown in other regions important to the Canal and structural changes in certain trades explain the weak results. There were no indications that traffic levels were significantly affected by the political problems that were ongoing in Panama at the outset of the year or by the U.S. military action (Operation Just Cause) initiated in late December 1989.

Oceangoing transits in fiscal year 1990 were 12,052 or 33.0 daily, marginally below the 12,075 or 33.1 transits per day achieved in fiscal year 1989. Commercial vessels accounted for 11,941 oceangoing transits, declining 0.4 percent from the 11,989 transits in the prior year. Vessels owned or operated by the U.S. Government and free Colombian and Panamanian Government vessels accounted for 111 transits, compared with 86 transits in fiscal year 1989.

The number of large beam vessels and average ship size also decreased during the year. Ships with beams of 80 feet or greater accounted for 5,545 transits or 46.0 percent of total oceangoing transits, versus 5,734 or 47.5 percent in fiscal year 1989. Likewise, vessel transits by the largest ships capable of passing through the waterway — those with beams of 100 feet and over — decreased from 2,765 in fiscal year 1989 to 2,745 in fiscal year 1990. These wide beam vessels accounted for 22.8 percent and 22.9 percent of total oceangoing transits in fiscal years 1990 and 1989, respectively. The drop in large vessel transits resulted in a decrease in average Panama Canal net tons per transit, with the average tonnage of oceangoing commercial vessels falling 1.8 percent to 15,216 tons in fiscal year 1990 compared to 15,500 tons in the prior year.

The decline in transits and average ship size resulted in total Panama Canal net tonnage declining 2.3 percent to 182.7 million tons compared to 187.0 million tons in fiscal year 1989. A 9.8 percent toll rate increase, effective at the outset of fiscal year 1990, generated higher tolls revenue

despite the decline in total Panama Canal net tonnage. Tolls revenue reached an all-time record level of \$355.6 million, up 7.8 percent from the \$329.8 million collected in fiscal year 1989. Without the toll rate hike, however, actual tolls revenue would have fallen by 1.8 percent to the lowest level since fiscal year 1985.

The relatively weak performance indicated by the fall in transits and Panama Canal net tonnage occurred even while cargo tonnage passing through the Canal increased 3.5 percent over the prior year, from 151.9 million long tons to 157.3 million. The decline in transits and Panama Canal net tonnage, despite the increase in cargo tonnage, reflects a more efficient utilization of vessels, coupled with a shift in the mix of cargo toward more bulk type commodities.

A two-year summary of the key elements of Canal traffic and tolls revenue is shown in the table below, followed by a more detailed description of cargo movements by trade route.

COMPARATIVE HIGHLIGHTS OF OPERATIONS

	<i>Fiscal year</i>	
	1990	1989
Oceangoing transits:		
Commercial	11,941	11,989
U.S. Government	91	74
Free	20	12
Total	<u>12,052</u>	<u>12,075</u>
Daily average	33.0	33.1
Small transits:		
Commercial	1,017	997
U.S. Government	240	287
Free	16	30
Total	<u>1,273</u>	<u>1,314</u>
Total cargo:		
Commercial	157,074,475	151,644,424
U.S. Government	248,442	224,121
Free	6	3
Total	<u>157,322,923</u>	<u>151,868,548</u>
Total Panama Canal net tons and reconstructed displacement tonnage	182,709,855	186,962,894
Transit revenue:		
Commercial tolls	\$353,841,162	\$327,946,771
U.S. Government tolls	1,716,795	1,818,855
Tolls revenue	<u>\$355,557,957</u>	<u>\$329,765,626</u>
Harbor pilotage, tug, launch, and other services	<u>\$78,113,078</u>	<u>\$70,008,117</u>
Total transit revenue	<u>\$433,671,035</u>	<u>\$399,773,743</u>

COMMODITIES AND TRADE ROUTES

Cargo shipments through the Canal rose in fiscal year 1990. Total commercial cargo increased 3.6 percent to 157.1 million long tons from the 151.6 million tons in fiscal year 1989, due to an upturn in bulk commodity groups, such as petroleum and ores and metals, and a rise in certain other cargoes, including agricultural commodities and refrigerated foods. The improvements registered in these Canal commodity groups more than offset the losses in automobiles, phosphates and numerous other trades.

Grains, which is the principal commodity shipped through the Canal, increased 1.1 percent to 30.2 million long tons from 29.9 million tons in fiscal year 1989. The upturn in this commodity resulted from a sharp rise in corn and soybean exports from the U.S. to the Far East via the Canal. The depressed value of the dollar versus the Japanese yen improved the competitiveness of U.S. grains, partially explaining the favorable performance in corn shipments. Corn tonnage through the Canal rose 33.7 percent to 14.0 million long tons from the 10.5 million tons in the prior year, with about 10.0 million long tons or nearly 70.0 percent of this total destined for Japan. Other components of the grain category also increased. Soybeans rose 17.4 percent to 6.2 million tons from 5.2 million tons, and sorghum was up 4.9 percent to 2.0 million tons from 1.9 million tons in fiscal year 1989. Wheat, the second largest commodity in the grain group, declined dramatically by 38.4 percent to 6.8 million tons from the record 11.0 million tons the prior year. Wheat shipments from the U.S. to China decreased nearly 51 percent to 3.8 million long tons from the 7.7 million tons the prior year, due mainly to a bumper wheat harvest in China.

An upturn was also registered in petroleum and products, the second major commodity group in FY 1990. Petroleum and products rose 13.5 percent to 25.2 million long tons from 22.2 million tons in the prior year. Crude oil rose 17.6 percent to 9.3 million tons from 7.9 million tons in FY 1989. Ecuadorian crude oil, which accounted for about 69 percent of the crude shipped through the Canal was the principal factor in that upturn. Ecuadorian crude oil is destined primarily for the U.S. East Coast, Panama, and the West Indies. Petroleum products moving through the Canal rose 11.2 percent to 16.0 million long tons from 14.4 million tons in fiscal year 1989. Residual fuel oil flows increased 32.0 percent to about 5.5 million tons from 4.2 million tons the prior year. This commodity was the principal contributor to the increase registered in this group. Residual fuel shipments originated primarily in Peru and Ecuador and were destined for the U.S. East Coast.

Strong growth was observed in the tonnage of ores and metals this fiscal year. It reached 12.5 million long tons, rising 18.5 percent from 10.5 million long tons in 1989. Total ores, accounting for nearly 66.0 percent of the group, rose 20.1 percent to 8.2 million long tons from 6.8 million tons the prior year. Aluminum/bauxite ore, the leading commodity within the group, increased 37.1 percent to 3.3 million tons. Nearly 77 percent of the aluminum/bauxite originated in Australia and was primarily destined for the U.S. East Coast. The movement of metals rose 15.6 percent to 4.2 million

long tons from 3.7 million tons in 1989. Scrap metal was the largest component of the metal group, showing a 9.6 percent increase to 2.2 million long tons.

Containerized cargo, accounting for nearly 80.0 percent of the commodities grouped under the "All Other" category, rose 3.9 percent to 20.7 million long tons from the 19.9 million tons the prior year. The moderate growth rate continued to reflect the slower growth trend initiated in 1985 in containerized cargo shipped through the Canal. Fifty-three percent of the containerized cargo through the Canal involved trade between the U.S. and the Far East, with U.S. exports to the Far East totaling 6.1 million long tons compared with 5.7 million tons in the prior year. U.S. imports from the Far East remained flat at 4.9 million tons. The relatively weak performance of the important container trade continues to reflect, for the second consecutive year, the slowdown in the U.S. and Japanese economies and the strong competition exerted in this trade by the U.S. intermodal system. The U.S. West Coast to Europe route, the second most important container trade, rose 7.1 percent to 2.9 million long tons from 2.7 million tons in 1989.

Automobile shipments declined 16.4 percent in fiscal year 1990 to 1.7 million long tons from 2.0 million tons in 1989. Because of their configuration, car carriers pay the highest toll per cargo ton of any vessel type in Canal traffic. Accordingly, a drop in automobile tonnage translates into a disproportionately higher reduction in Panama Canal net tonnage and tolls revenue. This drop in tonnage reflects the third consecutive year of poor trade, contributing largely to the downturn in Canal traffic. The trade continued to be adversely affected by structural changes in the automobile industry due to the establishment of Japanese car manufacturing plants in the U.S. and Europe and the slowdown in consumer demand. Automobiles from Japan destined for the U.S. East Coast, totaled 1.1 million long tons versus 1.4 million tons in 1989.

The coal and coke trade is another major commodity group that declined in fiscal year 1990. This trade dropped 9.2 percent to 8.1 million tons from 8.9 million tons the prior year. The drop in purchases of Japanese coke by the U.S. was down nearly 54 percent to about 550 thousand long tons from the 1.2 million tons in the prior year. The coal segment of the group rose 5.1 percent to 7.1 million long tons from 6.8 million in 1989. However, coal originating in the U.S. East Coast decreased 3.3 percent to 4.7 million long tons compared with 4.8 million in 1989. Coal from Hampton Roads bypassing the Canal, which reached a record level of 6.6 million in fiscal year 1990, is responsible for the decline. U.S. coal shipments destined for Japan slid 34.6 percent to 1.6 million long tons versus 2.4 million tons the year before. Shipments to Taiwan, however, increased 52.9 percent to 2.6 million tons from 1.7 million tons in 1989.

The nitrates, phosphates and potash group dropped 2.9 percent to 13.8 million long tons from 14.2 million tons in 1989. Phosphates, which accounted for 60 percent of the group, decreased 4.4 percent to 8.2 million tons from about 8.6 million tons in 1989. Nearly 73 percent of the phosphates

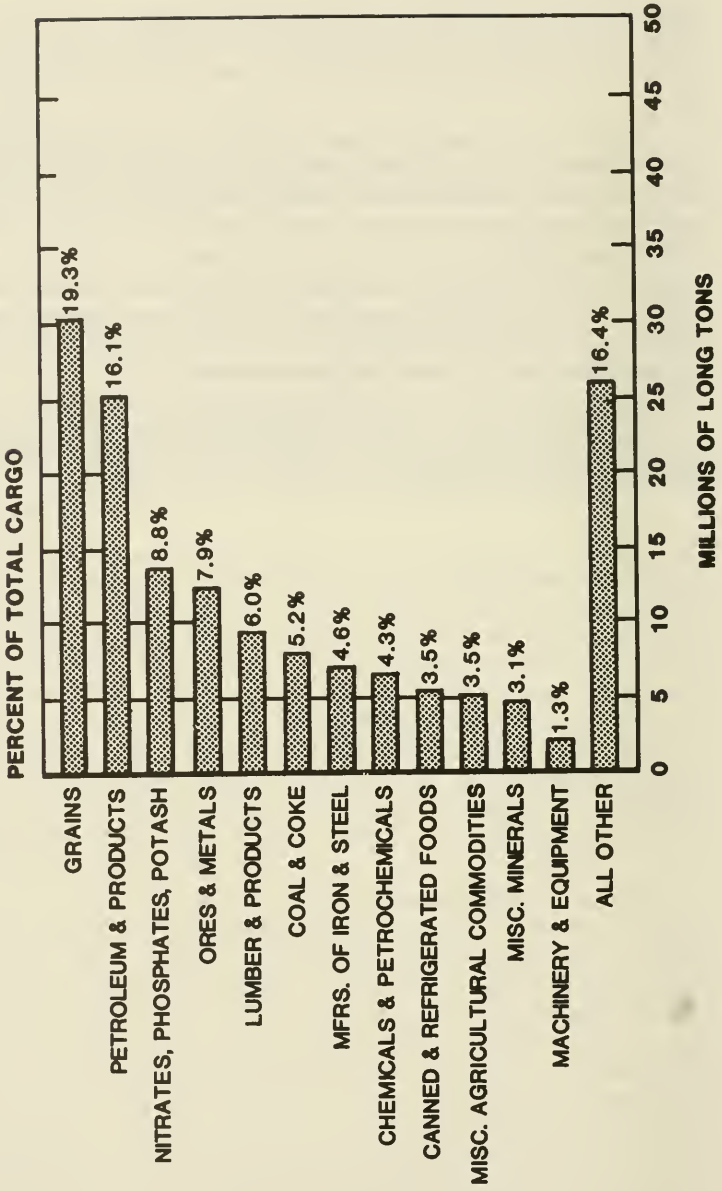
tonnage shipped through the Canal originated in the U.S. East Coast and was destined primarily for the Far East. China received about 2.5 million long tons, while Japan and South Korea each imported close to 1.2 million tons.

A number of commodity groups, such as chemicals and petroleum chemicals and manufactures of iron and steel also registered declines in 1990. However, these shortfalls were offset by gains in other commodities including miscellaneous minerals, other agricultural commodities and lumber and products.

Trade between the East Coast of the United States and Asia continues to dominate Canal traffic, accounting for 36.5 percent of total commercial cargo. Cargo on this route declined, however, by 4.0 percent to 57.4 million long tons from 59.7 million long tons in 1989.

The following tables show the principal commodity groups moving in oceangoing commercial vessels in fiscal year 1990 and a comparison of the major trade routes in fiscal year 1990 and fiscal year 1989.

**PRINCIPAL COMMODITY GROUPS
TRANSITING THE CANAL
OCEANGOING COMMERCIAL CARGO FY 1990**



Major Voyage Trade Routes in Canal Traffic

Trade Route	Fiscal year						Percent of Increase or (Decrease)
	1990			1989			
	Panama Canal Net Tons	Long Tons Cargo	Long Tons Cargo	Panama Canal Net Tons	Long Tons Cargo	Long Tons Cargo	
	[In thousands of long tons]						
East Coast United States-Asia	62,994	57,354	71,582	59,746	(12.0)	(4.0)	
East Coast United States-West Coast South America	19,348	13,486	19,314	14,121	0.2	(4.5)	
Round the World	13,826	7,680	11,724	5,976	17.9	28.5	
Europe-West Coast South America	12,125	8,406	10,898	7,512	11.3	11.9	
Europe-West Coast United States/Canada	11,777	15,433	11,807	14,178	(0.3)	8.9	
Europe-Asia	5,359	3,602	4,895	3,728	9.5	(3.4)	
East Coast United States/Canada-Oceania	5,249	6,459	5,424	6,968	(3.2)	(7.3)	
East Coast United States-West Coast Central America	5,052	5,508	3,703	3,521	36.4	56.4	
U.S. Intercoastal (including Alaska and Hawaii)	4,489	2,410	5,209	2,589	(13.8)	(6.9)	
West Indies-West Coast South America	4,094	4,193	2,920	2,067	40.2	102.9	
West Indies-Asia	3,863	2,586	4,468	2,840	(13.5)	(8.9)	
Europe-West Coast Central America	3,052	1,651	3,256	1,938	(6.3)	(14.8)	
Subtotal	151,228	128,768	155,200	125,184	(2.6)	2.9	
All other routes	30,377	28,305	30,569	26,452	(0.6)	7.0	
Total	181,605	157,073	185,769	151,636	(2.2)	3.6	



Tests were conducted on the new foam fire fighting system installed at Miraflores Locks. The system consists of eight remote controlled foam nozzles located strategically at the forebay and tailbay areas of the locks. Upper photograph shows the northeast lane filled with foam following the test. Lower photograph shows the test in progress.

Chapter II

CANAL OPERATIONS

Canal operations are comprised of Transit Operations and Maintenance and Related Canal Projects. The various functions are divided among a number of operating bureaus within the Canal agency.

TRANSIT OPERATIONS

Daily average transits by oceangoing vessels was 33.0 per day during fiscal year 1990. Average time in Canal waters increased from 17.4 hours in fiscal year 1989 to 24.4 hours in fiscal year 1990. This increase was attributable in part to the brief closure of the Canal and temporary limitations on Canal operations during U.S. military action associated with Operation Just Cause.

<i>Fiscal year</i>	<i>Vessels of 600-foot length and over</i>	<i>Percent of total oceangoing transits</i>	<i>Vessels of 80-foot beam and over</i>	<i>Percent of total oceangoing transits</i>
1990	3,772	31.3	5,545	46.0
1989	3,913	32.4	5,734	47.5
1988	4,047	32.9	6,027	48.9
1987	4,005	32.5	5,902	48.0
1986	4,131	34.4	5,898	49.1
1985	3,862	33.1	5,514	47.3
1984	3,865	33.9	5,496	48.3
1983	4,157	35.1	5,869	49.5
1982	5,534	39.5	7,226	51.1
1981	4,855	34.7	6,364	45.5
1980	4,598	33.8	6,089	44.7

The number of vessels transiting at more than 36-foot draft decreased 4.8 percent: 1,780 vessels during FY 1990 compared to 1,698 during fiscal year 1989. The maximum allowable draft remained at 39 feet 6 inches during the entire fiscal year.

As a result of events associated with Operation Just Cause, the Panama Canal closed at 0036 hours on December 20, 1989, and resumed limited service at 0600 hours on December 21, 1989. Full 24-hour operations resumed at 1000 hours on December 25, 1989.

Total jobs performed by Commission tugs decreased from 38,579 in fiscal year 1989 to 37,072 in fiscal year 1990.



Dry chamber work is performed at Gatun Locks while vessels continue to transit the Canal utilizing the alternate lane. Two vessels can partially be seen to the left during lockage operations while another vessel approaches Gatun Locks. More than 13,000 vessels pass through the Canal each year.

	Fiscal year	
	1989	1990
Oceangoing transits	12,075	12,052
Tug jobs:		
Balboa	25,759	26,191
Cristobal	12,820	10,881
Tug operating hours	61,601	58,215

MAINTENANCE AND CANAL IMPROVEMENT PROJECTS

Maintenance and improvements to the Canal continued to progress throughout the year. The various divisions and units of the Engineering and Construction Bureau are generally responsible for the overall physical maintenance and improvement of the waterway. The Marine Bureau operates and maintains the locks and related facilities.

Channel Improvements: Routine maintenance dredging, as well as the project to widen the channel at the Pacific Entrance continued during the year. Over 3.6 million cubic yards were excavated from the Pacific Entrance this year. Additional statistics on the volume of material dredged appear in Table 14 of this report.

Locks: Installation of new locks wall fendering was completed at the Gatun and Pedro Miguel Locks tailbay and substantially completed at the Miraflores tailbay. A similar system has been designed for the approach wall and will be tested at the Pedro Miguel South East Center Wall in 1991.

Gatun Locks Miter Gates 5, 6, 13 and 14 were removed for overhaul and replaced with previously rehabilitated gates, 17, 18, 29 and 30. Work was also performed on exposed underwater and topside machinery at Gatun Locks. Miraflores Locks Miter Gates 122 and 123 underwent internal and external painting. Structural repairs were made to Miter Gate 64. Gate 64 will be painted and placed back in service in 1991.

Installation of a new marine foam-type fire protection system is now in its final phase at Miraflores Locks. The system being installed consists of a total of eight remote controlled foam nozzles strategically located at the entrances to the lock chamber. Similar systems are planned for Pedro Miguel and Gatun Locks.

Construction of a new office building at Pedro Miguel Locks to house the Superintendent Pacific Branch is well underway. Completion is scheduled for the early part of FY 1991.

Digital microwave links were installed to connect the Balboa telephone exchange to the Pacific Locks. These links provide reliable high speed transmission of data, radio and telephone traffic.

With the installation of 40 cast coil transformers at Pedro Miguel Locks, the replacement of PCB transformers at the Locks was completed.

One leaf and A-frame of the Gatun Locks Vehicular Bridge, damaged on the centerwall west side by a transiting vessel, was replaced with a spare.

Three rising stem valves were completely rehabilitated and modified to the slider type.

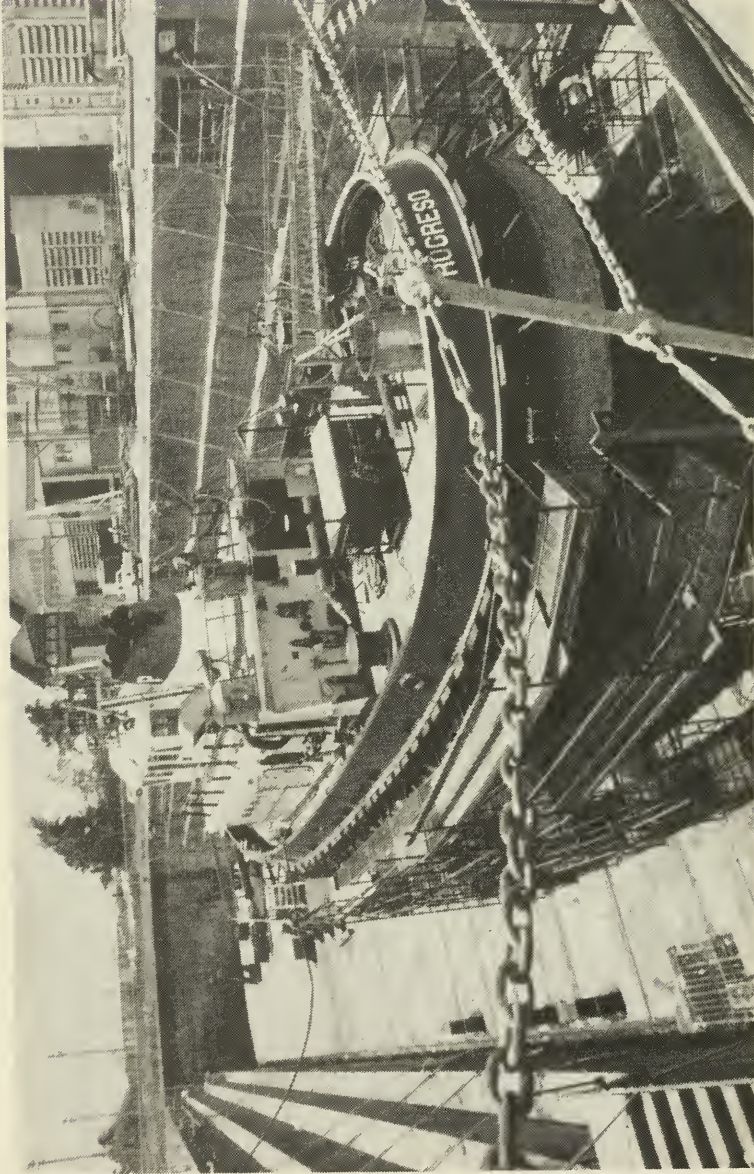
Dams and Spillways: The Industrial Division overhauled the eight gates at Miraflores Spillway.

The manufacture of six new sluice gates for Madden Dam was underway at year end at the Industrial Division.

Communications: To improve the reliability and capability of its telecommunications services, the Commission purchased fiber optic cable to span the Isthmus. When completed in 1991, the new system will provide alternate transmission routes and enhanced voice, data, and video services to all major Commission operating areas. These facilities will directly support the marine traffic control, management information, and security systems on the Canal.

Floating Equipment Maintenance: Scheduled major overhauls were performed on the tugs *Parfitt*, *Schley* and *Progreso*, Fuel Barge No. 2, Dredge Tender *Diablo*. The overhaul of Fuel Barge No. 103 was underway at year end. An interim overhaul was carried out on the Tug *Trinidad*, and the *Amistad* was still in the yard at year end. Emergency repairs were accomplished on the Tug *Harding* main engines. Maintenance and rehabilitation work was done on the Craneboat *Atlas*, the ladder bail of the Dredge *Christensen*, and the boom on Anchor Barge No. 1.

Acquisitions/Contracts: Two new diesel powered tractor tugboats, the *D. P. McAuliffe* and the *Unidad*, were placed in service on February 24 and March 28, respectively. A contract for about \$1.3 million was awarded for the construction of a new small dredge tender with improved power and maneuverability. Other contracts were awarded for cleaning and repairing miter gates; replacing 44KV line track span towers; constructing Culebra-Lirio East Diversion Ditch drainage system; rehabilitation of Farfan Spoil Area; stabilization work at Cocoli Hill and Lirio East Slide; constructing a Grit Blasting and Painting Facility, Mt. Hope; improvements to Paraiso Landing; Replacing Switchgear at Pedro Miguel Locks, construction of Marine Facilities, Building 13 and 14, Gatun; and replacing Gatun Locks South Locomotive Turntable.



The tug PROGRESO, seen here drydocked at the Industrial Division in Mt. Hope, was one of several Canal tugs to undergo major overhaul during this fiscal year. Maintenance of important transit related equipment is critical to the efficiency of the waterway.

Chapter III

SUPPORTING OPERATIONS

Supporting operations of the Panama Canal Commission provided essential support services to the operation and maintenance of the waterway and the Agency's facilities, as well as to other U.S. agencies on the Isthmus and to employees and their dependents. These operations included logistical services, community services, sanitation and grounds management, transportation services, public utilities, fire protection, canal protection, health and safety and other employee services.

LOGISTICAL SERVICES

The Logistical Support Division provided centralized procurement, inventory management, warehousing, distribution, contract administration and supply and property disposal support to Canal operations. A total of \$64.4 million in goods and services were procured in fiscal year 1990, including \$23.9 million from sources in Panama. This reflects \$7.9 million for Bunker "C" oil for thermoelectric power generation purchased from Refineria Panama, S.A. and \$4.5 million for light diesel fuel oil purchased from Esso Standard Oil. Major contracting obligations included \$333,160 for aluminum sulphate; \$461,170 for Dredge Mindi parts; \$333,520 for replacement Scada master station; \$612,900 for miter gate parts; \$334,200 for locks rubber fenders; \$631,740 for steel sheet piling; \$648,555 for a 75-ton lattice boom crane; \$1,885,800 for a towing locomotive turntable; \$325,850 for SF6 gas circuit breakers; \$1,001,300 for two fire trucks; \$1,298,000 for a dredge tender; and \$461,540 for 75 KM-fiber optic cable.

Approximately \$17.3 million in inventory items were issued for Commission use, and \$19.2 million were obligated for new inventory purchases during the year. A total inventory of 38,674 line items with an average cost value of \$30.8 million was on hand at year-end.

Activities of the Excess Disposal Unit included no-cost transfers to other U.S. Government agencies of excess equipment having an original acquisition value of approximately \$1.4 million, while surplus property sold to the Government of Panama at current fair market value amounted to approximately \$11,767. Sales to others amounted to \$518,138.

The New Orleans Branch in Louisiana expedited urgent purchases and

coordinated all Commission cargo shipments from the United States to Panama. Under the coverage of the Military Sealift Command's contract, 20,019 measurement tons of containerized and breakbulk cargo were shipped to the Port of Las Minas, Republic of Panama.

COMMUNITY SERVICES

During fiscal year 1990, the Community Services Division managed employee housing, Commission-owned buildings, a technical resources center and the employee fitness program for the agency.

The housing portion of the operation dedicated its resources to managing, maintaining, repairing, performing preventive maintenance and bringing up to standard the safety and security aspects of the quarters inventory, and assisting residents with physical security inspections and supporting neighborhood crime watch programs. As part of the implementation of the multiyear housing management plan, the division identified Diablo and Margarita as housing areas for future transfer to the Government of Panama. As a result of the Presidential mandate to move U.S. citizens off the economy, the division continued its inter-service agreement with DOD, whereby 68 DODDS employees occupied PCC housing units. At the end of the fiscal year, the agency retained the use of 1,545 housing units for its U.S. citizen and other eligible employees. This represents only 35% of the inventory of approximately 4,300 units owned by the Panama Canal Company immediately prior to entry into force of the Panama Canal Treaty in 1979, indicating that a total of 65% of those units have been transferred to Panama in 11 years since Treaty implementation. No houses were transferred in fiscal year 1990.

The buildings management activity is responsible for the maintenance and operation of Commission buildings and structures (not specifically assigned to other Commission units) and for a centralized custodial service. As an ongoing project, this unit continued to modify facilities to comply with OSHA standards for handicapped personnel and increased physical security to all buildings. No buildings were transferred to the Government of Panama during the year.

The Housing Management Branch and the Buildings Management Branch were merged to form a single branch toward the end of the fiscal year. This was done in an effort to effect savings by consolidating management and supervisory duties in several areas. The furniture warehouse for the housing operation on the Atlantic district has been eliminated.

The Technical Resources Center provided mission-support information and research to all units of the Commission and other U.S. agencies and maintained a collection of library and tridimensional materials relating to the history and operation of the Panama Canal. This unit supported the professional development of the pilot understudies, apprentices, clerical trainees and other employees through workshops and publications. Online access to computer data banks in the United States, such as DIALOG and

OCLC, continued to support reference and acquisition services during the year.

The Employee Fitness Branch administered a variety of duty-related as well as off-duty fitness programs and facilities for Commission employees and their dependents. It continued training various Commission units in rescue, water safety, advanced life saving and survival floating, and is responsible for certifying swimming proficiency of job applicants and employees. The Branch provides a great beneficial impact on community activities and morale.

SANITATION AND GROUNDS MANAGEMENT

The sanitation activity provides environmental health support to Commission employees and Panama Canal operating units. This responsibility extends to protecting the work force from tropical diseases transmitted by insect and arthropod vectors. Mosquito control measures received highest priority in FY 1990 due to the small, yet constant, increase in Canal area breeding by *Aedes aegypti*, the vector of yellow and dengue fever. Only three *aegypti* breeding foci were discovered in FY 1989, compared to 54 breeding sites found within the Pacific residential district during FY 1990. Each of these foci was quickly eliminated through timely spraying of larvicides and applications of insecticidal fogs. Intensified surveillance and litter removal kept these isolated infestations from spreading and ensured each eradication effort was complete.

A brief, non-routine accomplishment during FY 1990 was the prompt and effective sanitation of the Canal area following U.S. military action which took place in Panama on December 20, 1989. Due to nonavailability of any trash collection services by Panama during this period, the backlog of household refuse within Commission residential areas reached a point where accumulations of garbage from overflowing refuse containers presented a public health risk. Within a few days, however, sufficient Sanitation and Grounds employees reported to work to allow organizing emergency refuse collection crews, who quickly restored sanitary conditions within the Canal area community. By mid January Panama's refuse collection agency renewed its service.

Refuse disposal services at the Commission's Atlantic and Pacific sanitary landfills continued to be provided for all Canal area solid wastes, including those from U.S. military installations and Government contractors. Such refuse from Pacific area defense sites comprised 83% of the total handled at the Red Tank landfill, while at Mt. Hope landfill on the Atlantic coast, where refuse from DIMA (Government of Panama trash collection agency) as well as that from the U.S. military installations are deposited, about 73% originated from Panamanian sources. The tonnage of refuse handled at both facilities has remained stable over the past five years, varying between 60,000 and 67,000 tons annually.

Grounds Branch crews maintained 2,900 acres of improved grounds within Commission residential areas and Panama Canal industrial and vessel transit facilities. Vegetation was kept under control along utility line

rights-of-way, Gatun Dam, saddle dams, and around all aids to navigation: the 140 towers and targets, plus canal bank lighting and station markers. Staff agronomists provided technical oversight of tree planting and general care for 64,000 tree seedlings of fast-growing species of *Acacia* and *Gmelina* trees used to reforest slopes at several landslide sites along Gaillard Cut. The trees will reduce erosion and their shade will help retard the growth of unwanted vegetation which hinders inspections by geotechnical engineers of soil stability markers along the canal slopes.

In May, an attack by Africanized honey bees resulted in a fatality of a 67-year-old Commission employee, a Grounds Branch engineering equipment operator who was working at a remote duty station when he was stung. He suffered serious medical complications and expired three months later.

Analysis of the data compiled by the entomology unit on all Africanized bee swarms has shown that the seasonal numbers of Africanized honeybee colonies reported to PCC are now fairly stable, with predictably high numbers of swarms and nests occurring during the dry season (January through April) followed by a rapid decline in sightings after the onset of heavy rains in July. There were 167 bee colonies destroyed in FY 1990, 28% more than those controlled in FY 1989. A significant part of this increase was due to more than twice the number of bee control operations on the Atlantic side of the Isthmus compared to the previous year. Five Africanized bee swarms were removed from transiting ships in FY 1990, two more than in FY 1989.

MOTOR TRANSPORTATION SERVICES

The Motor Transportation Division operated and maintained a consolidated motor pool of 940 vehicles designed to meet the vehicular transportation requirements of the Commission. The vehicle fleet in fiscal year 1990 included 639 trucks of various types, 211 passenger-carrying vehicles, 43 special purpose vehicles and 47 special equipment. Vehicle mileage increased slightly from 7,433,137 in FY 1989 to 7,466,000 in FY 1990. Fully equipped shops, including a tire retreading facility and heavy duty repair shops, provided facilities for overhauls, maintenance and repairs to the Motor Transportation Division fleet and equipment of other Commission units. The vehicle inspection facilities located within the Motor Transportation Division were only used to perform official Commission vehicle inspections.

PUBLIC UTILITIES AND ENERGY

Panama Canal Commission facilities include electric power generation and distribution systems, communication systems, water purification and distribution systems, and a central chilled water air conditioning system for certain public buildings.

Total Canal area energy demand during fiscal year 1990 was 532 gigawatt hours, a 2 percent increase from the 524 gigawatts used last year. The peak hourly demand of 84.6 megawatts reached on June 19, 1990, shows a slight increase from the 83.6 megawatt peak reached in fiscal year 1989. Electrical

power consumed for Commission operations only was 64.3 gigawatt hours, 1.7 percent above the previous year. Gasoline and petroleum distillate fuel usage by the Commission during FY 1990 (excluding fuel for power generation), was 4.7 million gallons, 7.8 percent lower than in FY 1989. Combined fuel and electrical energy consumption by the Commission, calculated in btu's, also showed an overall decrease, 2.4 percent, in comparison with FY 1989.

The water treatment and distribution systems operated by the Commission provide potable water for the Canal area and areas of the Republic of Panama. The Pacific side system serves the Canal area, portions of Panama City, and suburban areas. During fiscal year 1990, the two systems supplied 3.39 billion cubic feet of potable water to consumers, a slight increase of about 0.30 percent from the previous year. Water supplied by the Panama Canal Commission to Panama City and Colon metropolitan areas amounted to approximately 57.1 million gallons per day.

FIRE PROTECTION

The Panama Canal Commission Fire Division and the Bomberos of the Republic of Panama, in accordance with the Panama Canal Treaty of 1977, are responsible for providing fire protection, firefighting, and rescue operation in Canal operating areas, defense sites, civilian and military areas of coordination and shipboard firefighting on all vessels in Canal area waters.

Commission responses for FY 1990 totaled 5,934, compared to 6,473 for FY 1989. The marine stand-by program for hazardous ships at the locks accounted for slightly more than 32 percent of the responses this year. This service is provided by Fire Division personnel with foam apparatuses on stand-by at the locks as a marine safety measure for certain vessels designated by the Marine Bureau because of dangers of certain cargos. The critical period is considered to be when a vessel is entering the locks.

There were 1,653 responses for ambulance service compared to 1,776 in FY 1989. This division also responded to a total of 91 bomb threats during FY 1990 as compared to 101 in FY 1989. Excluding ship fires, there were 453 fires this year, nearly a 14 percent reduction over FY 1989. Most incidents were grass and brush fires, which frequently occurred during the vulnerable dry season. Additional fire statistics appear in Table 16 of this report.

In accordance with the Panama Canal Treaty of 1977, formal joint training was conducted on 9 occasions with the Bomberos of the Republic of Panama as compared to 10 for last year. This figure is in addition to regularly occurring joint responses to fires and other emergencies. (NOTE: FY 1989 figures given above are revised from those reported in fiscal year 1989.)

CANAL PROTECTION

The Mission of the Canal Protection Division is to provide security for installations and facilities devoted to the operation, maintenance and management of the Panama Canal. During the year, security hardware

improvements continued at the most critical installations and support facilities.

Foremost is the installation of a centralized security control system to monitor all Commission security control functions for Canal protection. Since January 1990, the division has assisted the Panama National Police in the patrolling of Commission town sites and land and water areas of the Canal.

HEALTH AND SAFETY

The Occupational Health and Safety Divisions are components of the Office of Personnel Administration. The Personnel Director is the Designated Agency Safety and Health Official. The Panama Canal Commission is committed to ensuring a safe and healthful workplace for its employees, an objective which enjoys support from all levels of Commission management.

During fiscal year 1990, the Commission experienced 374 performance-of-duty accidents/illnesses for which employees required medical attention beyond first aid, as compared to 486 in fiscal year 1989. The incident rate continued its downward trend from 5.7 per 100 employees in fiscal year 1989 to 4.5 in fiscal year 1990. There were three fatalities in fiscal year 1990.

Workplace health and safety made headway in the Commission during fiscal year 1990, in spite of high stress levels leading up to and following U.S. military action (Operation Just Cause) in Panama. The President's Drug-Free Federal Workplace Plan was fully implemented with the addition to the Commission's program of random, follow-up and expanded applicant drug testing. The Employee Assistance Program continued its valuable role by providing rehabilitative services related to substance abuse, stress management counseling and training to an increased number of employees. In addition, formal workplace inspections and evaluations continued, with special emphasis on compliance with the Hazard Communication Policy; confined space surveys were conducted; an AIDS in the Workplace Policy was issued and related training provided; a Safety and Health Handbook of varied work procedures was distributed; Emergency Medical Technician classes were held; and productive communication was resumed with the Panama Social Security System regarding medical and compensation benefits. Likewise, the joint labor/management Safety and Health Committee continued to make positive contributions.

Chapter IV

ADMINISTRATION AND STAFF

PERSONNEL FORCE EMPLOYED AND PAYROLL

At the end of fiscal year 1990, the total Isthmian force of the Commission was 8,332 compared to 8,577 employees in fiscal year 1989. Of the total Isthmian force, 7,281 were permanent and 1,051 temporary. Of the permanent Isthmian work force, 6,280 (86.25%) were Panamanians, 927 (12.73%) were U.S. citizens and 74 (1.02%) were third country nationals. Eighteen persons, all U.S. citizens, were employed by the Commission in New Orleans and Washington, D.C.

The total Commission payroll was \$204.8 million in fiscal year 1990 compared to \$200.5 million in fiscal year 1989. Of the total Commission fiscal year 1990 payroll, \$150.7 million was paid to non-U.S. citizen employees and \$54.1 million to U.S. citizen employees.

EQUAL OPPORTUNITY PROGRAM

The Agency's FY 1989 Accomplishment Report for Minorities and Women and the FY 1990 Affirmative Action Program Plan for the hiring, placement, and advancement of people with disabilities were submitted to the Equal Employment Opportunity Commission as required.

Formal EEO complaints reflected an increase from the previous fiscal year by 64.7 percent. Four workshops on the prevention of sexual harassment in the workplace were conducted this year for a total of 88 employees. Black History Month, National Hispanic Heritage Month and National Disability Employment Awareness Month were commemorated. Four hundred and fifty employees attended Women's Week training during March 1990. Training in the EEO complaints process was provided to 70 employees and supervisors. Panamanian Preference Program monitoring continued to reflect increased participation of R.P. nationals at all levels. The composition of the work force by sex and minority group for FY 1990 is reflected below:

Sex

Male	87.4%
Female	12.6%

Minority Group

<i>Hispanics</i>	<i>Blacks</i>	<i>Whites</i>	<i>Orientals</i>	<i>Indians</i>
64.9%	22.7%	10.6%	1.5%	0.3%

PUBLIC AFFAIRS

The Office of Public Affairs is responsible for handling all public affairs, orientation services and informational activities of the Panama Canal Commission, both locally and internationally. In this connection, through the Commission publication *The Panama Canal Spillway*, local and international press releases, video tapes, films and exhibits, matters of related interest were disseminated to the work force, the public at large and the shipping industry in particular. The Graphic Branch assisted in this work by providing a broad range of photographic and audiovisual support services.

The workload of the Office of Public Affairs peaked for such high-interest events as the naming of an acting administrator and deputy administrator on January 1, 1990; the appointment of the Panamanian members to the Panama Canal Commission Board of Directors; activities in the aftermath of the December 20, 1989, U.S. military action; the murder of the Commission's Chief Financial Officer; the establishment of a temporary surcharge on certain Canal services for transiting vessels; and the appointment and final confirmation of a new Panamanian administrator and U.S. deputy administrator on September 20, 1990. Other activities of note included support to the local campaign against dengue fever through the production of a video in English and Spanish and a centerspread in the Spillway on the control of the *Aedes-aegypti* mosquito, and encouragement to Panamanian firms to compete for a greater share of the Commission's product and services procurement market through exhibits prepared in coordination with the General Services Bureau's Logistical Support Division for EXPOCOMER at the ATLAPA Convention Center and the David International Fair in David, Chiriqui Province. At year's end, Canal issues of interest to both local and international news media representatives appeared to focus on the type of agency Panama will need to create to administer the Canal after the year 2000; the need for and timing of Gaillard Cut widening; and the future of the Canal based on forecasts regarding factors such as economic fluctuations, changes in shipping routes and commodities, and the use of post-PANAMAX size vessels on alternate routes.

Except for news media representatives and congressional delegations, there were few visitors to the Canal at the beginning of the year, but monthly figures soon picked up to surpass last year's monthly average.

OMBUDSMAN

The Office of the Ombudsman was established pursuant to implementing legislation of the Panama Canal Treaty of 1977. The office responds to employees and dependents' complaints, grievances, and requests for information; and channels many issues to the proper authorities for processing under existing statutes or administrative regulations. Generally, the Office of the Ombudsman investigates administrative problems, inefficiencies, omissions and policy conflicts existing within the Panama Canal Commission and other U.S. Government agencies on the Isthmus of Panama resulting from the treaty. The office provides the widest latitude possible for handling problems affecting employee morale and the quality of life.

Effective the beginning of fiscal year 1990, the Office of the Ombudsman was relocated within the Office of Executive Administration. The duties of Ombudsman were merged with those of the Administrative Assistant to the Administrator. This action resulted in more effective use of resources and staff personnel to resolve a variety of problems perceived by employees and community residents.

The majority of the work load of the office at the beginning of the fiscal year continued to be related to the political unrest in Panama and its negative effects on Commission employees and Canal area residents. The sources of most of these difficulties were eliminated as a result of Operation Just Cause and the related restoration in Panama of a democratic Government. During the U.S. military action, Commission employees operated a Hotline from 7:00 a.m. to midnight during the period December 20-26 to collect and disseminate information of concern to Commission employees. In addition, they served to relay relevant information to U.S. forces about suspicious activities of supporters of the regime of former General Manuel Noriega. Hotline personnel worked out of their homes, handling hundreds of calls, researching questions and returning calls to employees and dependents, as well as private citizens in Panama City. Many of the questions received required extensive communication and coordination with U.S. military and Panama Canal Commission officials.

During the remainder of the year, Canal communities have experienced a gradual improvement in the Government of Panama's response to requests for some maintenance of roads, repairs of traffic lights and streetlights, and regular garbage collection. The quality of law enforcement, while still inadequate in many respects, has been maintained somewhat by joint patrols of U.S. military, Panama National Police and Panama Canal Commission guards.

The office maintains close contact with officers of the three Residents Advisory Committees as a means to assure close communication between the Commission and these community groups on matters of concern to residents in Commission housing areas.

INDUSTRIAL RELATIONS

With the end of the political strife in Panama in December 1989, attention gradually turned to routine labor relations activity within the agency. The firefighter collective bargaining agreement was again extended for a one-year period, effective April 7, pursuant to an automatic renewal provision. The professional bargaining unit agreement was renewed for a three-year period, April 11, 1990 through April 10, 1993.

The Federal Labor Relations Authority region with jurisdiction over the Commission gave notice on April 27, 1990, that, absent a settlement, an unfair labor practice complaint would be issued against the Commission for unilaterally terminating the option of non-preference eligible employees to appeal adverse actions through the agency's administrative procedure. The central issue involves a question of law and it is anticipated that the matter will be decided on the basis of the written record.

On August 8, the Federal Labor Relations Authority found negotiable a provision which had been disapproved during the post-audit review of the 1985 pilots agreement. The provision would credit each of two union representatives with three assignment bonuses for performing union representational functions. The decision should have no immediate impact, however, because the issue was settled in 1985 through an informal agreement which was modified in 1988 and will continue in effect until July 1993.

On August 31, 1990, the Federal Service Impasses Panel (FSIP) ruled that the pilots union should withdraw a proposal that the Commission pay a bonus of 14 times the hourly rate to pilots who transit vessels of 100 foot-beam or over through the locks while high mast lighting (HML) is in use. This is a significant decision because it represented a potential cost to the Commission in excess of 5 million dollars through the term of the current agreement in mid-1993, and it finally resolved a festering dispute which actually began eight years ago.

During FY 1990 eight cases were arbitrated. The Maritime/Metal Trades Council and the pilots union were involved in three cases each, and the firefighters union in the two remaining ones.

GENERAL COUNSEL

On December 23, 1985, the President signed into law the Panama Canal Amendments Act, Public Law 99-209, which authorized the Commission to settle all vessel-accident claims, regardless of the amount and irrespective of the situs of the accident. Prior to the enactment of these amendments, the Commission was precluded from considering claims of more than \$120,000 for out-of-locks accidents. At the time of the passage of The Panama Canal Amendments Act, 30 out-of-locks vessel-accident claims had been filed and were pending with either the United States Congress or the Commission. Since the enactment of the Amendments Act, the Commission has been steadily reducing this backlog of vessel-accident claims. By the end of fiscal year 1990, all 30 of these claims had been settled, and \$16,609,572 (out of a total of \$24,428,433 claimed) had been paid to the aggrieved shipowners.

The Amendments Act also permitted dissatisfied claimants to sue the Commission for out-of-locks vessel-accident damage. Two such lawsuits were filed before the passage of the Amendments Act and an additional nine have been filed since its enactment. By September 30, 1990, one case had been dismissed by the court, and 10 suits had been settled for payments totaling \$3,206,014. There are no lawsuits currently pending resolution.

The principal area of settlement in the Office of General Counsel for FY 90 was in the area of marine accidents where 26 claims for vessel damage, totaling \$2,663,459 were settled for \$1,547,709.

In July, 1990, the Office of General Counsel defended the Commission in a sixteen-day trial before Administrative Judge Wesley C. Jockisch of the Corps of Engineers Board of Contract Appeals. Over 40 witnesses testified and more than 500 documents were admitted into evidence in this contract appeal brought by the defaulted contractor, the performance bond surety, and the principal completing subcontractor. The appellants seek a judgement of \$6.1 million against the Commission for costs exceeding the contract price and allegedly incurred due to differing site conditions, a changed slope, and government delay during the construction of a ship tie-up station along the banks of the Panama Canal in 1982 through 1985. The Commission denies the appellants' allegations. The submission by counsel of proposed findings of facts and memoranda of law followed the trial, and a Board decision is expected by June, 1991.

Five new contract appeals were filed against the Commission during the fiscal year. This is a significant increase from previous years, reflecting the recent rise in contract actions at the Commission's Construction Division and the increased willingness of local contractors and attorneys to litigate contract disputes.

Chapter V

FINANCIAL REPORT

FINANCIAL STATEMENTS FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1990

The financial statements of the Panama Canal Commission, appearing as Tables 1 through 5, with accompanying notes, present the financial position of the Commission at September 30, 1990, and the results of its operations for the fiscal year then ended.

The accounts and statements of the Panama Canal Commission have been examined by the Office of Inspector General of the Commission and by Deloitte & Touche, a CPA firm under task order contract with the United States General Accounting Office. Detailed audit reports of the United States General Accounting Office are directed to the Congress and are presented as Congressional documents.

Summary information concerning the operating results and capital expenditures follows:

RESULTS OF OPERATIONS

Net revenue for fiscal year 1990 operations amounted to \$7.0 million. Unrecovered costs accumulated from previous years totaled \$9.7 million—\$0.6 million, \$1.8 million, and \$7.3 million from fiscal years 1987, 1988 and 1989, respectively. Therefore, pursuant to the limitations set forth in section 1341(b)(2) of the Panama Canal Act of 1979 (Public Law 96-70), all the net revenue from fiscal year 1990 was reduced by the unrecovered costs accumulated from previous fiscal years, leaving a balance of \$2.7 million to be recovered from subsequent revenues.

CAPITAL EXPENDITURES

Accrued capital expenditures for the year amounted to \$34.7 million. The principal expenditures were \$5.5 million for the fire protection system at Miraflores Locks, \$3.7 million for the replacement of motor vehicles, \$3.5 million for improvements to the electrical power and communication systems, \$2.1 million for the acquisition of tugs, \$1.3 million for the replacement of locomotive turntables, \$1.1 million for the replacement of

launches and launch engines, \$0.9 million for miscellaneous floating equipment, and \$0.9 million for improvements to Commission buildings.

Table 1.—Statement of Financial Position

Assets	1990	1989
PROPERTY, PLANT AND EQUIPMENT:		
At cost (Note 1c)	\$997,154,860	\$969,630,333
Less accumulated depreciation and valuation allowances (Notes 1e and 2)	<u>505,028,558</u>	<u>484,884,187</u>
	<u>492,126,302</u>	<u>484,746,146</u>
CURRENT ASSETS:		
Cash:		
U.S. Treasury account	103,870,166	93,226,977
Cash in commercial banks and on hand	10,027,246	6,077,070
Postal, other trust funds and cash in transit	583,187	2,537,751
	<u>114,480,599</u>	<u>101,841,798</u>
Accounts receivable	<u>13,330,765</u>	<u>11,371,717</u>
Inventories, less allowance for obsolete and excess inventory of \$800,000 and \$400,000 respectively (Note 1g)	<u>39,999,627</u>	<u>37,723,209</u>
Other current assets	<u>173,138</u>	<u>379,561</u>
	<u>167,984,129</u>	<u>151,316,285</u>
OTHER ASSETS:		
Deferred charges:		
Cost of early retirement benefits (Note 1h)	136,296,000	151,440,000
Cost of work injuries compensation benefits (Notes 1m and 5)	71,685,341	78,871,578
Retirement benefits to certain former employees of predecessor agencies (Note 1h)	5,587,000	6,186,000
Other	<u>492,149</u>	<u>492,149</u>
	<u>213,568,341</u>	<u>236,989,727</u>
Unrecovered costs due from subsequent revenues (Notes 1b and 4)	<u>2,712,659</u>	<u>9,728,161</u>
	<u>216,281,000</u>	<u>246,717,888</u>
TOTAL ASSETS	<u>\$876,391,431</u>	<u>\$882,780,319</u>

The accompanying notes are an integral part of this statement.

September 30, 1990 and 1989

Capital and Liabilities	1990	1989
CAPITAL:		
Investment of the United States Government:		
Interest-bearing (10.135% and 10.219%, respectively) (Note 6)	\$133,175,778	\$147,893,234
Non-interest-bearing	<u>340,663,355</u>	<u>325,398,450</u>
	473,839,133	473,291,684
CURRENT LIABILITIES:		
Accounts payable:		
U.S. Government agencies	3,926,959	4,146,044
Government of Panama	8,388,425	8,062,973
Other	<u>12,931,505</u>	<u>12,420,588</u>
	25,246,889	24,629,605
Accrued liabilities:		
Employees' leave	47,713,360	46,058,824
Salaries and wages	9,544,145	8,086,607
Cost of early retirement benefits (Note 1h)	15,144,000	15,144,000
Cost of work injuries compensation benefits (Notes 1m and 5)	8,018,170	6,536,705
Retirement benefits to certain former employees of predecessor agencies (Note 1h)	684,000	790,000
Employees' repatriation	833,000	857,000
Marine accident claims	19,531,203	15,387,115
Other	<u>2,535,655</u>	<u>1,766,127</u>
	104,003,533	94,626,378
Other current liabilities:		
Advances for capital-unexpended (Note 1d)	10,472,913	10,336,538
Other	<u>463,042</u>	<u>1,697,007</u>
	10,935,955	12,033,545
	<u>140,186,377</u>	<u>131,289,528</u>
DEFERRED CREDIT:		
Advances for capital being amortized (Note 1d)	<u>54,248,871</u>	<u>46,898,321</u>
LONG-TERM LIABILITIES AND RESERVES:		
Cost of early retirement benefits (Note 1h)	121,152,000	136,296,000
Cost of work injuries compensation benefits (Notes 1m and 5)	63,667,171	72,334,873
Retirement benefits to certain former employees of predecessor agencies (Note 1h)	4,903,000	5,396,000
Employees' repatriation	7,340,000	6,875,000
Lock overhauls (Note 1i)	1,891,632	371,865
Marine accidents (Note 1j)	6,000,000	7,000,000
Casualty losses (Note 1j)	993,865	993,865
Floating equipment overhaul (Note 1k)	<u>2,169,382</u>	<u>2,033,183</u>
	208,117,050	231,300,786
TOTAL CAPITAL AND LIABILITIES.....	<u><u>\$876,391,431</u></u>	<u><u>\$882,780,319</u></u>

The accompanying notes are an integral part of this statement.

Table 2.—Statement of Operations
Fiscal Years Ended September 30, 1990 and 1989

	<i>1990</i>	<i>1989</i>
OPERATING REVENUES:		
Tolls revenue	\$355,557,957	\$329,765,627
Other revenues	<u>119,115,510</u>	<u>106,034,363</u>
 Total operating revenues	 <u>474,673,467</u>	 <u>435,799,990</u>
OPERATING EXPENSES:		
Payments to the Government of Panama:		
Public services	10,000,000	10,000,000
Fixed annuity	10,000,000	10,000,000
Tonnage	<u>58,457,476</u>	<u>59,819,225</u>
	78,457,476	79,819,225
Maintenance of channels and harbors	40,236,327	36,506,857
Navigation service and control	82,746,857	79,796,645
Locks operation	51,318,435	48,988,652
General repair, engineering and maintenance services	24,485,404	22,004,849
Supply and logistics	22,161,520	20,488,618
Utilities	33,615,047	30,016,519
Housing operations	4,894,692	5,418,893
General and administrative	75,051,376	76,587,612
Interest on interest-bearing investment (Note 6)	15,113,342	13,878,234
Other	<u>39,577,490</u>	<u>29,613,382</u>
 Total operating expenses	 <u>467,657,966</u>	 <u>443,119,486</u>
 NET OPERATING REVENUE (LOSS) (Notes 1b and 4)	 <u>\$7,015,501</u>	 <u>\$(7,319,496)</u>

The accompanying notes are an integral part of this statement.

**Table 3A.—Statement of Changes in the Investment of the United States Government
Fiscal Year Ended September 30, 1990**

	<i>Invested Capital</i>		<i>Total</i>
	<i>Interest-Bearing</i>	<i>Non-Interest-Bearing</i>	
INVESTMENT AT OCTOBER 1, 1989.....	<u>\$147,893,234</u>	<u>\$325,398,450</u>	<u>\$473,291,684</u>
INCREASES IN INVESTMENT:			
Prior year receipts deposited into U.S. Treasury		676,875	676,875
Expenditures from Panama Canal Revolving Fund	469,595,421	(469,595,421)	.....
Net revenue (Notes 1b and 4) . . . . .	.....	<u>7,015,501</u>	<u>7,015,501</u>
	<u>469,595,421</u>	<u>(461,903,045)</u>	<u>7,692,376</u>
DECREASES IN INVESTMENT:			
Tolls and other receipts deposited into Panama Canal Revolving Fund	484,188,786	(484,188,786)	.....
Due U.S. Treasury for undeposited receipts . . . . .	.....	5,335	5,335
Property transferred to other U.S. Government agencies	124,091	.....	124,091
Recovery of prior years unrecovered costs (Notes 1b and 4) . . . . .	.....	<u>7,015,501</u>	<u>7,015,501</u>
	<u>484,312,877</u>	<u>(477,167,950)</u>	<u>7,144,927</u>
INVESTMENT AT SEPTEMBER 30, 1990	<u>\$133,175,778</u>	<u>\$340,663,355</u>	<u>\$473,839,133</u>
	(Note 6)		

The accompanying notes are an integral part of this statement.

**Table 3B.—Statement of Changes in the Investment of the United States Government
Fiscal Year Ended September 30, 1989**

	<i>Invested Capital</i>		<i>Total</i>
	<i>Interest-Bearing</i>	<i>Non-Interest-Bearing</i>	
INVESTMENT AT OCTOBER 1, 1988.....	<u>\$102,773,553</u>	<u>\$371,024,286</u>	<u>\$473,797,839</u>
INCREASES IN INVESTMENT:			
Prior year receipts deposited into U.S. Treasury		420,341	420,341
Expenditures from Panama Canal Revolving Fund	486,757,576	(486,757,576)	.....
Unrecovered costs due from subsequent revenues (Notes 1b and 4) .....	.....	<u>7,319,496</u>	<u>7,319,496</u>
	<u>486,757,576</u>	<u>(479,017,739)</u>	<u>7,739,837</u>
DECREASES IN INVESTMENT:			
Tolls and other receipts deposited into Panama Canal Revolving Fund	441,388,274	(441,388,274)	.....
Due U.S. Treasury for undeposited receipts .....	.....	676,875	676,875
Property transferred to other U.S. Government agencies	249,621	.....	249,621
Net loss (Notes 1b and 4).....	.....	<u>7,319,496</u>	<u>7,319,496</u>
	<u>441,637,895</u>	<u>(433,391,903)</u>	<u>8,245,992</u>
INVESTMENT AT SEPTEMBER 30, 1989	<u>\$147,893,234</u>	<u>\$325,398,450</u>	<u>\$473,291,684</u>
	(Note 6)		

The accompanying notes are an integral part of this statement.

Table 4.—Statement of Cash Flows

	INCREASE (DECREASE) IN CASH	
Cash Flows from Operating Activities:	1990	1989
Cash received:		
Tolls	\$355,557,957	\$329,765,627
Other collections	130,522,711	109,934,767
(Increase)/decrease in receivables	<u>(1,891,882)</u>	<u>1,687,880</u>
Total cash received	<u>484,188,786</u>	<u>441,388,274</u>
Cash disbursed:		
Operating expenditures	(427,033,108)	(415,892,640)
Interest paid	(15,123,945)	(13,846,542)
(Increase)/decrease in inventories	(2,276,418)	(794,260)
Increase/(decrease) in liabilities	<u>10,695,798</u>	<u>(20,964,032)</u>
Total cash disbursed	<u>(433,737,673)</u>	<u>(451,497,474)</u>
Net cash provided by/(used in) operating activities	<u>50,451,113</u>	<u>(10,109,200)</u>
Cash Flows from Capital Activities:		
Capital expenditures	(34,670,600)	(39,584,851)
Increase/(decrease) in liabilities	<u>(1,187,148)</u>	<u>4,324,748</u>
Net cash provided by/(used in) capital activities	<u>(35,857,748)</u>	<u>(35,260,103)</u>
Cash Flows from Postal and Trust funds:		
Postal funds	(8,019)	(5,279)
Trust funds	<u>(1,946,545)</u>	<u>100,242</u>
Net cash provided by/(used in) postal and trust fund activities	<u>(1,954,564)</u>	<u>94,963</u>
Net increase/(decrease) in cash	12,638,801	(45,274,340)
Cash, beginning of year	<u>101,841,798</u>	<u>147,116,138</u>
Cash, end of year	<u>\$114,480,599</u>	<u>\$101,841,798</u>

The accompanying notes are an integral part of this statement.

Fiscal Years Ended September 30, 1990 and 1989

RECONCILIATION OF NET REVENUE (LOSS) TO NET CASH PROVIDED BY
OPERATING ACTIVITIES

	1990	1989
Net Revenue (Loss)	<u>\$7,015,501</u>	<u>\$(7,319,496)</u>
Adjustments to reconcile net income to net cash provided by operating activities:		
Adjustments not requiring outlay of cash:		
Depreciation	23,392,682	22,963,018
Provision for lock overhauls	11,402,000	6,353,000
Provision for marine and casualty losses	5,826,136	(5,642,936)
Provision for floating equipment overhauls	4,420,000	4,934,000
Advances for capital	10,472,913	4,451,618
Other	<u>1,844,195</u>	<u>720,370</u>
Total adjustments not requiring outlay of cash	<u>57,357,926</u>	<u>33,779,070</u>
Adjustments requiring outlay of cash:		
Lock overhauls expenditures	(9,882,233)	(6,192,767)
Marine and casualty losses expenditures	(6,826,136)	(4,988,460)
Floating equipment overhauls expenditures	<u>(4,283,801)</u>	<u>(4,889,526)</u>
Total adjustments requiring outlay of cash ..	<u>(20,992,170)</u>	<u>(16,070,753)</u>
Changes in operating assets and liabilities:		
(Increase)/decrease in receivables	(1,891,882)	1,687,880
(Increase)/decrease in inventories	(2,276,418)	(794,260)
(Increase)/decrease in other assets	542,358	(427,609)
Increase/(decrease) in liabilities	<u>10,695,798</u>	<u>(20,964,032)</u>
Total changes in operating assets and liabilities	<u>7,069,856</u>	<u>(20,498,021)</u>
Total adjustments	<u>43,435,612</u>	<u>(2,789,704)</u>
Net cash provided by/(used in) operating activities	<u>\$50,451,113</u>	<u>\$(10,109,200)</u>

The accompanying notes are an integral part of this statement.

**Table 5.—Statement of Property, Plant and Equipment
September 30, 1990 and 1989**

	1990		1989	
	Estimated service life	Cost	Cost	Depreciation and valuation allowances
Titles and treaty rights	40 years	\$14,728,889	\$14,728,889	\$5,983,612
Interest during construction .....	.....	50,892,311	50,892,311	50,892,311
Canal excavation, fills and embankments	15-100 years	347,758,177	347,753,732	140,138,508
Canal structures and equipment	4-100 years	350,010,308	326,975,387	157,356,034
Supporting and general facilities	3-100 years	154,327,319	146,352,516	87,790,847
Facilities held for future use	10-100 years	3,330,878	3,330,878	2,577,077
Plant additions in progress .....	.....	35,961,180	39,450,822	.....
Suspended construction projects .....	.....	40,145,798	40,145,798	40,145,798
TOTAL (Notes 1c, 1e and 2)		\$997,154,860	\$969,630,333	\$484,884,187

The accompanying notes are an integral part of this statement.

NOTES TO FINANCIAL STATEMENTS

1. Summary of Significant Accounting Policies.

A summary of significant accounting policies follows:

a. *Accounting and Reporting.* As required by section 1311(a) of the Panama Canal Act of 1979, Public Law 96-70 (hereafter referred to as the "Act"), the accounts of the Commission are maintained pursuant to the Accounting and Auditing Act of 1950. The Accounting and Auditing Act of 1950 requires that the principles, standards and related requirements be met, as prescribed by the Comptroller General of the United States, after consulting with the Secretary of the Treasury and the Director of the Office of Management and Budget concerning their accounting, financial reporting and budgetary needs. The Accounting and Auditing Act of 1950 also requires that the accounts be maintained on an accrual basis.

b. *Cost recovery.* As required by section 1341(e)(1) of the Act, the application of generally accepted accounting principles to the Panama Canal Commission, a United States Government agency comparable to a rate-regulated public utility, determines the manner in which costs are recognized. The basis for tolls rates is prescribed in section 1602(b) of the Act. This section of the Act, known as the "statutory tolls formula," provides that:

"Tolls shall be prescribed at rates calculated to produce revenues to cover as nearly as practicable all costs of maintaining and operating the Panama Canal, together with the facilities and appurtenances related thereto, including unrecovered costs incurred on or after the effective date of this Act, interest, depreciation, working capital, payments to the Republic of Panama pursuant to paragraph 5 of Article III and paragraph 4(a) and (b) of Article XIII of the Panama Canal Treaty of 1977, and capital for plant replacement, expansion, and improvements. Tolls shall not be prescribed at rates calculated to produce revenues sufficient to cover payments to the Republic of Panama pursuant to paragraph 4(c) of Article XIII of the Panama Canal Treaty of 1977."

Under this statutory tolls formula, any unrecovered costs are to be recovered from subsequent revenues. The amount for recovery from subsequent revenues is transferred from Invested Capital to an account within the Other Assets classification. Unrecovered costs are charged back to Invested Capital to the extent subsequent annual revenues exceed annual costs.

c. *Property, Plant and Equipment.* Property, plant and equipment are recorded at cost, or if acquired from another United States Government agency, at the value determined by the Director of the Office of

Management and Budget. Administrative and other related general expenses are recovered currently and therefore not capitalized. The cost of minor items of property, plant and equipment is charged to expense as incurred.

d. *Advances for Capital.* A portion of tolls in excess of depreciation recoveries may be programmed annually by the Board of Directors for plant replacement, expansion, or improvements. Such funds are considered capital advances from Canal users. Upon utilization, these advances are amortized through an offset to depreciation expense in an amount calculated to approximate the depreciation on assets acquired with such advances. In fiscal years 1990 and 1989, no amounts from tolls were programmed for such purpose.

At the direction of the Board of Directors, a system was implemented in fiscal year 1983 whereby shippers, for a fee, can make an advance reservation for a vessel transit. Such funds are considered capital advances from Canal users and upon utilization, the advances are amortized through an offset to depreciation expense in an amount calculated to approximate the depreciation on assets acquired with such advances. This system generated funds of \$10.5 million in fiscal year 1990 and \$4.5 million in fiscal year 1989.

e. *Depreciation.* Property, plant and equipment are depreciated over their estimated service lives at rates computed using a straight-line method with additional annual depreciation, identified as composite, to provide for premature plant retirements.

The recurring costs of dredging the waterway are charged to expense. Non-recurring dredging costs for substantial improvements and betterments to the waterway are considered additions to plant and are capitalized and depreciated over their estimated service lives.

f. *Accounts Receivable.* Uncollectible accounts receivable of the Panama Canal Commission are recognized as a reduction in revenue when written off. Any subsequent collections of Commission accounts receivable previously written off are recorded as revenue.

g. *Inventories.* Operating materials and supplies are stated at average cost, plus cost of transportation to the ultimate destination on the Isthmus of Panama. An allowance has been established to reflect the estimated cost of obsolete and excess stock.

h. *Retirement Benefits.* Employer contributions to the United States Civil Service Retirement System, to the Federal Employee Retirement System, and to the Republic of Panama Social Security System are charged to expense. The Commission has no liability for future payments to employees under these systems.

Non-United States citizen employees, who retired from predecessor agencies prior to October 5, 1958, are not covered by the United States Civil Service Retirement System but do receive benefits under a separate annuity plan. Payments made under this annuity plan are recorded as a current year expense. Annual amounts expended were \$1.1 million in fiscal year 1990

and \$1.3 million in fiscal year 1989. The Commission's liability for future annuity payments to these former employees or their eligible widows is reflected in the statement of financial position as retirement benefits to certain former employees of predecessor agencies and an equal amount is recorded as a deferred charge.

As required by the Act, the Panama Canal Commission is liable for the increase in the unfunded liability of the United States Civil Service Retirement Fund which is attributable to benefits payable from that fund to, or on behalf of, employees and their survivors under the early retirement provisions of the Act. The annual installment to liquidate the increased liability is determined by the Office of Personnel Management.

i. *Reserve for Lock Overhauls.* A reserve is provided through an annual charge to expense to cover the estimated cost of periodic lock overhauls.

j. *Reserve for Casualty Losses.* A reserve is provided through an annual charge to expense to cover the estimated cost of marine accidents and other casualty losses.

k. *Reserve for Floating Equipment Overhauls.* A reserve is provided through an annual charge to expense to cover the estimated cost of overhauls to the Commission tugboat fleet.

l. *Housing Use Rights.* No monetary value is assigned to the rights granted to the United States Government by the Republic of Panama to use Canal Area housing transferred to the Government of Panama under the terms of the Panama Canal Treaty of 1977. The cost to manage, maintain and provide livability improvements to these quarters is charged to expense. Rental income is included in other revenues.

m. *Work Injuries Compensation Benefits.* The Panama Canal Commission is liable for the cost of all benefits due under the Federal Employees' Compensation Act (FECA) which provides compensation for performance of duty injuries for eligible employees. The costs of the FECA program are recognized over the life of the Treaty.

2. Plant Valuation Allowances.

At July 1, 1951, certain valuation allowances for property, plant and equipment transferred from the Panama Canal (agency) to the Panama Canal Company and the Canal Zone Government were established, to reduce to usable value the costs of the assets transferred. At October 1, 1979, such valuation allowances as were applicable to the assets transferred from the Panama Canal Company and the Canal Zone Government to the Panama Canal Commission were carried forward and are comprised of: (a) \$4.1 million at September 30, 1990 and 1989, to reduce to usable value the cost of property, plant and equipment transferred; (b) \$50.9 million at September 30, 1990 and 1989, to offset interest costs imputed for the original Canal construction period; and (c) \$42.3 million at September 30, 1990 and 1989, to offset the cost of defense facilities and suspended construction projects, the latter being principally the partial construction of a third set of locks abandoned in the early part of World War II.

3. Budgetary Resources.

a. Cash, accounts receivable, and the borrowing authority are the resources used to determine the Commission's solvency position as prescribed in Section 86.6 Office of Management and Budget Circular A-34, Instructions on Budget Execution, under which the incurring of obligations in excess of budgetary resources is a violation of the Antideficiency Act. All cash exceeding current operating requirements is kept on deposit with the U.S. Treasury.

b. The Panama Canal Commission has authority to borrow funds from the U.S. Treasury not to exceed \$100 million outstanding at any time for any of the purposes of the Commission. No funds were borrowed during fiscal years 1990 and 1989.

4. Unrecovered Costs due from Subsequent Revenues.

Pursuant to the provisions of sections 1341(b)(2) and 1602(b) of the Act, all unrecovered costs from previous years operations must be recovered before determining any net operating revenues due to the Government of Panama, as provided for under Article XIII paragraph 4(c) of the Panama Canal Treaty of 1977. The cumulative unrecovered costs from fiscal years 1989, 1988 and 1987 totaled \$9.7 million. The net operating revenue for fiscal year 1990 was \$7.0 million, which when netted against the outstanding unrecovered costs, leaves a balance of \$2.7 million to be recovered from subsequent revenues.

5. Cost of Work Injuries Compensation.

The Commission administers a program to compensate certain employees for death and disability resulting from performance of duty injuries or illnesses as set forth in the Federal Employees' Compensation Act. All United States citizen employees are eligible for coverage, as are non-United States citizen employees hired prior to October 1, 1979. As provided by FECA, employees and certain dependents are beneficiaries for various periods that can extend to life.

The liability and deferred charge recorded in these statements reflect the payments due to a Department of Labor fund established pursuant to Public Law 100-705. The Department of Labor will be reimbursed from this fund for all expected future payments for accidents, adjusted for inflation and interest earned. An evaluation as of September 30, 1989, was prepared by an independent actuarial firm. The values in that report were used to adjust the assets and liabilities at year-end 1989. The report also served as the basis for determining the adequacy of the assets and liabilities at year-end 1990.

6. Interest-Bearing Investment of the United States Government.

The interest-bearing investment of the United States Government in the Panama Canal is determined based on section 1603(a) of the Act. The interest-bearing investment of the United States Government was \$133.2 million at September 30, 1990 and \$147.9 million at September 30, 1989.

7. Extraordinary Activities.

Since April 1988, the Commission has incurred a series of unusual and extraordinary costs due to the political situation that existed in Panama because of the Noriega regime. These costs were incurred in order to insure the proper and safe operation of the Canal in the face of growing harassment of Commission employees by that regime. Costs incurred totaled \$6.8 million in fiscal year 1990 and \$4.6 million in fiscal year 1989.

The Board of Directors has approved the recovery of these costs through the use of a temporary 20 percent surcharge on linehandling and tug service charges. The surcharge will be terminated on February 28, 1991.

8. Contingent Liabilities and Commitments.

In addition to recorded liabilities, the estimated maximum contingent liability which could result from pending claims and lawsuits was \$11.9 million at September 30, 1990 and \$10.1 million at September 30, 1989. In the opinion of management and the Commission's General Counsel, these pending claims and lawsuits will be resolved with no material adverse effect on the financial condition of the agency.

Commitments under uncompleted construction contracts and unfilled purchase orders amounted to \$34.3 million at September 30, 1990 and \$38.0 million at September 30, 1989. Of these amounts, unfilled prepaid purchase orders totaled less than \$0.1 million as of September 30, 1990 and \$0.1 million as of September 30, 1989.

Cash and negotiable securities of a kind acceptable by the United States Government in the amount of \$13.2 million were held by the United States depositories designated by the Panama Canal Commission at September 30, 1990 and \$12.4 million at September 30, 1989, to guarantee payment by third parties of their obligations.

The Panama Canal Treaty of 1977, Article XIII, paragraph 4(c), provides that an annual amount of up to \$10 million per year be paid to the Government of Panama out of operating revenues to the extent that such revenues exceed expenditures. Payment to the Government of Panama is subject to the limitations set forth in section 1341(e) of the Act. In the event operating revenues in any year do not produce a surplus sufficient to cover this payment, the unpaid balance shall be paid from operating surpluses in future years up to the amount available from these surpluses. As of September 30, 1990, the balance contingently payable to the Government of Panama amounts to \$101.1 million. As of September 30, 1989, the balance contingently payable to the Government of Panama amounted to \$91.1 million. However, as set forth in the Exchange of Instruments of Ratification of Panama Canal Treaties paragraph (a)(4) and in section 1341(d) of the Act, nothing may be construed as obligating the United States to pay after the date of the termination of the Treaty, any unpaid balance, accumulated before such date.

9. Treaty Impact.

On September 7, 1977, the United States of America and the Republic of

Panama signed the Panama Canal Treaty of 1977. The Treaty provided for the establishment of the Panama Canal Commission on October 1, 1979, to assume certain operational responsibilities for the Canal until December 31, 1999. When the Treaty terminates on December 31, 1999, the Republic of Panama shall assume total responsibility for the management, operation, and maintenance of the Panama Canal, which shall be turned over in operating condition and free of liens and debts, except as the two parties may otherwise agree. The effects of these long-range requirements are not considered in the financial statements.

Chapter VI

STATISTICAL TABLES

Shipping Statistics

Table 1.—Panama Canal Traffic—Fiscal Years 1981 Through 1990

Fiscal year	Total traffic			Traffic assessed tolls on net tonnage basis		Traffic assessed tolls on displacement tonnage basis	
	Number of transits	Tolls	Long tons of cargo	Number of transits	Panama Canal net tonnage	Number of transits	Displacement tonnage
OCEANGOING COMMERCIAL TRAFFIC ¹							
1981	13,884	301,762,600	171,221,762	13,847	188,656,491	37	111,418
1982	14,009	323,958,366	185,452,332	13,976	202,884,207	33	129,684
1983	11,707	285,983,805	145,590,759	11,668	169,503,918	39	132,431
1984	11,230	286,677,844	140,470,818	11,199	162,335,342	31	116,335
1985	11,515	298,497,802	138,643,243	11,498	168,941,997	17	86,623
1986	11,925	321,073,748	139,945,181	11,901	182,750,830	24	73,631
1987	12,230	328,372,714	148,690,380	12,206	186,416,485	24	130,129
1988	12,234	337,866,211	156,482,641	12,209	191,506,903	25	106,599
1989	11,989	327,850,613	151,636,113	11,964	185,769,083	25	101,710
1990	11,941	353,725,982	157,072,979	11,904	181,604,590	37	153,514
OCEANGOING U.S. GOVERNMENT TRAFFIC ¹							
1981	89	1,241,442	301,776	68	705,936	21	143,121
1982	110	1,546,746	285,451	67	794,282	43	309,206
1983	125	1,721,925	354,873	77	812,840	48	350,699
1984	137	2,388,272	329,607	88	1,131,865	49	410,682
1985	129	2,223,938	259,524	85	1,148,311	44	248,967
1986	85	1,553,037	176,853	53	708,616	32	309,161
1987	78	1,384,125	205,701	46	662,286	32	239,023
1988	69	1,361,393	296,140	46	714,055	23	129,545
1989	74	1,806,539	224,121	62	994,711	12	103,020
1990	91	1,707,864	248,442	63	821,340	28	193,160
FREE OCEANGOING TRAFFIC ^{1 2}							
1981	11	.....	.....	4	2,248	7	8,544
1982	23	.....	.....	9	5,010	14	21,903
1983	14	.....	2,504	9	9,119	5	5,986
1984	17	.....	.....	4	2,224	13	21,025
1985	10	.....	20	4	2,731	6	8,771
1986	13	.....	.....	1	556	12	20,759
1987	5	.....	5	4	2,224	1	1,300
1988	15	.....	.....	6	3,312	9	16,765
1989	12	.....	.....	6	3,312	6	9,709
1990	20	.....	6	4	2,218	16	30,530
TOTAL OCEANGOING TRAFFIC ¹							
1981	13,984	303,004,042	171,523,538	13,919	189,364,675	65	263,083
1982	14,142	325,505,112	185,737,783	14,052	203,683,499	90	460,793
1983	11,846	287,705,730	145,948,136	11,754	170,325,877	92	489,116
1984	11,384	289,066,116	140,800,425	11,291	163,469,431	93	548,042
1985	11,654	300,721,740	138,902,787	11,587	170,093,039	67	344,361
1986	12,023	322,626,785	140,122,034	11,955	183,460,002	68	403,551
1987	12,313	329,756,840	148,896,086	12,256	187,080,995	57	370,452
1988	12,318	339,227,604	156,778,781	12,261	192,224,270	57	252,909
1989	12,075	329,657,153	151,860,234	12,032	186,767,106	43	214,439
1990	12,052	355,433,846	157,321,426	11,971	182,428,148	81	377,204

Table 1.—Panama Canal Traffic—Fiscal Years 1981 Through 1990
(Continued)

Fiscal year	Total traffic			Traffic assessed tolls on net tonnage basis		Traffic assessed tolls on displacement tonnage basis	
	Number of transits	Tolls	Long tons of cargo	Number of transits	Panama Canal net tonnage	Number of transits	Displacement tonnage
SMALL COMMERCIAL TRAFFIC³							
1981	791	65,604	1,355	788	44,962	3	279
1982	830	73,228	928	826	50,399	4	315
1983	810	73,887	669	810	48,033	....	.....
1984	802	76,921	652	800	48,008	2	145
1985	793	73,710	468	792	45,694	1	110
1986	912	89,577	3,704	904	55,249	8	470
1987	852	90,829	3,282	852	55,827	....	.....
1988	844	79,805	1,422	842	49,245	2	64
1989	997	96,158	8,311	996	60,156	1	430
1990	1,017	115,180	1,441	1,016	66,999	1	98
SMALL U.S. GOVERNMENT TRAFFIC³							
1981	225	10,712	2	16	751	209	10,431
1982	241	10,757	.....	12	415	229	10,973
1983	242	11,406	5	12	332	230	11,177
1984	241	11,998	.....	8	336	233	11,282
1985	273	12,464	.....	15	773	258	11,113
1986	316	17,840	.....	20	627	296	16,407
1987	236	11,106	.....	25	987	211	9,572
1988	246	11,917	.....	21	901	225	10,375
1989	287	12,316	.....	13	738	274	11,018
1990	240	8,931	.....	23	903	217	6,684
SMALL FREE TRAFFIC^{2 3}							
1981	50	.....	.....	41	2,613	9	1,012
1982	58	.....	70	40	2,803	18	1,172
1983	56	.....	8	39	2,321	17	2,010
1984	96	.....	59	86	4,637	10	1,360
1985	46	.....	3	32	1,721	14	1,103
1986	27	.....	80	20	1,371	7	674
1987	43	.....	57	26	1,451	17	1,012
1988	33	.....	.....	15	1,081	18	1,189
1989	30	.....	3	14	878	16	1,141
1990	16	.....	.....	5	249	11	800
TOTAL PANAMA CANAL TRAFFIC							
1981	15,050	303,080,358	171,524,895	14,764	189,413,001	286	274,805
1982	15,271	325,589,097	185,738,781	14,930	203,737,116	341	473,253
1983	12,954	287,791,023	145,948,818	12,615	170,376,563	339	502,303
1984	12,523	289,155,035	140,801,136	12,185	163,522,412	338	560,829
1985	12,766	300,807,914	138,903,258	12,426	170,141,227	340	355,587
1986	13,278	322,734,202	140,125,818	12,899	183,517,249	379	421,102
1987	13,444	329,858,775	148,899,425	13,159	187,139,260	285	381,036
1988	13,441	339,319,326	156,780,203	13,139	192,275,497	302	264,537
1989	13,389	329,765,627	151,868,548	13,055	186,828,878	334	227,028
1990	13,325	355,557,957	157,322,868	13,015	182,496,299	310	384,786

¹ Ongoing traffic includes ships of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on displacement basis (dredges, warships, etc.).

² Free traffic includes ships of the Colombian and Panamanian Governments and ships transiting for repair by the Commission.

³ Includes vessels under 300 net tons, Panama Canal measurement (or under 500 displacement tons for vessels assessed on displacement tonnage).

Table 2.—Oceangoing Commercial Traffic by Months—Fiscal Years 1990 and 1989

	Number of Transits		Panama Canal Net Tonnage		Long Tons of Cargo		Tolls	
	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89
October	1,021	981	16,360,994	15,905,144	14,027,059	12,602,106	\$31,851,517	\$28,126,895
November	964	973	15,091,501	15,902,125	13,243,670	12,155,922	29,324,107	27,931,806
December	858	1,027	13,406,458	16,632,504	12,027,765	12,707,112	26,047,287	29,287,588
January	1,050	1,021	15,630,132	15,838,234	13,299,098	12,348,014	30,608,718	27,867,091
February	940	933	14,062,994	14,518,718	11,746,814	11,752,642	27,430,212	25,554,346
March	1,094	1,066	15,690,218	15,764,981	12,903,998	13,419,534	30,501,502	27,905,627
April	1,041	1,080	15,322,207	16,016,195	12,808,903	12,620,697	29,976,244	28,289,526
May	1,014	1,044	15,605,266	15,958,912	13,676,274	12,405,048	30,276,197	27,968,462
June	958	932	14,135,376	14,277,643	12,223,942	12,141,483	27,628,594	25,251,494
July	1,015	1,052	14,977,088	14,955,575	13,612,363	12,887,341	29,181,655	26,614,606
August	997	960	15,713,962	15,534,778	14,187,644	13,973,128	30,707,793	27,434,384
September	989	920	15,608,394	14,464,274	13,315,449	12,623,086	30,192,155	25,618,788
Total	11,941	11,989	181,604,590	185,769,083	157,072,979	151,636,113	\$353,725,982	\$327,850,613
Average per month	995	999	15,133,716	15,480,757	13,089,415	12,636,343	\$29,477,165	\$27,320,884

NOTE: The above includes only commercial vessels of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on a displacement tonnage basis. Statistics on these vessels, except as relates to displacement tonnage, have been included in the table above.

Table 3.—Canal Traffic¹ by Flag of Vessel—Fiscal Year 1990

Flag	Number of transits	Measured tonnage			Long tons of cargo
		Panama Canal net	Registered gross ²	Tolls	
Algeria	1	16,421	20,253	\$33,006	29,526
Antigua-Barbuda	18	43,017	45,025	80,253	29,103
Argentina	8	101,081	96,931	205,846	143,622
Australia	1	.....	.....	4,547	.....
Austria	5	119,529	144,260	240,253	190,303
Bahamas	372	4,539,675	5,197,262	8,960,704	3,518,352
Bangladesh	2	20,446	26,250	41,096	7,414
Belgium	32	623,193	758,345	1,243,916	682,487
Bermuda	10	108,443	131,121	207,106	98,858
Brazil	32	515,455	631,179	1,050,368	633,035
Bulgaria	10	100,361	121,750	189,751	65,563
Burma	35	665,000	775,293	1,327,077	859,455
Canada	8	55,705	65,285	102,072	31,202
Cayman Islands	11	93,622	102,806	187,046	104,941
Chile	82	808,254	904,853	1,610,393	875,529
Colombia	166	1,490,338	1,383,078	2,975,045	346,312
Cuba	116	756,373	867,008	1,496,600	669,100
Cyprus	542	5,652,439	6,445,123	11,101,677	6,977,625
Czechoslovakia	10	161,618	190,315	309,790	203,239
Denmark	227	4,968,871	6,047,987	9,912,567	3,730,400
East Germany	54	299,556	356,214	585,633	145,531
Ecuador	337	3,037,223	3,509,933	5,824,959	2,397,231
Egypt	1	19,573	24,106	39,342	32,283
Faroës	1	1,494	1,521	2,390	.....
France	44	810,281	743,770	1,617,681	575,062
Greece	585	10,234,986	11,728,097	19,975,441	14,169,957
Guatemala	6	21,024	24,774	40,822	27,293
Honduras	29	77,699	87,526	152,894	80,599
Hong Kong	13	262,961	327,449	502,864	356,802
Iceland	1	716	1,138	1,146	.....
India	39	596,521	707,305	1,152,433	759,001
Iran	6	66,397	86,199	124,385	20,086
Israel	68	1,418,863	1,849,070	2,851,915	1,034,472
Italy	125	1,837,575	2,211,342	3,601,001	1,613,579
Japan	501	8,352,056	6,088,762	15,782,973	2,650,649
Jordan	1	8,689	9,888	17,465	12,948
Kuwait	33	399,569	508,808	803,134	423,143
Lebanon	2	16,592	20,292	33,350	18,117
Liberia	1,479	29,721,900	30,162,153	57,375,896	24,921,423
Malaysia	30	487,806	568,968	942,964	650,836
Malta	114	1,351,533	1,653,258	2,607,524	1,699,774
Marshall Islands	13	342,442	393,753	688,308	281,844
Mauritius	2	34,539	40,929	63,714	32,531
Mexico	53	919,058	1,116,048	1,691,483	642,756
Morocco	8	69,800	86,976	125,989	44,572
Netherlands	309	3,287,318	3,376,410	6,457,628	2,131,986
Netherlands-Antilles	5	52,848	62,369	95,932	45,264
Norway	660	10,966,003	12,103,250	21,378,150	11,908,323
Panama	1,866	28,259,036	29,087,473	54,507,185	21,798,637
People's Republic of China	216	4,118,561	5,078,349	8,196,201	5,222,169
Peru	88	847,121	920,430	1,699,615	982,193
Philippines	364	7,098,492	7,882,374	13,917,398	9,870,404
Poland	95	947,343	1,142,842	1,892,069	869,155
Portugal	1	18,156	24,997	36,494	30,755
Qatar	4	48,136	60,176	96,753	49,995
Romania	4	67,034	76,272	120,996	36,476
Samoa	3	27,597	31,650	55,470	17,621
Saudi Arabia	15	124,440	137,254	226,781	82,043
Singapore	298	4,704,382	4,520,352	9,126,546	3,056,834

Table 3.—Canal Traffic¹ by Flag of Vessel—Fiscal Year 1990—Continued

Flag	Number of transits	Measured tonnage			Long tons of cargo
		Panama Canal net	Registered gross ²	Tolls	
Somali Republic	2	18,630	21,086	37,446	10,221
South Korea	171	4,026,349	4,128,347	7,851,793	2,801,370
Spain	30	347,529	357,739	698,218	273,962
Sri Lanka	32	317,207	372,447	597,329	90,611
St. Vincent & Grenadines	29	506,803	579,363	1,001,403	687,373
Sweden	57	1,977,934	1,623,682	3,924,465	777,471
Switzerland	6	156,804	191,162	315,176	274,651
Taiwan	196	5,879,918	6,996,133	11,792,970	4,058,764
Toga	14	96,479	109,264	193,923	40,876
Trinidad	2	3,642	1,674	6,574	889
Tunisia	2	16,146	20,364	29,144	6,747
Turkey	26	480,682	584,830	925,998	648,581
U.S.S.R.	500	4,323,077	4,822,686	8,470,900	2,690,607
United Arab Emirates ...	2	24,526	30,244	49,297	29,971
United Kingdom	404	6,441,839	7,907,031	12,717,184	5,596,562
United States	611	6,651,098	6,479,531	12,696,878	3,948,672
Vanuatu	170	2,596,828	2,462,924	4,965,653	1,890,268
Venezuela	147	648,245	817,884	1,230,790	532,500
West Germany	228	3,289,939	3,964,609	6,566,154	2,505,215
Yugoslavia	150	1,990,719	2,336,432	3,938,592	2,319,258
N.A. ³	1	15,035	15,279	24,056	.....
Total	11,941	181,604,590	194,589,312	\$353,725,982	157,072,979

¹ Includes only commercial vessels of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on displacement basis (dredges, warships, etc.).

² Includes 13 transits where no registered tonnage was reported.

³ No flag of registry was reported.

NOTE.—In Canal traffic statistics, foreign naval vessels such as transports, supply ships, tankers, etc., with a measurement of 300 net tons (Panama Canal measurement) and over, and vessels of war, dredges, etc., with a displacement of 500 tons and over, are classified as oceangoing commercial vessels. Statistics on these vessels, except as related to displacement tonnage, have been included in the table above. As displacement tonnage cannot be combined with net tonnage, the following table shows statistics covering 37 vessels which transited the Canal during fiscal year 1990 and paid tolls on displacement tonnage.

Flag	Type	Number of transits	Displacement tonnage	Tolls
Argentina	Navy	1	3,700	\$4,144
Australia	Navy	1	4,060	4,547
Belgium	Dredge	2	6,921	7,753
Brazil	Navy	5	17,303	19,379
Canada	Navy	1	2,900	3,248
Chile	Navy	1	3,673	4,114
Colombia	Dredge	1	1,380	1,546
France	Navy	4	15,655	17,534
Japan	Navy	3	12,760	14,291
Mexico	Navy	2	3,570	3,998
People's Republic of China	Dredge	2	31,593	35,384
Peru	Navy	4	14,972	16,769
Spain	Navy	2	7,400	8,288
United Kingdom	Navy	8	27,627	30,942
Total		37	153,514	\$171,937

Table 4.—Classification of Canal Traffic¹ by Type of Vessel—Fiscal Year 1990

Type of Vessel	Laden			Ballast			Grand Total
	Atlantic to Pacific	Pacific to Atlantic	Total	Atlantic to Pacific	Pacific to Atlantic	Total	
CARGO AND CARGO/PASSENGER SHIPS:							
Bulk Carriers:							
Number of transits	1,750	1,476	3,226	304	318	622	3,848
Panama Canal net tonnage (thousands)	37,387	32,313	69,700	10,786	5,965	16,751	86,451
Tolls (thousands of dollars)	\$75,148	\$64,909	\$140,057	\$17,253	\$9,544	\$26,797	\$166,854
Cargo (thousands of long tons)	54,807	32,383	87,190	.....	.....	.....	87,190
Container Cargo Ships:							
Number of transits	796	831	1,627	12	15	27	1,654
Panama Canal net tonnage (thousands)	17,620	18,808	36,428	138	132	270	36,698
Tolls (thousands of dollars)	\$35,411	\$37,805	\$73,216	\$221	\$211	\$432	\$73,648
Cargo (thousands of long tons)	12,865	11,788	24,653	.....	.....	.....	24,653
General Cargo Ships:							
Number of transits	786	710	1,496	70	78	148	1,644
Panama Canal net tonnage (thousands)	6,686	6,053	12,739	416	396	812	13,551
Tolls (thousands of dollars)	\$13,436	\$12,166	\$25,602	\$665	\$634	\$1,299	\$26,901
Cargo (thousands of long tons)	5,442	4,735	10,177	.....	.....	.....	10,177
Passenger Ships:²							
Number of transits	86	34	120	4	2	6	126
Panama Canal net tonnage (thousands)	1,926	835	2,761	18	19	37	2,798
Tolls (thousands of dollars)	\$3,871	\$1,679	\$5,550	\$28	\$31	\$60	\$5,610
Cargo (thousands of long tons)	.....	.....	.....	.....	.....	.....	.....
Refrigerated Cargo Ships:							
Number of transits	801	1,280	2,081	541	34	575	2,656
Panama Canal net tonnage (thousands)	4,580	7,734	12,314	3,136	110	3,246	15,559
Tolls (thousands of dollars)	\$9,204	\$15,543	\$24,747	\$5,017	\$175	\$5,193	\$29,940
Cargo (thousands of long tons)	702	3,858	4,560	.....	.....	.....	4,560
Tank Ships:							
Number of transits	737	475	1,212	153	228	381	1,593
Panama Canal net tonnage (thousands)	10,745	8,078	18,824	3,290	2,994	6,283	25,107
Tolls (thousands of dollars)	\$21,593	\$16,235	\$37,828	\$5,263	\$4,787	\$10,051	\$47,879
Cargo (thousands of long tons)	16,739	13,127	29,866	.....	.....	.....	29,866

OTHER TYPE SHIPS:

Naval Vessels:

Number of transits	13	19	32
Displacement tonnage (thousands)	50	64	114
Tolls (thousands of dollars)	\$56	\$72	\$128
Cargo (thousands of long tons)	.....	2	2

Barges, Dredges, Drydocks, Tugs, etc.:

Number of transits	154	107	261
Panama Canal net tonnage (thousands)	640	383	1,023
Displacement tonnage (thousands)	.....	21	40
Tolls (thousands of dollars)	\$1,286	\$769	\$711
Cargo (thousands of long tons)	410	215	625

SUMMARY:

Total Cargo and Cargo/Passenger Ships:

Number of transits	4,956	4,806	9,762	1,084	675	1,759
Panama Canal net tonnage (thousands)	78,944	73,822	152,766	17,783	9,616	27,399
Tolls (thousands of dollars)	\$158,663	\$148,337	\$307,000	\$28,449	\$15,383	\$43,832
Cargo (thousands of long tons)	90,556	65,891	156,447	.....	.....	.....

Total Other Type Ships:

Number of transits	154	107	261	80	79	159
Panama Canal net tonnage (thousands)	640	383	1,023	160	257	417
Displacement tonnage (thousands)	.....	.....	.....	71	83	154
Tolls (thousands of dollars)	\$1,286	\$769	\$2,055	\$336	\$503	\$839
Cargo (thousands of long tons)	410	216	626	.....	.....	.....

Grand Total Ships:

Number of transits	5,110	4,913	10,023	1,164	754	1,918
Panama Canal net tonnage (thousands)	79,584	74,205	153,789	17,944	9,872	27,816
Displacement tonnage (thousands)	.....	.....	.....	71	83	154
Tolls (thousands of dollars)	\$159,949	\$149,106	\$309,055	\$28,785	\$15,886	\$44,671
Cargo (thousands of long tons)	90,966	66,107	157,073	.....	.....	.....

¹ Includes only commercial vessels of 300 net tons and over (Panama Canal measurement) for vessels paying tolls on net tonnage basis, or of 500 displacement tons and over for vessels paying on displacement tonnage.

² Vessels certificated for more than 12 passengers.

Table 5.—Laden and Ballast Traffic by Flag of Vessel
Fiscal Year 1990

Flag	Laden			Ballast		
	Number of transits	Panama Canal net tonnage	Tolls	Number of transits	Panama Canal net tonnage	Tolls
Algeria	1	16,421	\$33,006	.....	.....	\$.....
Antigua-Barbuda	11	27,869	56,017	7	15,148	24,237
Argentina	6	97,493	195,961	1	3,588	5,741
Austria	5	119,529	240,253	.....	.....	.....
Bahamas	322	4,139,570	8,320,536	50	400,105	640,168
Bangladesh	2	20,446	41,096	.....	.....	.....
Belgium	28	583,063	1,171,957	2	40,130	64,208
Bermuda	8	81,945	164,709	2	26,498	42,397
Brazil	26	503,074	1,011,179	1	12,381	19,810
Bulgaria	7	71,154	143,020	3	29,207	46,731
Burma	32	641,651	1,289,719	3	23,349	37,358
Canada	5	23,650	47,536	2	32,055	51,288
Cayman Islands	9	90,856	182,621	2	2,766	4,426
Chile	70	763,593	1,534,822	11	44,661	71,458
Colombia	151	1,436,484	2,887,333	14	53,854	86,166
Cuba	100	698,544	1,404,073	16	57,829	92,526
Cyprus	473	5,028,821	10,103,888	69	623,618	997,789
Czechoslovakia	8	124,882	251,013	2	36,736	58,778
Denmark	204	4,790,020	9,627,940	23	178,851	284,626
East Germany	46	259,375	521,344	8	40,181	64,290
Ecuador	265	2,358,674	4,739,281	72	378,549	1,085,678
Egypt	1	19,573	39,342	.....	.....	.....
Faroese	.....	.....	.....	1	1,494	2,390
France	32	740,727	1,488,861	8	69,554	111,286
Greece	493	8,791,683	17,666,156	92	1,443,303	2,309,285
Guatemala	5	17,520	35,215	1	3,504	5,606
Honduras	25	69,697	140,091	4	8,002	12,803
Hong Kong	9	200,309	402,621	4	62,652	100,243
Iceland	.....	.....	.....	1	716	1,146
India	30	482,925	970,679	9	113,596	181,754
Iran	4	44,269	88,981	2	22,128	35,405
Israel	68	1,418,863	2,851,915	.....	.....	.....
Italy	109	1,611,904	3,239,927	16	225,671	361,074
Japan	415	5,886,429	11,823,679	83	2,465,627	3,945,003
Jordan	1	8,689	17,465	.....	.....	.....
Kuwait	33	399,569	803,134	.....	.....	.....
Lebanon	2	16,592	33,350	.....	.....	.....
Liberia	1,233	24,005,414	48,233,542	246	6,016,478	9,142,354
Malaysia	25	396,280	796,523	5	91,526	146,442
Malta	90	1,085,539	2,181,933	24	265,994	425,590
Marshall Islands	13	342,442	688,308	.....	.....	.....
Mauritius	1	20,613	41,432	1	13,926	22,282
Mexico	29	529,248	1,063,788	22	389,810	623,696
Morocco	4	34,900	70,149	4	34,900	55,840
Netherlands	259	2,937,400	5,897,759	50	349,918	559,869
Netherlands-Antilles	3	27,745	55,767	2	25,103	40,165
Norway	561	9,347,670	18,788,817	99	1,618,333	2,589,333
Panama	1,483	22,696,573	45,608,327	383	5,562,463	8,898,858
People's Republic of China	198	3,831,997	7,702,314	16	286,564	458,502
Peru	80	798,666	1,605,319	4	48,455	77,528
Philippines	316	6,256,260	12,569,827	48	842,232	1,347,571
Poland	88	917,855	1,844,889	7	29,488	47,181
Portugal	1	18,156	36,494	.....	.....	.....
Qatar	4	48,136	96,753	.....	.....	.....
Romania	2	33,517	67,369	2	33,517	53,627
Samoa	3	27,597	55,470	.....	.....	.....
Saudi Arabia	6	67,506	135,687	9	56,934	91,094
Singapore	256	3,901,304	7,841,621	42	803,078	1,284,925
Somali Republic	2	18,630	37,446	.....	.....	.....
South Korea	155	3,438,132	6,910,645	16	588,217	941,147
Spain	27	626,545	1,256,355	1	20,984	33,574
Sri Lanka	22	219,018	440,226	10	98,189	157,102
St. Vincent & Grenadines	27	464,678	934,003	2	42,125	67,400
Sweden	51	1,853,100	3,724,731	6	124,834	199,734
Switzerland	6	156,804	315,176	.....	.....	.....
Taiwan	193	5,817,321	11,692,815	3	62,597	100,155
Toga	14	96,479	193,923	.....	.....	.....
Trinidad	1	1,821	3,660	1	1,821	2,914
Tunisia	1	8,073	16,227	1	8,073	12,917
Turkey	21	382,699	769,225	5	97,983	156,773
U.S.S.R.	422	3,790,187	7,618,276	78	532,890	852,624

**Table 5.—Laden and Ballast Traffic by Flag of Vessel
Fiscal Year 1990—Continued**

Flag	Laden			* Ballast		
	Number of transits	Panama Canal net tonnage	Tolls	Number of transits	Panama Canal net tonnage	Tolls
United Arab Emirates	2	24,526	\$49,297	.....	.....	\$ .....
United Kingdom	354	5,803,168	11,664,368	42	638,671	1,021,874
United States	458	5,013,226	10,076,584	153	1,637,880	2,620,294
Vanuatu	140	1,977,387	3,974,548	30	619,441	991,106
Venezuela	113	472,191	949,104	34	176,054	281,686
West Germany	215	3,176,223	6,384,208	13	113,716	181,946
Yugoslavia	138	1,837,662	3,693,701	12	153,057	244,891
N.A.* . . . . .	...	.....	.....	1	15,035	24,056
Total	10,023	153,788,551	\$309,055,326	1,881	27,816,039	\$44,498,720

Above table involves only commercial vessels of 300 net tons or over, Panama Canal measurement.

* No flag of registry was reported.

Table 6.—Segregation of Transits¹ by Registered Gross Tonnage—Fiscal Year 1990

	Under 2,000	2,000 to 3,999	4,000 to 5,999	6,000 to 7,999	8,000 to 9,999	10,000 to 14,999	15,000 to 19,999	20,000 to 29,999	30,000 to 39,999	40,000 and over	Total ¹	Registered gross tonnage	Average gross tonnage per vessel
Algeria.....								1			1	20,253	20,253
Antigua-Barbuda.....	6	8									18	45,025	2,501
Argentina.....		1	4			3		2			7	96,931	13,847
Austria.....	26	23	29	28	66	57	32	100	8	3	372	144,260	28,852
Bahamas.....						2					2	26,250	13,125
Bangladesh.....			1				2	24	3		30	753,149	25,105
Belgium.....					4	3	1	2			10	131,121	13,112
Bermuda.....						10	4	6		7	27	618,753	22,917
Brazil.....			1			8		1			10	121,750	12,175
Bulgaria.....					6	3	12	2	12		35	775,293	22,151
Burma.....	4				1			2			7	62,017	8,860
Canada.....	3	4						4			11	102,806	9,346
Cayman Islands.....	7				4	70					81	904,853	11,171
Chile.....						2	4				163	1,381,816	8,477
Colombia.....	54	46		3	2	100	4				116	867,008	7,474
Cuba.....	47	18	53	56	85	128	92	38	25		542	6,445,123	11,891
Cyprus.....						31	3				110	1,000,000	9,091
Czechoslovakia.....						8	15	5	1		10	190,315	19,032
Denmark.....	63	1	2		8	21	15	10	2	105	227	6,047,987	26,643
East Germany.....		2	40		6	5		1			54	356,214	6,597
Ecuador.....	14	6	9	135	64	24	56	29			337	3,509,933	10,415
Egypt.....								1			1	24,106	24,106
Faroes.....	1										1	1,521	1,521
France.....	8					2	5	25			40	727,988	18,200
Greece.....	64		6	6	47	99	102	76	185		585	11,728,097	20,048
Guatemala.....			6								6	24,774	4,129
Honduras.....	19	2		5	2						29	87,526	3,018
Hong Kong.....	1		1				1	4	6		13	327,448	25,188
Iceland.....	1										1	1,138	1,138
India.....		6			1	13	8	4	2	5	39	707,305	18,136
Iran.....						6					6	86,199	14,366
Israel.....								65	3		68	1,849,070	27,192
Italy.....				5	47	8	11	36	15	1	125	2,211,342	17,691
Japan.....	193	18	40	18	33	12	22	94	32	36	498	6,088,762	12,226
Jordan.....					1						33	9,888	9,888
Kuwait.....							33				33	508,808	15,418
Lebanon.....						2					2	20,146	20,146
Liberia.....		18	24	50	166	353	285	220	251	112	1,479	30,162,394	20,394
Malaysia.....					7	3		9	6		30	568,968	18,966

Malta	4	16	1	2	13	38	16	4	20	.....	114	1,653,258
Marshall Islands	.....	.....	.....	.....	.....	5	.....	.....	4	.....	13	30,289
Mauritius	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	393,753
Mexico	5	2	.....	1	.....	12	1	6	.....	.....	2	40,929
Morocco	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	1,113,248
Netherlands	13	43	54	49	26	66	4	2	.....	.....	8	86,976
Netherlands-Antilles	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	309	3,376,410
Norway	13	5	11	14	162	45	143	195	70	.....	5	62,369
Panama	121	134	239	180	131	325	189	194	251	102	660	12,103,250
People's Republic of China	2	.....	.....	1	16	13	39	97	45	.....	1,866	29,087,473
Peru	2	23	5	.....	.....	37	7	.....	.....	.....	214	5,049,693
Philippines	.....	.....	21	11	14	62	59	82	104	.....	364	7,882,374
Poland	1	4	8	7	27	34	3	1	10	.....	94	1,142,842
Portugal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	24,997
Qatar	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	4	60,176
Romania	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	4	76,272
Samoa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	31,650
Saudi Arabia	.....	.....	.....	13	.....	.....	.....	.....	.....	.....	15	137,254
Singapore	.....	.....	2	101	16	78	11	54	25	10	298	4,520,352
Somali Republic	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	21,086
South Korea	18	1	.....	.....	.....	12	33	51	46	.....	171	4,128,347
Spain	2	.....	10	.....	.....	.....	13	3	.....	.....	28	357,739
Sri Lanka	.....	.....	.....	.....	18	.....	.....	.....	.....	.....	32	372,447
St. Vincent & Grenadines	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29	579,363
Sweden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57	1,623,682
Switzerland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	191,162
Taiwan	8	1	.....	.....	.....	.....	.....	.....	.....	.....	196	6,996,133
Togo	.....	.....	4	2	8	.....	.....	.....	45	83	14	109,264
Trinidad	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1,674
Tunisia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	20,364
Turkey	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	26	584,830
U.S.S.R.	25	40	41	52	111	167	45	13	6	.....	500	4,822,686
United Arab Emirates	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	30,244
United Kingdom	9	1	18	27	20	99	43	83	75	21	396	7,896,547
United States	203	21	10	11	13	214	61	29	23	17	602	6,479,531
Vanuatu	43	9	2	29	19	4	17	16	17	14	170	2,462,924
Venezuela	115	2	.....	.....	.....	15	2	.....	.....	.....	11	817,884
West Germany	.....	5	3	3	26	27	110	42	11	.....	228	3,964,609
Yugoslavia	.....	4	2	8	26	43	46	11	8	2	150	2,336,432
N/A	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	15,279
Total	1,101	477	651	828	1,234	2,295	1,576	1,786	1,389	554	11,891	194,494,948
Percent of Total	9.3	4.0	5.5	7.0	10.4	19.3	13.3	15.0	11.7	4.7	100.0	16,356

¹ Includes only commercial vessels of 300 net tons and over, Panama Canal measurement.

² Excludes 37 vessels paying tolls on displacement tonnage basis and 13 transits where no registered tonnage was reported.

Table 7.—Principal Commodities Shipped Through Canal by Fiscal Years

Commodity	South Atlantic to Pacific		North Pacific to Atlantic	
	1988	1989	1989	1988
Canned and Refrigerated Foods.....	846	768	4,796	4,021
Canned Foods.....	88	50	128	122
Fish.....	2	3	21	25
Fruit.....	4	8	4	15
Milk.....	72	25	80	71
Other and unclassified.....	11	14	23	17
Refrigerated Foods.....	757	717	4,668	3,899
Bananas.....	16	9	1,621	1,366
Dairy Products.....	8	8	11	23
Fish.....	179	169	927	836
Fruit, excluding bananas.....	158	176	1,154	954
Meat.....	23	4	63	80
Other and unclassified.....	372	352	891	775
Chemicals and Petroleum Chemicals.....	5,522	6,000	962	1,292
Caustic Soda.....	976	1,220	.....	5
Chemicals, unclassified.....	2,941	2,845	871	1,439
Petroleum Chemicals, miscellaneous.....	1,606	1,935	91	182
Coal and Coke (excluding petroleum coke).....	5,390	5,301	3,051	3,634
Grains.....	32,756	28,127	2,242	1,790
Barley.....	124	5	292	202
Corn.....	16,165	10,475	3	10
Oats.....	6	5	1	1
Rice.....	98	171	432	350
Sorghum.....	2,163	1,942	9	.....
Soybeans.....	6,871	5,180	97	63
Wheat.....	6,997	9,893	1,363	1,134
Other and unclassified.....	332	457	45	30
Lumber and Products.....	1,671	2,465	6,861	7,863
Boards and planks.....	61	69	3,695	3,949
Plywood, veneers, composition board.....	27	11	748	847
Pulpwood.....	1,129	1,253	2,063	1,831
Other and unclassified.....	453	1,131	355	412
Machinery and Equipment.....	531	506	1,558	1,927
				2,125

[Thousands of long tons]

Agricultural machinery and implements	50	17	22	28
Automobiles, trucks, accessories and parts	44	1,384	1,717	1,899
Construction machinery and equipment	322	309	113	139
Electrical machinery and apparatus	73	73	9	21
Motorcycles, bicycles and parts	47	32	8	7
Other and unclassified	1	1	40	47
Manufactures of Iron and Steel	35	2,950	3,526	4,107
Angles, shapes, and sections	137	189	67	258
Nails, tacks, and spikes	8	20	52	67
Plates, sheets, and coils	1,379	2,672	1,471	1,424
Tubes, pipes, and fittings	144	261	333	372
Wire, bars, and rods	677	605	166	303
Other and unclassified	392	577	863	1,101
Minerals, miscellaneous	144	142	3,337	4,977
Asbestos	17	15	3	4
Borax	1	1	424	393
Infusorial earth	1	.....	.....	1
Salt	41	21	1,374	707
Soda and sodium compounds	75	98	222	78
Sulfur	9	7	2,710	2,154
Nitrates, Phosphates, and Potash	10,289	11,702	2,079	2,502
Ammonium compounds	521	558	28	18
Fishmeal	11	.....	1,281	1,427
Nitrate of soda	52	43	383	321
Phosphates	6,725	8,187	268	416
Potash	280	223	52	106
Fertilizers, unclassified	2,700	2,691	67	214
Ores and Metals	3,462	3,130	8,686	7,379
Ores	736	736	6,097	5,735
Alumina/bauxite	178	135	3,040	2,250
Chrome	7	31	46	66
Copper	39	48	471	570
Iron	133	117	413	282
Lead	2	.....	224	221
Manganese	71	97	313	281
Tin .....	.....	.....	12	31
Zinc	42	37	763	540
Other and unclassified	264	271	2,128	1,855
	189			1,634

Table 7.—Principal Commodities Shipped Through Canal by Fiscal Years—Continued

Commodity	South Atlantic to Pacific		North Pacific to Atlantic	
	1988	1989	1990	1988
Metals	2,726	2,394	2,974	1,137
Aluminum.....	415	283	409	13
Copper.....	14	2	8	892
Iron.....	105	83	291	14
Lead.....	7	.....	15	12
Scrap.....	2,121	1,929	2,186	67
Tin, including timplate.....	13	22	11	90
Zinc.....	15	25	7	11
Other and unclassified.....	36	52	48	7
Other Agricultural Commodities	2,422	1,836	1,803	220
Beans, edible.....	45	123	78	19
Cocoa and cacao beans.....	32	5	4	58
Coffee, raw and processed.....	19	14	7	72
Copra and coconuts.....	.....	.....	2	19
Cotton, raw.....	25	116	51	5
Molasses.....	11	54	13	36
Oilseeds.....	72	42	122	55
Peas, dry.....	1	5	12	50
Rubber, raw.....	4	3	4	46
Skins and hides.....	.....	.....	3	275
Sugar.....	2,213	1,473	1,508	421
Wool, raw.....	1	.....	.....	7
Petroleum and Products	11,851	9,838	11,709	64
Asphalt.....	52	30	25	82
Crude oil.....	2,820	2,089	2,687	714
Diesel oil.....	1,416	1,404	1,430	672
Fuel oil, residual.....	1,557	995	1,891	578
Gasoline.....	2,009	1,554	1,938	106
Jet fuel.....	1,007	847	912	11
Kerosene.....	59	94	101	52
Liquefied gas.....	1,092	1,065	999	137
Lubricating oil.....	656	659	612	27
Petroleum coke.....	1,098	923	784	1
Totals	13,521	12,396	12,740	2,153
	6	4	9	1,581
	6,575	5,784	5,967	1
	98	418	467	.....
	3,620	3,179	3,371	.....
	310	486	252	.....
	70	5	39	.....
	147	90	14	.....
	171	156	221	.....
	2,447	2,261	2,338	.....

[Thousands of long tons]

PANAMA CANAL COMMISSION

85	179	331	82	71
13,358	14,136	14,861	11,034	10,777
<u>17</u>	<u>29</u>	<u>11</u>	<u>11</u>	<u>13</u>
39	77	28	1	2
150	234	543	5	1
472	553	623	87	39
8	7	2	12	4
185	148	149	2	6
17	11	11	5	6
30	12	54	22	65
9	6	7	14	9
63	121	69	3	4
4	3	6	70	51
2	1	.....	213	395
155	161	176	232	171
911	892	944	448	527
2	1	1	1	2
105	81	75	1	2
16	19	21	16	8
1	4	4	13	23
11	16	146	28	28
80	97	75	36	34
15	15	7	15	18
1	1	.....	1	1
7	17	15	13	12
11,058	11,631	11,895	9,787	9,352
<u>90,978</u>	<u>88,276</u>	<u>90,966</u>	<u>66,107</u>	<u>63,361</u>
Other and unclassified				
Miscellaneous				
Bricks and tile				
Carbon black				
Cement				
Clay, fire and china				
Fibers, plant				
Flour, wheat				
Glass and glassware				
Groceries, miscellaneous				
Liquors and wines				
Marble and stone				
Oil, coconut				
Oil, fish				
Oil, vegetable				
Paper and paper products				
Porcelainware				
Resin				
Rubber, manufactured				
Seeds, excluding oilseeds				
Slag, clinkers, and dross				
Tallow				
Textiles				
Tobacco and manufactures				
Wax, paraffin				
All other and unclassified				
Total				

Table 8.—Origin and Destination of Commercial Cargo Through the Panama Canal From Atlantic to Pacific During Fiscal Year 1990 Segregated by Countries in Principal Trade Routes

	[Long tons]													
	To West Coast United States					To West Coast Central America								
	Alaska	Hawaii	Mainland	Total	Canada	Costa Rica	El Salvador	Guatemala	Mexico	Nicaragua	Panama	Central America (other) ¹	Bahamas, R.P. ²	Total
EAST COAST NORTH AMERICA:														
United States:														
North Atlantic ports	8,513		80,014	88,527			95,199	34,352	142,249			25	58,136	329,961
South Atlantic ports			2,855	2,855		1,387	3,647		280,035			24,757	1,450	18,138
Great Lakes ports														
Gulf ports	4,918		1,304,021	1,340,495	243,068	477,530	627,777	277,758	1,796,028	79,621	20,793	102,295	347,425	3,728,227
United States (other) ¹			47,218	47,218	243,068	478,917	726,623	312,110	2,218,312	79,621	47,102	103,745	429,301	4,395,731
Total United States	4,918	40,069	1,434,108	1,479,095	243,068	478,917	726,623	312,110	2,218,312	79,621	47,102	103,745	429,301	4,395,731
EAST COAST CANADA														
			54,073	54,073	6	5,817	2,210		1,150	15,972	2,773			27,922
EAST COAST CENTRAL AMERICA:														
Mexico			63,801	63,801			275,383	183,257	762,178					1,234,035
Panama			350	350										108,217
Central America (other) ¹			3	3						1,370	3,314			889
Cristobal, R.P. ²			7,099	7,099			349	1,425		1,138				2,972
Total Central America			71,253	71,253			275,732	184,682	762,178	2,508	3,350	60		1,350,833
EAST COAST SOUTH AMERICA:														
Brazil			841,334	841,334	103,215		7,559	12,053	38,836				871	1,000
Colombia	10	107,771	86,504	194,285	20,396	591	2,066						96	4,595
Venezuela		60,585	748,061	808,646	36,029	94,917	375,785		597,849	150,307			58,418	1,712,091
South America (other) ¹			82,173	82,173	10,554			9,808	55,836					68,248
Total South America	10	168,356	1,758,072	1,926,438	170,194	95,508	385,410	452,916	692,521	150,658			59,385	1,845,253
WEST INDIES:														
Cuba														
Jamaica			3,730	3,730										27,257
Netherlands West Indies			414,305	414,305	115	2,622	1,760	2,625	150,530	19,672		3,977	8,899	6,599
Trinidad/Tobago			63,414	63,414	34,532	2,930	5,553	655				23,731	1,553	185,039
West Indies (other) ¹		2,963	282,526	285,489	435	18,029	18,029	3,245				328	225	32,869
Total West Indies		2,963	763,975	766,938	35,082	5,552	25,342	6,599	150,530	41,439	27,708	14,868	21,702	293,740

EUROPE:

Belgium	436,136	436,136	25,384	6,290	45,031	31,459	24,051	29,146	243	22,803	1,781	160,804
France	262,563	263,655	31,054	7,478	1,534	.....	13,944	12,332	.....	.....	2,411	37,699
Italy	337,676	337,676	23,278	.....	300	.....	752	4,706	31	545	5,147	11,481
Netherlands	428,854	429,441	36,390	4,038	5,539	5,157	15,220	1,313	.....	656	7,333	39,256
Norway	182,930	182,930	.....	.....	.....	48,291	.....	.....	.....	.....	.....	48,291
Spain-Portugal	355,623	355,623	87,030	2,000	3,749	.....	953	1,387	74	1,770	642	10,575
Sweden	81,275	81,275	261	.....	.....	.....	.....	3,345	.....	.....	.....	3,345
U.S.S.R.	4,576	4,664	.....	533	2,614	29,106	.....	131,828	.....	530	16	164,627
United Kingdom	132,275	132,275	18,353	.....	1,587	.....	.....	11,859	.....	20,201	.....	33,647
West Germany	352,122	352,260	44,309	2,800	6,245	.....	13,740	2,201	2,257	1,794	115	29,152
Europe (other) ¹	1,043,939	1,122,160	150,876	6,886	43,087	31,322	77,298	57,502	4,298	35,663	233	256,289
Total Europe	39,324	40,802	416,935	30,025	109,686	145,335	145,958	255,619	6,903	83,962	17,678	795,166

ASIA (MIDDLE EAST)

.....	1,989	98,272	100,261	30,516	30,516
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AFRICA

.....	50	145,025	145,075	712,905	78	454	700	148,887	13,555	295	163,969
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GRAND TOTAL

.....	44,252	254,229	7,942,747	8,241,228	1,578,190	615,897	1,525,457	1,102,342	4,119,536	589,888	87,836	262,315	599,859
.....	8,903,130

Percent of Pacific-bound cargo.....

0.0	0.3	8.7	9.1	1.7	0.7	1.7	1.2	4.5	0.6	0.1	0.3	0.7	9.8
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Table 8.—Origin and Destination of Commercial Cargo Through the Panama Canal From Atlantic to Pacific During Fiscal Year 1990
Segregated by Countries in Principal Trade Routes—Continued

[Long tons]

	To West Coast South America				To Oceania						
	Chile	Colombia	Ecuador	Peru	South America (other) ¹	Australia	French Oceania	New Zealand (other) ¹	Oceania (other) ¹	Total	
EAST COAST NORTH AMERICA:											
United States:											
North Atlantic ports	354,043	46,827	91,909	47,673	13,198	553,650	153,525	163	52,268	35,615	241,571
South Atlantic ports	84,650	31,552	135,914	48,418	15,721	316,255	114,389	1,262	226,403	53,812	395,866
Great Lakes ports	.....	.....	.....	9,841	.....	9,841	.....	.....	.....	.....	.....
Gulf ports	997,541	475,096	659,267	1,062,122	62,482	3,256,508	1,575,028	.....	159,586	79,389	1,814,003
United States (other) ¹	104,628	23,628	47,369	29,933	18,521	224,079	136,928	332	70,738	33,060	241,058
Total United States	1,540,862	577,103	934,459	1,197,987	109,922	4,360,333	1,979,870	1,757	508,995	201,876	2,692,498
EAST COAST CANADA	109,296	83,036	31,723	1,862	644	226,561	135,710	23	52,704	17,173	205,610
EAST COAST CENTRAL AMERICA:											
Mexico	29,926	9,138	114,008	213,408	10,155	376,635	.....	.....	11,786	137	11,923
Panama	.....	2,124	40,533	13,018	7,716	63,391	.....	.....	.....	.....	.....
Central America (other) ¹	22	369	6,299	2,793	40	9,523	7,382	.....	.....	.....	7,382
Cristobal, R.P. ²	8,585	2	3,429	206	4,262	16,484	.....	.....	.....	.....	.....
Total Central America	38,533	11,633	164,269	229,425	22,173	466,033	7,382	.....	11,786	137	19,305
EAST COAST SOUTH AMERICA:											
Brazil	23,251	11,089	105,928	38,833	2,676	181,777	1,407	20	.....	.....	1,427
Colombia	160,198	38,864	5,884	57,164	3,695	265,805	.....	.....	.....	.....	.....
Venezuela	917,392	612	264,596	62,734	58,605	1,303,939	.....	.....	.....	.....	.....
South America (other) ¹	10,159	53,660	6,889	11,859	10,463	93,030	4,054	.....	133	.....	4,187
Total South America	1,111,000	104,225	383,297	170,590	75,439	1,844,551	5,461	20	133	.....	5,614
WEST INDIES:											
Cuba	.....	.....	57	23,810	1,645	25,512	.....	.....	.....	.....	.....
Jamaica	2,904	2,000	.....	.....	.....	4,904	11	.....	.....	.....	.....
Netherlands West Indies	190,184	47,862	16,719	26,881	133,733	415,379	.....	.....	28	8	47
Trinidad/Tobago	29,546	41,727	12,314	.....	5,801	89,388	89	.....	.....	71	28
West Indies (other) ¹	16	14,522	2,347	2,860	20	19,765	84	3,436	96	246	3,862
Total West Indies	222,650	106,111	31,437	53,551	141,199	554,948	184	3,436	218	282	4,120

Table 8.—Origin and Destination of Commercial Cargo Through the Panama Canal From Atlantic to Pacific During Fiscal Year 1990 Segregated by Countries in Principal Trade Routes—Continued

[Long tons]

	To Asia										Grand total	Percent of total Pacific-bound cargo		
	China	Taiwan	Hong Kong	Indonesia	Japan	Philippine Islands	Singapore	South Korea	Thailand	U.S.S.R. (other) ¹			Asia (other) ¹	Total
EAST COAST NORTH AMERICA:														
United States:														
North Atlantic ports	279,878	1,091,288	248,737	2,525	1,837,070	38,906	163,939	1,923,718	4,541	.....	478,045	6,068,647	7,282,356	8.0
South Atlantic ports	508,113	588,602	262,954	24,519	1,825,914	116	121,154	398,834	3,321	.....	415,803	4,149,330	5,193,720	5.7
Great Lakes ports	.....	.....	.....	.....	118,077	.....	.....	169,033	.....	.....	29,222	316,332	326,173	0.4
Gulf ports	6,761,919	5,552,268	79,108	121,637	20,658,835	215,707	180,732	4,219,165	148,283	62,822	1,387,476	39,387,952	49,771,253	54.7
United States (other) ¹	138,741	343,322	80,620	2,196	738,076	7,110	52,905	510,010	4,488	.....	266,669	2,144,137	2,663,621	2.9
Total United States	7,688,651	7,575,480	671,419	150,877	25,177,972	261,839	518,730	7,220,760	160,633	62,822	2,577,215	52,066,398	65,237,123	71.7
EAST COAST CANADA														
	173,663	284,788	71,513	8,163	542,856	.....	14,883	391,273	17,414	.....	148,616	1,653,169	2,167,341	2.4
EAST COAST CENTRAL AMERICA:														
Mexico	143,536	.....	9,866	11,639	77,131	6,500	63,037	10,179	26,646	.....	41,027	389,561	2,075,955	2.3
Panama	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	171,994	0.2
Central America (other) ¹	.....	480	781	.....	3,904	.....	6,618	1,367	.....	.....	.....	13,150	35,631	0.0
Cristobal, R.P. ²	.....	4	122	.....	197	.....	4	.....	.....	.....	.....	1,303	27,858	0.0
Total Central America	143,536	10,350	12,542	.....	81,232	6,500	69,659	11,546	26,646	.....	42,003	404,014	2,311,438	2.5
EAST COAST SOUTH AMERICA:														
Brazil	44,288	5,040	6,688	.....	674,727	.....	5,931	17,134	.....	.....	1,364	755,172	1,943,244	2.1
Colombia	3,473	.....	.....	.....	61,405	.....	.....	750	.....	.....	1,263	66,891	551,972	0.6
Venezuela	148,967	139,565	73,542	10,717	598,114	10,394	6,037	76	48,611	.....	41,106	1,077,129	4,937,834	5.4
South America (other) ¹	2,908	2,604	7,545	.....	121,166	.....	4,238	12,603	.....	2,837	5,689	159,590	417,782	0.5
Total South America	199,636	147,209	87,775	10,717	1,455,412	10,394	16,206	29,813	49,361	2,837	49,422	2,058,782	7,850,832	8.6
WEST INDIES:														
Cuba	922,341	.....	.....	.....	115,482	.....	.....	12,506	.....	169,404	28,881	1,248,614	1,301,383	1.4
Jamaica	192	32,309	26,343	.....	17,985	.....	574	14,440	.....	66	2,285	94,194	109,474	0.1
Netherlands West Indies	.....	2,559	1,015	.....	34,678	.....	4,252	656	2,885	.....	143	46,188	1,061,049	1.2
Trinidad/Tobago	24,350	10,034	35	9,268	50,408	.....	26	.....	.....	.....	6,624	100,745	321,136	0.4
West Indies (other) ¹	.....	21,512	6,868	.....	125,617	13	37,017	96,810	.....	.....	36,515	324,352	675,879	0.7
Total West Indies	946,883	66,414	34,261	9,268	344,170	13	41,869	124,412	2,885	169,470	74,448	1,814,093	3,468,921	3.8

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EUROPE:												
Belgium	3,045		1,670	1,022	44	494			4	6,279	1,143,144	1.3
France			2,027	7,181	132	35			1,227	11,630	579,446	0.6
Italy		284	89	146	206				1,373	2,098	469,826	0.5
Netherlands	3,138	11,675	1,486	56,626	499	25,139	2,511		32,918	133,992	868,254	1.0
Norway				10,812		3,901			2,430	17,143	256,127	0.3
Spain-Portugal		963	900	2,833		1,027			5,420	12,693	574,853	0.6
Sweden				348						348	174,422	0.2
U.S.S.R.											686,060	0.8
United Kingdom		1,194	5,397	14,248	4,327	11,040			19,258	55,464	422,689	0.5
West Germany	3,045	2,625	1,653	23,124						30,447	816,699	0.9
Europe (other) ¹	1,367	1,221	8,058	99,779	66	2,507	646		47,551	162,511	2,458,089	2.7
Total Europe	10,595	17,962	17,494	216,119	1,094	7,715	42,282	2,511	110,181	432,605	8,449,609	9.3
ASIA (MIDDLE EAST)												
			177				534		574	1,285	170,642	0.2
AFRICA												
		861	1,570	80	67,175	414	500		4,339	74,939	1,309,968	1.4
GRAND TOTAL	9,162,964	8,103,064	896,751	27,884,936	279,840	669,476	7,821,120	259,450	3,006,798	58,505,285	90,965,874	.....
Percent of Pacific-bound cargo	10.1	8.9	1.0	0.2	30.7	0.3	0.7	8.6	0.3	0.3	64.3	100.0%

¹ Includes cargo not routed to permit segregation between definite countries.

² Includes both local and transhipped cargo.

PANAMA CANAL COMMISSION

OCEANIA:											
Australia	379,679	102,200	29,723	2,773,879	127,726	3,413,207	520,786	239,088	.....	.....	239,088
British Oceania	12,568	22,449	.....	16,446	.....	51,463	1,742	.....	.....	.....	.....
French Oceania	11,071	4,552	.....	2,165	168	17,956	7,149	.....	.....	.....	.....
New Zealand	171,905	39,038	.....	62,192	17,311	290,446	36,274	70,169	.....	230	70,399
Oceania (other) ¹⁾	37,781	7,430	.....	15,332	10,816	71,359	7,663	1,665	.....	.....	1,665
Total Oceania	613,004	175,669	29,723	2,870,014	156,021	3,844,431	573,614	310,922	.....	230	311,152
ASIA:											
China	129,457	9,419	15,012	1,374,096	73,692	1,601,676	185,976	12,205	.....	.....	12,205
Taiwan	565,523	288,485	.....	39,015	201,105	1,094,128	85,061	1,960	.....	2,969	31,615
Hong Kong	345,046	198,954	.....	1,676	59,033	604,709	85,629	.....	42	72,256	72,298
Indonesia	109,938	22,062	.....	266,343	189,177	587,520	10,500	.....	.....	.....	.....
Japan	1,991,681	1,032,324	135,839	1,715,632	852,409	5,727,885	57,339	8,549	.....	991	29,252
Philippine Islands	140,790	1,562	.....	77,814	81,095	301,261	13,145	4,758	.....	.....	38,792
Singapore	334,640	206,319	.....	39,696	51,883	632,538	81,520	.....	.....	20,802	4,758
South Korea	213,393	84,978	.....	82,756	282,560	663,687	53,241	.....	.....	22,299	22,299
Thailand	2,943	1,476	.....	2,502	8,045	14,966	.....	.....	.....	.....	.....
U.S.S.R.	616,079	290,926	6,469	100,860	272,118	1,286,452	19,730	41,010	.....	1,585	145,481
Asia (other) ¹⁾	4,449,490	2,136,505	157,320	3,700,390	2,071,117	12,514,822	592,921	68,482	.....	5,587	316,776
Total Asia	11,836,153	3,201,349	187,043	10,256,039	3,270,824	28,751,408	1,515,061	1,015,946	852,343	82,964	360,335
GRAND TOTAL	179	4.8	0.3	15.5	4.9	43.5	2.3	1.5	1.3	0.1	0.5
Percent of Atlantic-bound cargo											3.5

See footnotes at end of table.

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1990 Segregated by Countries in Principal Trade Routes—Continued

	[Long tons]				To East Coast South America					To West Indies				
	Brazil	Colombia	Venezuela (other) ¹	South America (other) ¹	Total	Cuba	Haiti Dominican Republic	Jamaica	Netherlands West Indies	Puerto Rico	Trinidad/Tobago	West Indies (other) ¹	Total	
WEST COAST NORTH AMERICA:														
United States:														
Alaska														
Hawaii				287	287									
Mainland	98,598	17,058	196,639	31,277	343,572			4,324	45,293		53,154	278,365	381,136	
Total United States	98,598	17,058	196,639	31,564	343,859			4,324	45,293		53,154	278,365	381,136	
WEST COAST CANADA														
	313,466	73,552	38,030	55,791	480,839	41,447		23,885		43,861			109,193	
WEST COAST CENTRAL AMERICA:														
Costa Rica	460	3	4,970		5,433					2,345	2,952		5,297	
El Salvador	4,051	517	1,173		5,741				11,017			26,477	37,494	
Guatemala	224		18,846		19,070		12,846	8,809	3,993	2,850	5,639	15,135	49,272	
Honduras	1,552	1,266			2,818							18,826	18,826	
Mexico	12,000	18,434	1,186	1,750	33,370	16,040		502	11,154	5,456			33,152	
Nicaragua	13,901	221	35		14,157	6,621							6,621	
Panama	1,575	18,211	3,373	4,791	8,164		3,176	5,866		15,214			24,256	
Central America (other) ¹			31,219	1,703	52,208	22,682							72,018	
Bahoa, R. P. ²			3,149		3,149		97						187	
Total Central America	33,763	38,652	41,956	29,739	144,110	45,343	16,119	15,177	26,164	75,201	8,591	60,528	247,123	
WEST COAST SOUTH AMERICA:														
Chile	288	5,648	64,628	3,726	74,190		72,367		1,668	35,159		2,128	111,322	
Colombia		7,837	23,819	2	31,658		3,612			2,078		5,176	10,866	
Ecuador	6,384	8,525	806		15,715	1,299,734	1,055		714,420	1,010,232		435,270	3,460,711	
Peru	1,436	3,734	60,024	11,117	76,311	21,076	140	3,853	30,553	129,265		187,983	372,870	
South America (other) ¹		18,140	9,161	746	28,047	22,338	1,364			6,497		19	30,218	
Total South America	8,108	43,784	158,438	15,591	225,921	1,343,148	78,538	3,853	746,641	1,183,231		630,576	3,985,987	

OCEANIA:										
Australia	1,575	32,873	865,696	900,144	970	271	134	5,073	2,849	9,297
British Oceania							1,312			1,312
French Oceania										8
New Zealand			13,100	2,794	5,281	4,650	493	2,778	8,856	25,082
Oceania (other) ¹						150	10,844	39		11,033
Total Oceania	1,575	32,873	878,796	913,244	2,794	5,281	12,783	7,890	11,713	46,732
ASIA:										
China	257	18,094	21,490	39,841	353,817				1,516	355,333
Taiwan	1,102	1,164	728	3,039		7,039	15,768	4,585	5,663	40,454
Hong Kong	545	508	4,902	5,967	7	1,544	30,952	8,064	3,002	50,274
Indonesia	19,840	20,842	34,354	104,358	9,184	19,403	34,831	7,128	76,878	185,467
Japan										
Philippine Islands	197	351	707	1,255		2,044	500	3,661	1,251	10,472
Singapore	3,712	1,147	3,572	8,624	9,289	2,066	17,677	645	5,316	46,134
South Korea									19,684	126,189
Thailand										261,155
U.S.S.R.	9,955	6,818	27,710	58,157	107,104	35,238	15,213	6,155	14,527	212,613
Asia (other) ¹	35,608	48,924	113,463	221,241	847,061	67,334	114,941	30,238	126,321	1,288,091
Total Asia	491,118	254,843	1,427,322	155,931	2,329,214	2,279,793	167,272	167,800	1,441,397	6,058,262
GRAND TOTAL										
Percent of Atlantic-bound cargo	0.7	0.4	2.2	0.2	3.5	3.4	0.3	0.3	1.3	9.2

See footnotes at end of table.

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1990 Segregated by Countries in Principal Trade Routes—Continued

[Long tons]

	To Europe										Total			
	Belgium	Den- mark	Finland	France	Italy	Nether- lands	Spain/ Portugal	Sweden	United Kingdom	U.S.S.R.		Yugo- slavia	West Germany	Europe (other) ¹
WEST COAST NORTH AMERICA:														
United States:														
Alaska.....	153,531		378	35,274	82,757		9,109		16,671			33,864	103,876	435,460
Hawaii.....				19,531										19,531
Mainland.....	673,537	21,966	11,564	210,521	224,740	1,979,996	175,584	84,922	232,763	11,549	13,895	444,525	1,106,478	5,192,040
Total United States.....	827,068	21,966	11,942	265,326	307,497	1,979,996	184,693	84,922	249,434	11,549	13,895	478,389	1,210,354	5,647,031
WEST COAST CANADA.....	1,037,531	1,704	358,140	496,942	522,763	809,345	183,391	7,483	2,052,220	206,429	3,491	235,706	1,622,264	7,537,409
WEST COAST CENTRAL AMERICA:														
Costa Rica.....	639				1,234	654							1,713	10,630
El Salvador.....	1,133				2,782	6,017		4,912					28,192	24,602
Guatemala.....						21,417		2,110		21,160	15,021		26,214	1,720
Honduras.....								3,596						3,596
Mexico.....	32,723			1,057	42,566	4,315	20,683		1,968			1,092	89,277	193,681
Nicaragua.....	84,060				82	4,246		10,608		9,842	40,855		37,225	196,693
Panama.....	52,351			4,706	84,371	5,905	13,273	5,292				214,608	6,940	387,446
Central America (other) ¹	6,363			1,620	2,181	6,450	1,179				388	173	20,000	9,482
Balboa, R.P. ²														
Total Central America.....	177,269			7,446	133,216	49,004	56,361	5,292	32,970	57,259	173	301,594	174,578	995,162
WEST COAST SOUTH AMERICA:														
Chile.....	503,792			140,120	153,188	555,476	209,111	58,539	253,468			22,056	467,747	2,925,029
Colombia.....	14,239			1,651	1,081	45,896	1,645	593	1,315			1,353	180,618	20,668
Ecuador.....	95,666			19,211	30,471	34,834	56,673	772	25,137	17,468	35,394	141,814	139,656	697,096
Peru.....	245,080			28,483	130,680	49,974	65,558	4,884	81,448	128,093	171,512	404,773	257,649	1,568,084
South America (other) ¹	11,019			10,566	77,609	23,905	33,567	128	48,172	468,534	25,580	5,953	115,921	820,954
Total South America.....	869,796			200,031	493,029	710,035	366,554	64,916	409,540	614,095	255,895	1,294,690	1,001,641	6,280,222

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OCEANIA:											
Australia	67,254		4,366	2,459	9,019		5,998	28,819		24,632	173,701
British Oceania	814		4		83,448		152,605			5	238,876
French Oceania			1								1
New Zealand	208,169		5,114	13,569	97,575	4,273	12,290	57,319	2,311	8,247	499,500
Oceania (other) ¹	976		26	220	4,334			2,194		5,013	28,865
Total Oceania	277,213		9,511	16,248	196,376	4,273	170,893	88,332	2,311	37,897	940,443
ASIA:											
China											
Taiwan	118		46		6,952	330				354	7,940
Hong Kong			601		1,550	339		2,838		2,632	21,326
Indonesia											
Japan	6,427		10,468		92,249	55,863	671	12,414	48	12,576	31,350
Philippine Islands											222,066
Singapore											3,273
South Korea	598		379		1,122	1,283				134	842
Thailand											804
U.S.S.R.											4,320
Asia (other) ¹	1,660		765		2,071	863	666	3,257	172	2,365	172
Total Asia	8,803	379	11,936		107,217	58,678	1,337	18,509	220	18,061	82,899
GRAND TOTAL	3,197,680	24,049	370,082	991,192	1,472,753	853,950	334,843	2,851,005	891,863	273,454	4,263,982
Percent of Atlantic-bound cargo	4.8	0.0	0.6	1.5	2.2	5.8	1.3	4.3	1.3	0.4	6.5
											32.9

See footnotes at end of table.

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1990
Segregated by Countries in Principal Trade Routes—Continued

	[Long tons]										Percent of total Atlantic- bound cargo										
	To Asia (Middle East)		To Africa						Total	Grand Total											
	Asia (Middle East)	Algeria	Egypt	Morocco	South Africa	Tunisia	Africa (other) ¹														
WEST COAST NORTH AMERICA:																					
United States:																					
Alaska	.....	.....	.....	53,093	.....	.....	.....	.....	.....	.....	53,093	612,336	0.9
Hawaii	201	229,388	0.3							
Mainland	42,647	114,546	934,197	27,361	111,473	43,550	96,897	.....	.....	.....	1,328,024	8,298,052	12.6					
Total United States	42,647	114,546	934,197	80,454	111,473	43,550	97,098	.....	.....	.....	1,381,318	9,139,776	13.8					
WEST COAST CANADA												265,358	270,393	40,957	715,321	249,159	166,049	1,441,879	10,919,048	16.5
WEST COAST CENTRAL AMERICA:																					
Costa Rica	99,788	0.2							
El Salvador	203,572	0.3							
Guatemala	11	.....	.....	.....	13	24,211	46,486	.....	.....	.....	70,710	588,540	0.9		
Honduras	.....	.....	.....	.....	.....	.....	4,416	.....	.....	.....	4,416	37,738	0.1
Mexico	.....	.....	1,445	.....	.....	26,047	.....	.....	.....	.....	27,492	1,705,630	2.6
Nicaragua	1,771	1,771	15,547	315,724	0.5							
Panama	.....	.....	.....	.....	100	.....	.....	.....	.....	.....	100	503,158	0.8
Central America (other) ¹	.....	.....	.....	.....	.....	.....	5,482	.....	.....	.....	5,482	198,305	0.3
Bahoa, R. P.	15	0.0							
Total Central America	11	.....	1,445	13,776	113	50,258	58,170	.....	.....	.....	123,762	3,660,129	5.5				
WEST COAST SOUTH AMERICA:																					
Chile	3,423	5,011	18,513	5,341,749	8.1						
Colombia	801,287	1.2							
Ecuador	24,395	9,645	9,645	8,887,695	13.4						
Peru	14,860	35,442	3,895	39,337	4,214,201	6.4					
South America (other) ¹	10,833	9,202	20,035	1,149,562	1.7					
Total South America	42,678	60,931	26,599	87,530	20,394,494	30.9					

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OCEANIA:										
Australia	1,368								5,257,091	8.0
British Oceania									293,393	0.4
French Oceania									25,114	0.0
New Zealand	921	3,949						3,949	939,671	1.4
Oceania (other) 1	2								120,587	0.2
Total Oceania	2,291	3,949						3,949	6,635,856	10.0
ASIA:										
China									2,195,031	3.3
Taiwan	1,067					123		123	1,263,427	1.9
Hong Kong	101								840,304	1.3
Indonesia									598,020	0.9
Japan	1,855					3,265		3,265	6,341,027	9.6
Philippine Islands									322,437	0.5
Singapore									747,487	1.1
South Korea						83		83	798,388	1.2
Thailand									141,155	0.2
U.S.S.R.						10		10	262,117	0.4
Asia (other) 1	462					20		20	1,848,409	2.8
Total Asia	3,485					3,501		3,501	15,357,802	23.2
GRAND TOTAL	356,470	449,819	976,599	809,551	111,586	342,967	351,417	3,041,939	66,107,105	
Percent of Atlantic-bound cargo	n e	0.7	1.5	1.2	0.2	0.5	0.5	4.6		100.0%

1 Also includes cargo not routed to permit segregation between definite countries.

2 Includes both local and transship cargo

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
EAST COAST UNITED STATES TO WEST COAST UNITED STATES:			
Chemicals and petroleum chemicals	541	509	429
Caustic soda	119	149	98
Chemicals, unclassified	332	197	176
Toulene	28	39	30
Petroleum chemicals, miscellaneous	62	124	125
Grains	57	.....	.....
Soybeans	57	.....	.....
Lumber and products .....	.....	.....	2
Plywood, veneers, composition board .....	.....	.....	2
Machinery and equipment, miscellaneous .....	.....	7	1
Manufactures of iron and steel .....	.....	2	.....
Other and unclassified .....	.....	2	.....
Minerals, miscellaneous .....	.....	11	.....
Nitrates, phosphates and potash .....	.....	66	.....
Ammonium compounds .....	.....	29	.....
Phosphates .....	.....	37	.....
Ores and metals, miscellaneous .....	.....	28	.....
Other agricultural commodities .....	.....	.....	2
Coffee .....	.....	.....	2
Petroleum and products	801	744	567
Crude oil	91	.....	.....
Diesel oil .....	.....	19	.....
Fuel oil, residual	29	54	37
Gasoline	339	221	254
Jet fuel	35	101	.....
Kerosene .....	.....	11	.....
Liquefied gas .....	.....	.....	1
Lubricating oil	271	290	271
Petroleum coke	36	.....	.....
Other and unclassified .....	.....	48	4
Miscellaneous	39	33	11
Container cargo	29	30	10
All other and unclassified	10	3	1
Total	1,439	1,401	1,011
EAST COAST UNITED STATES TO WEST COAST CANADA:			
Chemicals and petroleum chemicals, miscellaneous	48	24	.....
Nitrates, phosphates and potash	194	171	200
Phosphates	194	171	200
Total	243	195	200
EAST COAST UNITED STATES TO WEST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous .....	.....	.....	3
Chemicals and petroleum chemicals	17	1	3
Caustic soda	5	1	2
Chemicals, unclassified	12	.....	1
Coal and coke (excluding petroleum coke) .....	.....	39	174
Coal .....	.....	39	174
Grains	2,014	1,368	946
Barley .....	.....	.....	9
Corn	1,229	571	460
Rice .....	.....	57	14
Sorghum	272	133	.....
Soybeans	152	318	218

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
EAST COAST UNITED STATES TO WEST COAST			
CENTRAL AMERICA—Continued			
Grains—Continued			
Wheat	361	277	245
Other and unclassified		12	
Lumber and products, miscellaneous	1	1	2
Machinery and equipment		3	2
Construction machinery and equipment			2
Other and unclassified		3	
Manufactures of iron and steel, miscellaneous	9	1	4
Nitrates, phosphates and potash	1,328	917	605
Ammonium compounds	181	129	95
Fishmeal			8
Phosphates	989	662	403
Potash	4	10	16
Fertilizers, unclassified	154	116	83
Ores and metals, miscellaneous	113	29	16
Other agricultural commodities	38	2	33
Beans, edible		1	4
Cotton, raw			1
Oilseeds	26		28
Peas, dry		1	
Sugar	12		
Petroleum and products	363	276	197
Diesel oil	144	113	79
Fuel oil, residual		34	33
Gasoline	196	113	77
Jet fuel	8	6	2
Kerosene	8	7	3
Liquefied gas	5	2	2
Lubricating oil		1	
Other and unclassified	2		1
Miscellaneous	83	104	71
Flour, wheat		1	
Oil, vegetable	17	24	21
Paper and paper products	28	17	23
Tallow	37	48	12
Container		3	5
All other and unclassified	1	11	10
Total	<u>3,966</u>	<u>2,741</u>	<u>2,056</u>
EAST COAST UNITED STATES TO WEST COAST			
SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous	4	2	28
Chemicals and petroleum chemicals	275	264	241
Caustic soda	81	88	54
Chemicals, unclassified	181	157	169
Benzene	1	6	3
Toulene	6	6	5
Petroleum coke, miscellaneous	6	7	10
Coal and coke (excluding petroleum coke)	525	591	59
Coal	525	591	59
Grains	1,514	1,331	2,245
Corn	349	259	719
Oats	1	2	5
Rice	174	97	13
Sorghum	30	33	136

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
EAST COAST UNITED STATES TO WEST COAST			
SOUTH AMERICA—Continued			
Grains—Continued			
Soybeans	90	48	324
Wheat	865	889	1,043
Other and unclassified	5	3	5
Lumber and products	4	7	34
Boards and planks			21
Plywood, veneers, composition board	1	1	1
Pulpwood	2	3	7
Other and unclassified	1	3	5
Machinery and equipment	74	92	62
Agricultural machinery and implements	15	18	18
Automobiles, trucks, accessories and parts	28	27	17
Construction machinery and equipment	18	27	18
Electrical machinery and apparatus	7	7	5
Other and unclassified	6	13	4
Manufactures of iron and steel	45	28	28
Angles, shapes and sections	5	8	6
Nails, tacks and spikes		1	2
Plates, sheets and coils	4	10	2
Tubes, pipes and fittings	5	6	7
Wire, bars and rods	28	2	1
Other and unclassified	3	1	10
Minerals, miscellaneous	22	24	34
Asbestos		2	2
Infusorial earth			1
Soda and sodium compounds	18	17	24
Sulfur	4	5	7
Nitrates, phosphates and potash	452	593	700
Ammonium compounds	14	11	9
Nitrate of soda			2
Phosphates	197	187	292
Potash	35	36	32
Fertilizers, unclassified	206	359	365
Ores and metals	63	58	134
Ores	18	18	14
Alumina/bauxite	1		
Other and unclassified	17	18	14
Metals	45	40	120
Aluminum	18	2	1
Iron	1		16
Scrap	26	36	102
Tin, including tinplate		1	
Other and unclassified		1	1
Other agricultural commodities	51	12	16
Beans, edible	6	1	1
Copra and coconuts	1	1	
Cotton, raw	1	2	3
Oilseeds		7	1
Peas, dry	3		1
Rubber, raw	1	1	2
Skin and hides	3		
Sugar	36		8
Petroleum and products	352	558	643
Crude oil		3	
Diesel oil	202	301	327
Fuel oil, residual		27	1

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
EAST COAST UNITED STATES TO WEST COAST			
SOUTH AMERICA—Continued			
Petroleum and products—Continued			
Gasoline	39	114	46
Jet fuel	42	54	182
Kerosene	27	1	.....
Liquefied gas	7	.....	11
Lubricating oil	34	58	76
Other and unclassified	1	.....	.....
Miscellaneous	<u>978</u>	<u>876</u>	<u>855</u>
Bricks and tile	1	4	2
Carbon black .....	.....	.....	1
Clay, fire and china	5	11	7
Fibers, plant	1	2	3
Flour, wheat	73	50	53
Glass and glassware	1	2	2
Groceries, miscellaneous	2	1	3
Marble and stone .....	.....	20	7
Oil, coconut	6	3	3
Oil, vegetable	30	36	23
Paper and paper products	187	147	138
Resin	19	25	32
Rubber, manufactured	3	7	3
Tallow	34	42	56
Textiles	3	4	7
Container cargo	548	454	431
All other and unclassified	65	68	84
Total	<u>4,360</u>	<u>4,436</u>	<u>5,079</u>
EAST COAST UNITED STATES TO BALBOA, R.P.:			
Canned and refrigerated foods, miscellaneous	5	5	3
Chemicals and petroleum chemicals, miscellaneous	11	6	13
Grains	<u>113</u>	<u>135</u>	<u>132</u>
Corn	32	35	24
Rice .....	.....	.....	2
Soybeans	25	28	28
Wheat	55	71	78
Other and unclassified	1	1	.....
Minerals, miscellaneous	2	1	.....
Nitrates, phosphates and potash .....	.....	.....	3
Ores and metals, miscellaneous	9	5	6
Other agricultural commodities, miscellaneous .....	.....	4	.....
Petroleum and products	<u>249</u>	<u>161</u>	<u>123</u>
Diesel oil	84	103	69
Fuel oil, residual	143	28	7
Gasoline	20	8	27
Jet fuel	1	19	.....
Other and unclassified	1	3	20
Miscellaneous	<u>41</u>	<u>33</u>	<u>33</u>
Flour, wheat .....	.....	.....	6
Groceries, miscellaneous	2	1	.....
Oil, coconut .....	.....	.....	1
Oil, vegetable	4	.....	1
Tallow	2	1	1
Container cargo	27	26	23
All other and unclassified	6	5	1
Total	<u>429</u>	<u>350</u>	<u>313</u>

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EAST COAST UNITED STATES TO OCEANIA:			
Canned and refrigerated foods, miscellaneous.....	16	12	19
Chemicals and petroleum chemicals	<u>648</u>	<u>838</u>	<u>690</u>
Caustic soda	517	660	536
Chemicals, unclassified	116	158	147
Benzene	5	3	.....
Toulene	3	1	4
Petroleum coke, miscellaneous.....	7	16	3
Coal and coke (excluding petroleum coke)	<u>32</u>	<u>3</u>	<u>19</u>
Coke	32	3	19
Grains.....	<u>94</u>	<u>86</u>	<u>122</u>
Corn	18	8	10
Sorghum	3	24	.....
Soybeans	60	54	112
Other and unclassified	13	.....	.....
Lumber and products	<u>22</u>	<u>20</u>	<u>28</u>
Pulpwood.....	22	20	28
Machinery and equipment	<u>15</u>	<u>6</u>	<u>7</u>
Agricultural machinery and equipment.....	2	2	2
Automobiles, trucks, accessories and parts	11	1	2
Construction machinery and equipment	1	3	1
Electrical machinery and apparatus .....	.....	.....	1
Other and unclassified	1	.....	1
Manufactures of iron and steel, miscellaneous	11	25	.....
Minerals, miscellaneous.....	<u>39</u>	<u>18</u>	<u>11</u>
Soda and sodium compounds	39	18	10
Sulfur .....	.....	.....	1
Nitrates, phosphates and potash	<u>885</u>	<u>1,026</u>	<u>552</u>
Ammonium compounds	9	18	19
Phosphates.....	483	864	408
Potash	42	43	39
Fertilizers, unclassified.....	351	101	86
Ores and metals, miscellaneous	15	16	5
Other agricultural commodities, miscellaneous	9	.....	.....
Petroleum and products	<u>274</u>	<u>313</u>	<u>207</u>
Crude oil .....	.....	21	.....
Diesel oil.....	.....	.....	65
Fuel oil, residual.....	3	.....	.....
Gasoline	35	28	1
Jet fuel .....	.....	4	.....
Kerosene .....	.....	1	.....
Liquefied gas	35	57	59
Lubricating oil	25	23	32
Petroleum coke.....	133	155	48
Other and unclassified	43	24	2
Miscellaneous	<u>632</u>	<u>657</u>	<u>571</u>
Carbon black.....	.....	.....	33
Clay, fire and china	37	33	25
Oil, vegetable.....	1	1	1
Paper and paper products.....	11	7	38
Resin.....	3	5	1
Rubber, manufactured.....	6	.....	.....
Container cargo	555	607	467
All other and unclassified	19	4	6
Total.....	<u>2,692</u>	<u>3,020</u>	<u>2,231</u>
EAST COAST UNITED STATES TO ASIA:			
Canned and refrigerated foods	<u>298</u>	<u>394</u>	<u>368</u>
Canned foods, miscellaneous	12	8	.....
Refrigerated foods	<u>286</u>	<u>386</u>	<u>368</u>

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EAST COAST UNITED STATES TO ASIA—			
Continued			
Canned and refrigerated foods—Continued			
Refrigerated foods—Continued			
Fish.....	1	1	.....
Fruit, excluding bananas.....	44	167	150
Meat.....	2	.....	.....
Other and unclassified.....	239	218	218
Chemicals and petroleum chemicals.....	3,605	3,639	3,445
Caustic soda.....	138	219	163
Chemicals, unclassified.....	2,262	1,979	1,979
Benzene.....	78	84	106
Toulene.....	80	139	122
Petroleum chemicals, miscellaneous.....	1,047	1,218	1,075
Coal and coke (excluding petroleum coke).....	4,205	4,416	4,812
Coal.....	4,153	4,206	4,732
Coke.....	52	210	80
Grains.....	23,835	24,727	28,701
Barley.....	.....	.....	91
Corn.....	12,348	9,593	14,939
Rice.....	13	.....	33
Sorghum.....	1,718	1,750	2,025
Soybeans.....	5,625	4,684	6,143
Wheat.....	3,934	8,283	5,188
Other and unclassified.....	197	417	282
Lumber and products.....	2,301	2,013	1,117
Boards and planks.....	9	37	20
Plywood, veneers, composition board.....	.....	2	12
Pulpwood.....	728	899	705
Other and unclassified.....	1,564	1,075	380
Machinery and equipment.....	45	51	49
Agricultural machinery and equipment.....	8	.....	3
Automobiles, trucks, accessories and parts.....	8	14	7
Construction machinery and equipment.....	19	13	8
Electrical machinery and apparatus.....	3	6	22
Other and unclassified.....	7	18	9
Manufactures of iron and steel.....	1,203	1,425	115
Angles, shapes and sections.....	85	35	1
Nails, tacks and coils.....	.....	13	.....
Plates, sheets and coils.....	900	1,031	86
Tubes, pipes and fittings.....	10	85	.....
Wires, bars and rods.....	100	108	6
Other and unclassified.....	108	153	22
Minerals, miscellaneous.....	65	11	5
Nitrates, phosphates and potash.....	5,361	5,230	5,256
Ammonium compounds.....	8	54	88
Phosphates.....	4,956	4,726	4,282
Potash.....	93	32	44
Fertilizers, unclassified.....	304	418	842
Ores and metals.....	1,958	1,659	1,870
Ores, miscellaneous.....	56	87	49
Metals.....	1,902	1,572	1,821
Aluminum.....	.....	1	5
Copper.....	6	.....	13
Iron.....	3	.....	35
Lead.....	3	.....	.....
Scrap.....	1,853	1,559	1,762
Tin, including tinplate.....	.....	1	.....

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
EAST COAST UNITED STATES TO ASIA—			
Continued			
Ores and metals—Continued			
Metals—Continued			
Zinc.....		5	1
Other and unclassified.....	37	6	5
Other agricultural commodities.....	125	240	113
Beans, edible.....	67	120	38
Cocoa and cacao beans.....			27
Cotton, raw.....	45	112	
Molasses.....	11	8	8
Oilseeds.....	2		40
Petroleum and products.....	1,836	1,719	2,261
Diesel oil.....	273	37	108
Fuel oil, residual.....	93		55
Gasoline.....	55	17	274
Jet fuel.....	289	287	457
Kerosene.....	66	38	30
Liquefied gas.....	319	373	179
Lubricating oil.....	104	140	97
Petroleum coke.....	591	768	1,051
Other and unclassified.....	46	59	10
Miscellaneous.....	7,229	6,935	6,716
Carbon black.....	21	56	
Cement.....	4		
Clay, fire and china.....	535	456	371
Flour, wheat.....		30	31
Glass and glassware.....			3
Groceries, miscellaneous.....	43	3	11
Marble and stone.....	16	11	4
Oil, vegetable.....	67	61	55
Paper and paper products.....	292	291	240
Resin.....	14	16	32
Rubber, manufactured.....	6	5	1
Tallow.....		2	6
Wax, paraffin.....	8	10	1
Container cargo.....	6,117	5,730	5,801
All other and unclassified.....	106	264	160
Total.....	<u>52,066</u>	<u>52,459</u>	<u>54,828</u>
EAST COAST CANADA TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous.....	1		
Lumber and products, miscellaneous.....		4	
Manufactures of iron and steel, miscellaneous.....			11
Miscellaneous.....	53	13	7
Container cargo.....	53	13	7
Total.....	<u>54</u>	<u>17</u>	<u>17</u>
EAST COAST CANADA TO WEST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous.....	2	1	1
Grains, miscellaneous.....	8	2	4
Lumber and products, miscellaneous.....	4		
Machinery and equipment, miscellaneous.....		1	1
Manufactures of iron and steel, miscellaneous.....			1
Nitrates, phosphates and potash.....	6		
Other agricultural commodities, miscellaneous.....	1	1	

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EAST COAST CANADA TO WEST COAST CENTRAL AMERICA—Continued			
Miscellaneous	8	11	10
Beans, edible .....	.....	1	.....
Flour, wheat	2	3	.....
Oil, vegetable	1	.....	.....
Paper and paper products	4	5	3
Container cargo .....	.....	.....	1
All other and unclassified	1	2	6
Total	<u>28</u>	<u>16</u>	<u>17</u>
EAST COAST CANADA TO WEST COAST SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous	1	2	13
Coal and coke (excluding petroleum coke)	98	.....	.....
Coal	98	.....	.....
Lumber and products .....	.....	1	.....
Pulpwood .....	.....	1	.....
Machinery and equipment, miscellaneous	2	.....	.....
Manufactures of iron and steel, miscellaneous	19	17	.....
Minerals, miscellaneous	4	7	10
Asbestos	4	7	10
Nitrates, phosphates and potash	73	19	37
Phosphates	10	.....	.....
Potash	63	19	37
Ores and metals, miscellaneous .....	.....	22	.....
Miscellaneous	28	34	31
Flour, wheat	9	8	3
Paper and paper products	15	16	24
Container cargo	3	1	1
All other and unclassified	1	9	3
Total	<u>227</u>	<u>102</u>	<u>91</u>
EAST COAST CANADA TO OCEANIA:			
Canned and refrigerated foods, miscellaneous	14	11	2
Lumber and products, miscellaneous	1	.....	.....
Machinery and equipment, miscellaneous .....	.....	.....	2
Manufactures of iron and steel, miscellaneous	7	10	.....
Nitrates, phosphates and potash	30	.....	18
Potash	30	.....	18
Ores and metals, miscellaneous .....	.....	55	3
Miscellaneous	154	196	139
Paper and paper products	32	30	20
Container cargo	122	166	119
Total	<u>206</u>	<u>273</u>	<u>164</u>
EAST COAST CANADA TO ASIA:			
Canned and refrigerated foods	59	49	64
Refrigerated foods	59	49	64
Fish	50	39	47
Meat .....	.....	.....	11
Other and unclassified	9	10	6
Chemicals and petroleum chemicals, miscellaneous	7	.....	.....
Grains	116	276	292
Soybeans	10	35	40
Wheat	106	241	252

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
EAST COAST CANADA TO ASIA—Continued			
Machinery and equipment, Miscellaneous		2	1
Lumber and products	184	282	274
Boards and planks		18	.....
Pulpwood	165	247	251
Other and unclassified	19	17	23
Machinery and equipment, miscellaneous	7	8	10
Manufactures of iron and steel, miscellaneous	383	448	133
Minerals, miscellaneous		4	.....
Nitrates, phosphates and potash	96	.....	40
Ores and metals	225	238	222
Ores, miscellaneous	77	31	41
Metals	148	207	181
Aluminum		3	1
Copper	1	.....	.....
Lead	1	.....	.....
Scrap	146	202	176
Zinc .....		.....	4
Other and unclassified		2	.....
Petroleum and products	126	.....	.....
Fuel oil, residual	93	.....	.....
Jet fuel	25	.....	.....
Lubricating oil	8	.....	.....
Miscellaneous	449	468	428
Flour, wheat .....		.....	33
Marble and stone	42	74	37
Paper and paper products	166	185	154
Resin .....		.....	7
Slag, clinkers and dross	30	10	10
Container cargo	209	197	170
All other and unclassified	2	2	17
Total	1,653	1,773	1,463
EAST COAST CENTRAL AMERICA TO WEST COAST CENTRAL AMERICA:			
Chemicals and petroleum chemicals, miscellaneous			16
Lumber and products, miscellaneous			2
Manufactures of iron and steel, miscellaneous	2	.....	.....
Nitrates, phosphates and potash	338	427	297
Ammonium compounds	41	51	95
Phosphates	28	49	2
Fertilizers, unclassified	269	327	200
Petroleum and products	872	856	2,039
Asphalt	22	21	8
Crude oil	435	382	565
Diesel oil	90	20	78
Fuel oil, residual	19	.....	946
Gasoline	64	34	5
Jet fuel .....		.....	10
Liquefied gas	226	399	427
Other and unclassified	16	.....	.....
Miscellaneous	14	1	1
Cement	13	.....	.....
Paper and paper products .....		.....	1
Container cargo	1	.....	.....
All other and unclassified		1	.....
Total	1,226	1,284	2,356

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
EAST COAST CENTRAL AMERICA TO WEST COAST SOUTH AMERICA:			
Chemicals and petroleum chemicals, miscellaneous . . .	3	8	8
Machinery and equipment, miscellaneous	2	1	5
Manufactures of iron and steel, miscellaneous	7	8	9
Minerals, miscellaneous	1	.....	9
Nitrates, phosphates and potash	90	71	49
Phosphates	4	1	1
Fertilizers, miscellaneous	86	70	48
Ores and metals, miscellaneous	6	11	9
Other agricultural commodities, miscellaneous	2	7	3
Petroleum and products	268	158	78
Asphalt . . . . .	.....	1	.....
Diesel oil	140	65	3
Fuel oil, residual	32	1	8
Gasoline . . . . .	.....	.....	1
Jet fuel	9	.....	4
Liquefied gas	87	92	62
Miscellaneous	69	52	71
Fibers, plant . . . . .	.....	.....	1
Paper and paper products	1	4	5
Resin	1	1	2
Rubber, manufactured	3	2	4
Textiles	1	1	1
Container cargo	52	34	38
All other and unclassified	11	10	20
Total	450	318	241
EAST COAST CENTRAL AMERICA TO BALBOA, R.P.:			
Lumber and products, miscellaneous	1	.....	.....
Petroleum and products	121	250	176
Diesel oil	25	63	33
Fuel, oil, residual	91	187	143
Jet fuel	5	.....	.....
Total	122	250	177
EAST COAST CENTRAL AMERICA TO ASIA:			
Canned and refrigerated foods, miscellaneous	3	.....	.....
Chemicals and petroleum chemicals, miscellaneous	27	45	51
Lumber and products, miscellaneous . . . . .	.....	1	1
Manufactures of iron and steel, miscellaneous	86	132	84
Nitrates, phosphate and potash	124	.....	1
Fertilizers, unclassified	124	.....	1
Ores and metals, miscellaneous	2	48	20
Other agricultural commodities	1	20	142
Beans, edible . . . . .	.....	.....	1
Coffee . . . . .	.....	.....	1
Rubber, raw	1	.....	.....
Sugar . . . . .	.....	20	140
Petroleum and products, miscellaneous	87	10	39
Miscellaneous	74	110	106
Carbon black . . . . .	.....	1	.....
Fibers, plant . . . . .	.....	1	1
Resin	16	17	6
Textiles . . . . .	.....	5	.....
Container cargo	54	68	81
All other and unclassified	4	18	18
Total	403	366	442

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EAST COAST SOUTH AMERICA TO WEST COAST			
UNITED STATES:			
Canned and refrigerated foods, miscellaneous	2	6	7
Chemicals and petroleum chemicals, miscellaneous .....	.....	.....	1
Lumber and products, miscellaneous	56	54	53
Machinery and equipment, miscellaneous	4	1	6
Manufactures of iron and steel, miscellaneous	584	494	555
Ores and metals	<u>68</u>	<u>75</u>	<u>42</u>
Ores	66	17	12
Alumina/bauxite	42	12	12
Iron	24	.....	.....
Other and unclassified .....	.....	5	.....
Metals, miscellaneous	2	58	30
Other agricultural commodities	<u>8</u>	<u>10</u>	<u>9</u>
Beans, edible	1	.....	.....
Cocoa and cacao beans	3	2	2
Coffee	4	8	7
Petroleum and products	<u>786</u>	<u>510</u>	<u>437</u>
Asphalt .....	.....	.....	41
Crude oil	286	.....	.....
Diesel oil .....	.....	88	13
Fuel oil, residual	49	171	.....
Gasoline	329	204	205
Jet fuel	122	34	165
Liquefied gas .....	.....	13	13
Miscellaneous	<u>250</u>	<u>122</u>	<u>113</u>
Bricks and tile	1	.....	3
Cement	114	18	.....
Groceries, miscellaneous .....	.....	.....	1
Marble and stone .....	.....	2	.....
Paper and paper products	9	6	18
Porcelainware .....	.....	.....	1
Rubber, manufactured .....	.....	.....	1
Slag, clinkers and dross	23	.....	.....
Textiles .....	.....	.....	1
Container cargo	92	89	80
All other and unclassified	<u>11</u>	<u>7</u>	<u>8</u>
Total	<u><u>1,758</u></u>	<u><u>1,272</u></u>	<u><u>1,225</u></u>
EAST COAST SOUTH AMERICA TO WEST COAST			
CANADA:			
Lumber and products, miscellaneous	6	9	15
Manufactures of iron and steel, miscellaneous	72	108	50
Ores and metals, miscellaneous	3	.....	9
Other agricultural commodities, miscellaneous	1	.....	.....
Miscellaneous	<u>87</u>	<u>55</u>	<u>13</u>
Bricks and tile	1	.....	.....
Cement	20	27	.....
Paper and paper products	2	2	2
Slag, clinkers and dross	27	.....	.....
Container cargo	29	25	11
All other and unclassified	<u>8</u>	<u>1</u>	<u>.....</u>
Total	<u><u>170</u></u>	<u><u>174</u></u>	<u><u>87</u></u>
EAST COAST SOUTH AMERICA TO WEST COAST			
CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous .....	.....	3	2
Chemicals and petroleum chemicals, miscellaneous	1	.....	.....

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EAST COAST SOUTH AMERICA TO WEST COAST			
CENTRAL AMERICA—Continued			
Grains		14	
Soybeans		14	
Machinery and equipment, miscellaneous			1
Manufactures of iron and steel, miscellaneous	133	127	101
Nitrates, phosphates and potash	19	17	12
Ammonium compounds	14		
Fertilizers, unclassified	5	17	12
Ores and metals, miscellaneous	20	13	54
Other agricultural commodities	81	19	
Oilseeds		19	
Sugar	81		
Petroleum and products	1,552	1,010	1,019
Crude oil	935	704	751
Diesel oil	48	24	29
Fuel oil, residual	493	249	147
Gasoline	30	30	60
Liquefied gas	4	2	2
Lubricating oil		1	30
Other and unclassified	42		
Miscellaneous	30	22	14
Bricks and tile	1		
Glass and glassware	1		
Oil, vegetable	5	5	10
Paper and paper products	1		
Resin		2	
Container cargo	21	4	4
All other and unclassified	1	11	
Total	1,836	1,225	1,204
EAST COAST SOUTH AMERICA TO WEST COAST			
SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous	4		1
Chemicals and petroleum chemicals, miscellaneous	32	6	10
Coal and coke (excluding petroleum coke)	152	163	38
Coal	149	155	26
Coke	3	8	12
Grains, miscellaneous	1	9	10
Lumber and products, miscellaneous	2	1	1
Machinery and equipment, miscellaneous	8	10	9
Manufactures of iron and steel, miscellaneous	134	202	90
Minerals, miscellaneous	36	21	8
Nitrates, phosphates and potash	127	157	158
Ammonium compounds	33	17	16
Nitrate of soda		15	
Phosphates	3	1	1
Fertilizers, unclassified	91	124	141
Ores and metals	24	20	59
Ores	12	11	32
Alumina/bauxite	11	11	9
Iron			23
Manganese	1		
Metals, miscellaneous	12	9	27
Other agricultural commodities	39	1	53
Cotton, raw	1	1	2
Rubber, raw	1		
Sugar	37		51

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EAST COAST SOUTH AMERICA TO WEST COAST			
SOUTH AMERICA—Continued			
Petroleum and products	1,198	1,378	1,550
Asphalt	1	.....	.....
Crude oil	742	859	915
Diesel oil	31	210	185
Fuel oil, residual .....	.....	.....	7
Gasoline	173	131	239
Jet fuel .....	.....	79	28
Liquefied gas	204	56	134
Lubricating oil	47	38	37
Other and unclassified .....	.....	5	5
Miscellaneous	89	97	120
Carbon black	7	20	4
Cement .....	.....	3	14
Flour, wheat .....	.....	5	.....
Glass and glassware	1	.....	.....
Oil, vegetable .....	.....	1	.....
Paper and paper products	8	13	8
Resin	11	6	8
Rubber, manufactured	1	1	1
Container cargo	39	34	54
All other and unclassified	22	14	31
Total	<u>1,845</u>	<u>2,065</u>	<u>2,107</u>
EAST COAST SOUTH AMERICA TO BALBOA, R.P.:			
Canned and refrigerated foods, miscellaneous	1	.....	.....
Chemicals and petroleum chemicals, miscellaneous .....	.....	1	.....
Petroleum and products	3	6	8
Asphalt	2	.....	.....
Gasoline .....	.....	6	.....
Lubricating oil	1	.....	8
Miscellaneous	4	5	4
Oil, vegetable	3	2	2
Container cargo	1	3	2
Total	<u>9</u>	<u>12</u>	<u>12</u>
EAST COAST SOUTH AMERICA TO HAWAII:			
Petroleum and products	61	62	19
Jet fuel	61	62	19
Miscellaneous	108	.....	.....
Cement	57	.....	.....
Slag, clinkers and dross	51	.....	.....
Total	<u>168</u>	<u>62</u>	<u>19</u>
EAST COAST SOUTH AMERICA TO OCEANIA:			
Ores and metals, miscellaneous	3	57	3
Other agricultural commodities, miscellaneous .....	.....	1	.....
Miscellaneous	2	7	.....
Paper and paper products .....	.....	1	.....
Container cargo	1	1	.....
All other and unclassified	1	5	.....
Total	<u>6</u>	<u>66</u>	<u>3</u>
EAST COAST SOUTH AMERICA TO ASIA:			
Canned and refrigerated foods, miscellaneous	55	50	60
Chemicals and petroleum chemicals, miscellaneous	22	.....	3

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EAST COAST SOUTH AMERICA TO ASIA—			
Continued			
Coal and coke (excluding petroleum coke)	52	89	260
Coal	52	89	260
Grains	90		
Soybeans	41		
Wheat	44		
Other and unclassified	5		
Lumber and products, miscellaneous	5	56	64
Manufactures of iron and steel, miscellaneous	453	68	126
Nitrates, phosphates and potash	149	61	1
Fishmeal			1
Fertilizers, unclassified	149	61	
Ores and metals	894	479	474
Ores	294	202	124
Alumina/bauxite	72	56	11
Chrome		11	
Copper	10		
Iron	158	54	54
Manganese	39	81	54
Other and unclassified	15		5
Metals	600	277	350
Aluminum	380	266	334
Iron	208		
Scrap	6	1	
Zinc		2	3
Other and unclassified	6	8	13
Other agricultural commodities	12	40	22
Beans, edible	3		
Cocoa and cacao beans	2	1	1
Coffee	2	3	6
Cotton, raw	4		3
Molasses		36	
Oilseeds	1		
Sugar			11
Wool, raw			1
Petroleum and products	194	123	118
Diesel oil	68		
Gasoline	25	27	
Jet fuel	97	61	
Kerosene		35	
Liquefied gas	4		118
Miscellaneous	133	118	142
Bricks and tile		1	
Clay, fire and china	45	48	66
Groceries, miscellaneous		1	
Liquors and wines			2
Marble and stone	2	1	7
Oil, vegetable			11
Paper and paper products	2		
Resin	3		2
Seeds, excluding oilseeds	3		
Textiles	1		
Wax, paraffin			1
Container cargo	62	60	36
All other and unclassified	15	7	17
Total	<u>2,059</u>	<u>1,086</u>	<u>1,270</u>

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST INDIES TO WEST COAST UNITED STATES:			
Manufactures of iron and steel, miscellaneous	17	16	.....
Nitrates, phosphates and potash .....	.....	53	.....
Ores and metals	86	22	.....
Ore, alumina/bauxite.....	86	22	.....
Petroleum and products	647	359	133
Crude oil	35	.....	47
Diesel oil	5	98	.....
Fuel oil, residual.....	492	54	.....
Gasoline.....	33	179	55
Jet fuel	28	28	31
Liquefied gas	17	.....	.....
Other and unclassified	37	.....	.....
Miscellaneous	13	25	8
Container cargo	13	25	8
Total	764	474	142
WEST INDIES TO WEST COAST CENTRAL AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	3	4	.....
Grains, miscellaneous.....	.....	.....	1
Machinery and equipment, miscellaneous .....	.....	3	1
Manufactures of iron and steel .....	.....	7	16
Angles, shapes and sections .....	.....	3	1
Nails, tacks and spikes.....	.....	1	.....
Plates, sheets and coils .....	.....	.....	13
Tubes, pipes and fittings .....	.....	3	2
Minerals, miscellaneous .....	.....	.....	1
Nitrates, phosphates and potash	32	42	46
Ores and metals, miscellaneous .....	.....	.....	2
Other agricultural commodities	10	35	15
Molasses.....	.....	10	.....
Sugar	10	25	15
Petroleum and products	199	95	169
Asphalt.....	.....	.....	2
Crude oil	17	.....	65
Diesel oil	22	19	42
Fuel oil, residual.....	151	43	2
Gasoline	8	30	46
Jet fuel	1	3	3
Kerosene .....	.....	.....	1
Liquefied gas .....	.....	.....	8
Miscellaneous	26	15	21
Cement .....	.....	.....	2
Glass and glassware	1	4	4
Oil, vegetable.....	5	.....	.....
Paper and paper products.....	2	2	1
Container cargo	17	6	8
All other and unclassified	1	3	6
Total	272	201	274
WEST INDIES TO WEST COAST SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous.....	2	.....	.....
Chemicals and petroleum chemicals, miscellaneous .....	.....	.....	4
Manufactures of iron and steel	8	.....	.....
Wire, bars and rods	6	.....	.....
All other and unclassified	2	.....	.....
Nitrates, phosphates and potash	63	53	86

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST INDIES TO WEST COAST SOUTH AMERICA—			
Continued			
Ores and metals	25	32	29
Ores, miscellaneous .....	.....	.....	15
Metals, miscellaneous	25	32	14
Other agricultural commodities, miscellaneous .....	.....	32	.....
Petroleum and products	446	363	342
Crude oil	105	.....	26
Diesel oil	76	138	178
Fuel oil, residual	4	13	6
Gasoline	168	124	70
Jet fuel	27	14	32
Liquefied gas .....	.....	20	.....
Lubricating oil	66	54	30
Miscellaneous	10	8	5
Marble and stone .....	.....	1	.....
Paper and paper products	1	4	1
Container cargo	5	.....	.....
All other and unclassified	4	3	4
Total	555	487	467
WEST INDIES TO BALBOA, R.P.:			
Minerals, miscellaneous .....	.....	8	.....
Petroleum and products	22	2	26
Diesel oil .....	.....	.....	10
Fuel oil, residual	20	.....	.....
Gasoline .....	.....	1	7
Lubricating oil	2	1	9
Miscellaneous .....	.....	1	4
All other and unclassified .....	.....	1	4
Total	22	11	30
WEST INDIES TO OCEANIA:			
Minerals, miscellaneous .....	.....	.....	32
Salt .....	.....	.....	32
Ores and metals, miscellaneous .....	.....	2	2
Petroleum and products .....	.....	29	.....
Gasoline .....	.....	29	.....
Miscellaneous	4	3	3
Container cargo	4	3	3
Total	4	33	37
WEST INDIES TO ASIA:			
Canned and refrigerated foods	37	35	28
Refrigerated foods	37	35	28
Fish	25	25	20
Fruit, excluding bananas	11	9	7
Other and unclassified	1	1	1
Chemicals and petroleum chemicals, miscellaneous	145	179	64
Machinery and equipment, miscellaneous	1	1	.....
Manufactures of iron and steel, miscellaneous	70	102	97
Nitrates, phosphates and potash	24	42	65
Ores and metals .....	.....	22	53
Ores .....	.....	2	33
Alumina/bauxite .....	.....	.....	32
Other and unclassified .....	.....	2	1
Metals, miscellaneous .....	.....	20	20

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
WEST INDIES TO ASIA—Continued			
Other agricultural commodities	1,223	1,350	1,814
Cocoa and cacao beans		1	
Coffee			1
Cotton, raw			5
Sugar	1,223	1,349	1,808
Petroleum and products	171	67	195
Diesel oil	34		75
Fuel oil, residual			41
Gasoline	65		38
Jet fuel	32	66	17
Lubricating oil	6	1	12
Petroleum products, miscellaneous	34		12
Miscellaneous	142	168	197
Carbon black			1
Fibers, plant			1
Liquors and wines	1		
Oil, vegetable			1
Resin			5
Container cargo	141	167	183
All other and unclassified		1	6
Total	<u>1,814</u>	<u>1,965</u>	<u>2,513</u>
EUROPE TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	60	59	76
Chemicals and petroleum chemicals	30	39	66
Caustic soda		4	7
Chemicals, unclassified	30	35	59
Lumber and products, miscellaneous	8	3	20
Machinery and equipment	185	171	180
Agricultural machinery and implements	1	3	
Automobiles, trucks, accessories and parts	172	162	173
Construction machinery and equipment	3	2	3
Electrical machinery and apparatus	1	2	3
Other and unclassified	8	2	1
Manufactures of iron and steel	593	630	553
Angles, shapes and sections	23	44	35
Nails, tacks and spikes	1		
Plates, sheets and coils	381	452	359
Tubes, pipes and fittings	20	4	8
Wires, bars and rods	92	102	105
Other and unclassified	76	28	46
Nitrates, phosphates and potash	399	393	328
Ammonium compounds	79	80	51
Nitrate of soda		42	47
Phosphates	15		
Potash	10		10
Fertilizers, unclassified	295	271	220
Ores and metals	9	13	26
Ores, miscellaneous		5	
Metals	9	8	26
Aluminum	2	2	2
Iron	7		19
Tin, including tinplate		1	
Zinc			5
Other and unclassified		5	
Other agricultural commodities, miscellaneous	2	4	1

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EUROPE TO WEST COAST UNITED STATES—			
Continued			
Petroleum and products	387	230	503
Asphalt		4	
Diesel oil			14
Fuel oil, residual		37	
Gasoline	238	147	407
Jet fuel	36		57
Kerosene			25
Other and unclassified	113	42	
Miscellaneous	1,984	1,817	1,710
Bricks and tile	2	8	7
Cement	230	130	115
Clay, fire and china		2	
Glass and glassware		1	1
Groceries, miscellaneous	2		
Liquors and wines	2	4	4
Marble and stone	5	7	4
Oil, vegetable	17	11	5
Paper and paper products	64	77	136
Rubber, manufactured		1	1
Container cargo	1,608	1,561	1,409
All other and unclassified	54	15	28
Total	<u>3,657</u>	<u>3,359</u>	<u>3,463</u>
EUROPE TO WEST COAST CANADA:			
Canned and refrigerated foods, miscellaneous	9	9	8
Chemicals and petroleum chemicals, miscellaneous			3
Lumber and products, miscellaneous	1		5
Machinery and equipment	14	16	6
Automobiles, trucks, accessories and parts	11	15	6
Construction machinery and equipment	2	1	
Other and unclassified	1		
Manufactures of iron and steel	115	175	250
Angles, shapes and sections	5	21	23
Plates, sheets and coils	67	78	118
Tubes, pipes and fittings	6	9	17
Wire, bars and rods	25	33	73
Other and unclassified	12	34	19
Nitrates, phosphates and potash	17		
Fertilizers, unclassified	17		
Ores and metals, miscellaneous	75	114	138
Miscellaneous	186	209	173
Bricks and tile		1	1
Clay, fire and china		1	
Marble and stone	1		
Oil, vegetable			6
Paper and paper products	1		
Container cargo	175	203	161
All other and unclassified	9	4	5
Total	<u>417</u>	<u>523</u>	<u>583</u>
EUROPE TO WEST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous	11	15	23
Chemicals and petroleum chemicals, miscellaneous	25	14	18

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EUROPE TO WEST COAST CENTRAL AMERICA—			
Continued			
Grains.....	52	80	112
Barley.....	2	1	.....
Corn.....	.....	.....	2
Rice.....	5	17	18
Sorghum.....	.....	1	2
Soybeans.....	.....	.....	5
Wheat.....	41	48	68
Other and unclassified.....	4	13	17
Lumber and products, miscellaneous.....	2	.....	.....
Machinery and equipment.....	20	33	45
Agricultural machinery and implements.....	2	4	5
Automobiles, trucks, accessories and parts.....	12	23	21
Construction machinery and equipment.....	4	4	11
Electrical machinery and apparatus.....	1	1	1
Other and unclassified.....	1	1	7
Manufactures of iron and steel.....	67	85	94
Angles, shapes and sections.....	1	4	9
Plates, sheets and coils.....	29	24	39
Tubes, pipes and fittings.....	1	25	2
Wire, bars and rods.....	22	30	38
Other and unclassified.....	14	2	6
Minerals, miscellaneous.....	3	3	3
Nitrates, phosphates and potash.....	306	470	425
Ammonium compounds.....	41	40	51
Phosphates.....	.....	.....	1
Potash.....	.....	13	32
Fertilizers, unclassified.....	265	417	341
Ores and metals, miscellaneous.....	8	6	7
Other agricultural commodities.....	141	13	6
Beans, edible.....	.....	1	1
Cotton, raw.....	.....	.....	4
Oilseeds.....	90	11	.....
Rubber, raw.....	.....	.....	1
Sugar.....	51	1	.....
Petroleum and products.....	32	177	598
Crude oil.....	.....	120	451
Diesel oil.....	13	29	77
Fuel oil, residual.....	6	5	.....
Gasoline.....	.....	16	33
Jet fuel.....	1	2	.....
Liquefied gas.....	3	.....	.....
Lubricating oil.....	9	5	14
Other and unclassified.....	.....	.....	23
Miscellaneous.....	110	153	156
Cement.....	.....	2	2
Clay, fire and china.....	.....	.....	1
Fibers, plant.....	.....	2	2
Flour, wheat.....	4	5	9
Glass and glassware.....	2	1	3
Groceries, miscellaneous.....	1	.....	3
Liquors and wines.....	2	.....	.....
Marble and stone.....	2	.....	.....
Oil, vegetable.....	2	4	4
Paper and paper products.....	24	19	29
Resin.....	1	.....	2
Rubber, manufactured.....	1	2	3

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EUROPE TO WEST COAST CENTRAL AMERICA—			
Continued			
Miscellaneous—Continued			
Seeds, excluding oilseeds		2	
Tallow	1	3	4
Textiles	1	2	4
Wax, paraffin	3	1	1
Container cargo	39	69	51
All other and unclassified	27	41	38
Total	<u>777</u>	<u>1,047</u>	<u>1,487</u>
EUROPE TO WEST COAST SOUTH AMERICA:			
Canned and refrigerated foods	10	23	43
Canned foods	6	16	27
Fish	1		
Fruit			1
Milk	5	16	25
Other and unclassified			1
Refrigerated foods	4	7	16
Dairy products	1	3	3
Other and unclassified	3	4	13
Chemicals and petroleum chemicals	63	34	71
Caustic soda	5	12	45
Chemicals, unclassified	32	20	25
Benzene	3	1	
Petroleum chemicals, miscellaneous	23	1	1
Coal and coke (excluding petroleum coke)			27
Coal			6
Coke			21
Grains	43	87	91
Barley	8	4	24
Oats		3	
Rice	2		4
Sorghum	5		
Wheat	17	71	35
Other and unclassified	11	9	28
Machinery and equipment	69	46	60
Agricultural machinery and implements	10	7	7
Automobiles, trucks, accessories and parts	21	18	21
Construction machinery and equipment	26	11	14
Electrical machinery and apparatus	6	5	6
Other and unclassified	6	5	12
Manufactures of iron and steel	118	92	249
Angles, shapes and sections	7	7	15
Nails, tacks and spikes		2	3
Plates, sheets and coils	78	55	78
Tubes, pipes and fittings	8	7	17
Wire, bars and rods	11	20	128
Other and unclassified	14	1	8
Minerals, miscellaneous	23	26	16
Borax	1	1	
Soda and sodium compounds	21	25	16
Sulfur	1		
Nitrates, phosphates and potash	452	391	195
Ammonium compounds	44	42	51
Fishmeal			2
Nitrate of soda	2		3

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
EUROPE TO WEST COAST SOUTH AMERICA—			
Continued			
Nitrates, phosphates and potash—Continued			
Phosphates.....	8	21	23
Potash.....	27	21	8
Fertilizers, unclassified.....	371	307	108
Other and unclassified.....			5
Ores and metals.....	19	61	92
Ores, miscellaneous.....	6	36	77
Metals.....	13	25	15
Aluminum.....			1
Copper.....		1	
Iron.....	6	4	
Tin, including tinplate.....	6	16	12
Zinc.....	1	3	
Other and unclassified.....		1	2
Other agricultural commodities.....	60	41	180
Cotton, raw.....			1
Molasses.....	2	1	3
Sugar.....	58	40	176
Petroleum and products.....	425	152	109
Asphalt.....		3	
Diesel oil.....	146	77	24
Fuel oil, residual.....	118	44	44
Gasoline.....	87	2	6
Jet fuel.....	22		
Liquefied gas.....	18		11
Lubricating oil.....	25	25	24
Other and unclassified.....	9	1	
Miscellaneous.....	811	760	697
Bricks and tile.....	4	13	3
Cement.....	1	1	3
Clay, fire and china.....	1		2
Fibers, plant.....	1	2	1
Flour, wheat.....	46	33	37
Glass and glassware.....	2	2	2
Groceries, miscellaneous.....	2	3	2
Liquors and wines.....			1
Oil, fish.....			2
Oil, vegetable.....	4	1	1
Paper and paper products.....	62	52	42
Resin.....	1	1	2
Rubber, manufactured.....		1	1
Textiles.....	1	1	1
Wax, paraffin.....	3	4	4
Container cargo.....	568	563	490
All other and unclassified.....	115	83	103
Total.....	<u>2,093</u>	<u>1,711</u>	<u>1,830</u>
EUROPE TO OCEANIA:			
Canned and refrigerated foods, miscellaneous.....	13	18	12
Chemicals and petroleum chemicals.....	96	144	132
Caustic soda.....	42	61	51
Chemicals, unclassified.....	50	65	77
Benzene.....	1	1	1
Petroleum chemicals, miscellaneous.....	3	17	3
Grains, miscellaneous.....	2	12	7
Lumber and products, miscellaneous.....	4	4	2

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
EUROPE TO OCEANIA—Continued			
Machinery and equipment	29	23	26
Agricultural machinery and implements	3	2	3
Automobiles, trucks, accessories and parts	21	14	14
Construction machinery and equipment	3	4	3
Electrical machinery and apparatus	2	3	4
Other and unclassified .....	.....	.....	2
Manufactures of iron and steel	55	54	52
Angles, shapes and sections	9	4	13
Nails, tacks and spikes .....	.....	1	1
Plates, sheets and coils	14	14	17
Tubes, pipes and fittings	9	11	6
Wire, bars and rods	20	14	9
Other and unclassified	3	10	6
Minerals, miscellaneous	7	6	11
Salt	4	4	9
Soda and sodium compounds	3	2	2
Nitrates, phosphates and potash	36	49	59
Ammonium compounds	16	4	12
Nitrate of soda	5	.....	.....
Phosphates	5	1	.....
Potash	7	26	4
Fertilizers, unclassified	3	18	43
Ores and metals, miscellaneous	28	2	3
Other agricultural commodities, miscellaneous	2	2	3
Petroleum and products	40	10	7
Asphalt .....	.....	1	.....
Gasoline .....	.....	.....	1
Liquefied gas	9	.....	.....
Lubricating oil	5	9	4
Petroleum coke	24	.....	.....
Other and unclassified	2	.....	2
Miscellaneous	702	717	713
Bricks and tile	1	1	1
Cement	5	6	14
Flour, wheat	15	15	12
Glass and glassware	1	1	1
Liquors and wines	1	1	.....
Oil, vegetable	12	13	13
Paper and paper products	11	7	16
Textiles	1	.....	.....
Wax, paraffin .....	.....	1	.....
Container cargo	601	618	606
All other and unclassified	54	53	50
Total	1,014	1,041	1,027
EUROPE TO ASIA:			
Canned and refrigerated foods	59	35	41
Canned foods, miscellaneous .....	.....	2	.....
Refrigerated foods, miscellaneous	59	33	41
Chemicals and petroleum chemicals	152	210	218
Caustic soda	5	21	13
Chemicals, unclassified	128	136	147
Benzene	3	2	12
Toulene .....	.....	1	1
Petroleum chemicals, miscellaneous	16	50	45
Lumber and products, miscellaneous	5	7	50

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

Fiscal year

	1990	1989	1988
EUROPE TO ASIA—Continued			
Machinery and equipment	14	15	41
Automobiles, trucks, accessories and parts	12	14	41
Construction machinery and equipment	1	.....	.....
Other and unclassified	1	1	.....
Manufactures of iron and steel, miscellaneous .....	.....	8	62
Nitrates, phosphates and potash	30	24	.....
Potash	30	24	.....
Ores and metals, miscellaneous	47	17	72
Other agricultural commodities, miscellaneous .....	.....	.....	1
Petroleum and products, miscellaneous	3	8	29
Miscellaneous	122	168	133
Groceries, miscellaneous	1	.....	.....
Marble and stone .....	.....	4	.....
Oil, vegetable	2	1	1
Paper and paper products	17	9	10
Container cargo	89	145	104
All other and unclassified	13	9	18
Total	433	492	648
AFRICA TO WEST COAST UNITED STATES:			
Machinery and equipment, miscellaneous	1	.....	.....
Manufactures of iron and steel, miscellaneous	11	.....	.....
Ores and metals	21	15	10
Ores	21	15	10
Alumina/bauxite ore .....	.....	5	.....
Manganese ore .....	.....	4	6
Other and unclassified	21	6	4
Petroleum and products	54	.....	27
Fuel oil, residual	54	.....	.....
Gasoline .....	.....	.....	27
Miscellaneous	57	5	12
Cement	34	.....	.....
Marble and stone	1	1	3
Slag, clinkers and dross	15	.....	.....
Container cargo	7	3	8
All other and unclassified .....	.....	1	1
Total	145	20	51
AFRICA TO WEST COAST CANADA:			
Nitrates, phosphates and potash	712	952	787
Phosphates	712	952	787
Miscellaneous	1	3	1
Groceries, miscellaneous .....	.....	1	.....
Container cargo	1	2	1
Total	713	956	789
AFRICA TO WEST COAST CENTRAL AMERICA:			
Grains, miscellaneous	14	.....	5
Manufactures of iron and steel, miscellaneous .....	.....	.....	2
Nitrates, phosphates and potash	149	305	204
Phosphates	149	305	191
Fertilizers, unclassified .....	.....	.....	13
Miscellaneous	1	1	.....
Container cargo	1	1	.....
Total	164	306	212

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
AFRICA TO WEST COAST SOUTH AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	12	7	.....
Grains, miscellaneous	14	.....	.....
Manufactures of iron and steel, miscellaneous . . . . .	.....	35	21
Nitrates, phosphates and potash	16	23	26
Fertilizers, unclassified	16	23	26
Petroleum and products, miscellaneous . . . . .	.....	42	8
Miscellaneous	3	2	4
Paper and paper products	2	1	4
Container cargo . . . . .	.....	1	.....
Total	45	110	60
AFRICA TO OCEANIA:			
Chemicals and petroleum chemicals, miscellaneous . . . . .	.....	4	14
Nitrates, phosphates and potash	168	161	88
Phosphates	168	161	88
Miscellaneous . . . . .	.....	1	.....
Container cargo . . . . .	.....	1	.....
Total	168	166	101
AFRICA TO ASIA:			
Canned and refrigerated foods	31	29	38
Fish, refrigerated	31	29	38
Ores and metals, miscellaneous	40	.....	.....
Other agricultural commodities, miscellaneous . . . . .	.....	3	7
Miscellaneous	4	6	22
Groceries, miscellaneous . . . . .	.....	.....	6
Oil, vegetable . . . . .	.....	.....	1
Rubber, manufactured . . . . .	.....	.....	1
Seeds, excluding oilseeds . . . . .	.....	.....	1
Container cargo	4	6	12
All other and unclassified . . . . .	.....	.....	1
Total	75	39	67
ASIA (MIDDLE EAST) TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	1	1	1
Petroleum and products	59	95	130
Gasoline	34	95	130
Other and unclassified	25	.....	.....
Miscellaneous	38	36	38
Container cargo	38	36	38
Total	98	133	169

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST COAST UNITED STATES TO EAST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	3	2	.....
Chemicals and petroleum chemicals	48	75	64
Caustic soda .....	.....	4	.....
Chemicals, unclassified	48	71	64
Lumber and products, miscellaneous	23	46	.....
Machinery and equipment .....	.....	1	6
Automobiles, trucks, accessories and parts .....	.....	1	4
Construction machinery and equipment .....	.....	.....	1
Other and unclassified .....	.....	.....	1
Petroleum and products	633	722	747
Crude oil	123	215	480
Diesel oil	33	49	102
Fuel oil, residual	146	121	36
Gasoline	120	89	.....
Jet fuel	70	5	.....
Liquefied gas	8	2	.....
Lubricating oil	122	123	99
Petroleum coke .....	.....	104	.....
Other and unclassified	11	14	30
Miscellaneous	105	71	54
Liquors and wines	4	.....	.....
Oil, vegetable	21	.....	.....
Paper and paper products .....	.....	8	.....
Container cargo	73	63	53
All other and unclassified	7	.....	1
Total	814	918	872
WEST COAST UNITED STATES TO EAST COAST CANADA:			
Canned and refrigerated foods, miscellaneous .....	.....	1	.....
Coal and coke (excluding petroleum coke)	24	.....	.....
Coke	24	.....	.....
Nitrates, phosphates and potash .....	.....	47	.....
Ores and metals, miscellaneous .....	.....	.....	10
Petroleum and products	254	110	178
Crude oil .....	.....	13	.....
Fuel oil, residual	108	.....	.....
Jet fuel .....	.....	.....	38
Lubricating oil .....	.....	.....	26
Petroleum coke	146	97	114
Miscellaneous	3	3	3
Container cargo	3	3	3
Total	280	160	191
WEST COAST UNITED STATES TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods .....	.....	1	3
Canned foods .....	.....	1	2
Milk .....	.....	1	2
Refrigerated foods .....	.....	.....	1
Other and unclassified .....	.....	.....	1
Chemicals and petroleum chemicals, miscellaneous .....	.....	5	.....
Coal and coke (excluding petroleum coke) .....	.....	11	.....
Coke .....	.....	11	.....
Lumber and products	5	6	42
Pulpwood	5	6	42

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
WEST COAST UNITED STATES TO EAST COAST			
SOUTH AMERICA—Continued			
Machinery and equipment	4	5	2
Automobiles, trucks, accessories and parts	4		
Agricultural machinery and implements			1
Construction machinery and equipment		2	1
Other, unclassified		3	
Minerals, miscellaneous	143	65	13
Borax	1	10	1
Soda and sodium compounds	77	12	
Sulfur	65	43	12
Nitrates, phosphates, and potash		6	2
Nitrate of soda			2
Fertilizers, unclassified		6	
Ores and metals	31	51	1
Ores, miscellaneous	31	40	
Metals, miscellaneous		11	1
Other agricultural commodities			1
Cotton			1
Petroleum and products	136	151	108
Fuel oil, residual	127	53	
Petroleum coke	9	98	108
Miscellaneous	23	23	60
Clay, fire and china			5
Paper and paper products	10		10
Seeds, excluding oilseeds			1
Container cargo	12	23	42
All other and unclassified	1		2
Total	<u>344</u>	<u>324</u>	<u>232</u>
WEST COAST UNITED STATES TO WEST INDIES:			
Canned and refrigerated foods, miscellaneous			3
Grains		26	34
Rice		26	34
Petroleum and products	373	387	448
Crude oil		62	
Diesel oil	7	3	64
Fuel oil, residual	362	304	384
Gasoline		18	
Other and unclassified	4		
Miscellaneous	7	4	4
Container cargo	7	4	4
Total	<u>381</u>	<u>416</u>	<u>490</u>
WEST COAST UNITED STATES TO EUROPE:			
Canned and refrigerated foods	207	183	208
Refrigerated foods;	207	183	208
Fish	107	83	76
Fruit, excluding bananas	22	13	31
Other and unclassified	78	87	101
Chemicals and petroleum chemicals	62	92	61
Chemicals, unclassified	35	60	31
Petroleum chemicals, miscellaneous	27	32	30
Coal and coke (excluding petroleum coke)	214	129	205
Coal	103	80	99
Coke	111	49	106
Grains	241	185	157

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST COAST UNITED STATES TO EUROPE—			
Continued			
Grains—Continued			
Rice.....	160	152	126
Wheat.....	81	30	31
Other and unclassified.....	.....	3	.....
Lumber and products.....	629	629	732
Boards and planks.....	198	208	244
Plywood, veneers, composition board.....	67	85	87
Pulpwood.....	341	237	232
Other and unclassified.....	23	99	169
Machinery and equipment.....	.....	.....	1
Other and unclassified.....	.....	.....	1
Manufactures of iron and steel, miscellaneous.....	.....	28	.....
Minerals, miscellaneous.....	468	559	531
Borax.....	410	383	426
Salt.....	.....	.....	5
Soda and sodium compound.....	58	56	80
Sulfur.....	.....	120	20
Nitrates, phosphates, and potash.....	21	16	88
Fishmeal.....	21	16	25
Fertilizers, miscellaneous.....	.....	.....	63
Ores and metals.....	391	406	341
Ores.....	304	287	295
Copper.....	31	55	107
Iron.....	23	15	.....
Lead.....	74	77	92
Tin.....	.....	2	.....
Zinc.....	139	88	90
Other and unclassified.....	37	50	6
Metals.....	87	119	46
Copper.....	.....	11	6
Lead.....	22	.....	12
Scrap.....	.....	85	.....
Zinc.....	65	23	28
Other agricultural commodities.....	7	9	55
Beans, edible.....	1	.....	2
Cotton, raw.....	6	5	11
Molasses.....	.....	.....	28
Peas, dry.....	.....	4	14
Petroleum and products.....	2,045	1,927	2,087
Diesel oil.....	.....	.....	28
Fuel oil, residual.....	.....	48	194
Liquefied gas.....	12	3	.....
Lubricating oil.....	6	2	4
Petroleum coke.....	2,027	1,874	1,831
Other and unclassified.....	.....	.....	30
Miscellaneous.....	1,341	1,223	1,065
Clay, fire and china.....	15	10	15
Flour, wheat.....	2	.....	.....
Groceries, miscellaneous.....	9	13	15
Oil coconut.....	.....	4	1
Oil, vegetable.....	12	14	16
Paper and paper products.....	8	41	18
Slag clinkers and dross.....	.....	.....	2
Wax, paraffin.....	4	.....	.....
Container cargo.....	1,246	1,105	934

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
WEST COAST UNITED STATES TO EUROPE—			
Continued			
Miscellaneous—Continued			
All other and unclassified	45	36	64
Total	<u>5,628</u>	<u>5,386</u>	<u>5,531</u>
WEST COAST UNITED STATES TO AFRICA:			
Grains	957	631	2,184
Barley	26	.....	125
Rice	27	.....	30
Wheat	904	631	2,029
Lumber and products	97	15	26
Boards and planks	93	.....	.....
Pulpwood	4	15	.....
Other and unclassified .....	.....	.....	26
Manufactures of iron and steel, miscellaneous .....	.....	6	.....
Minerals, miscellaneous	182	58	122
Infusorial earth .....	.....	.....	1
Salt .....	.....	.....	5
Soda and sodium compound	85	.....	45
Sulfur	97	58	71
Nitrates, phosphates and potash	27	.....	.....
Ores and metals	49	56	5
Ores, miscellaneous	49	41	5
Metals, miscellaneous .....	.....	15	5
Other agricultural commodities	33	26	58
Cotton, raw	33	26	32
Sugar .....	.....	.....	26
Petroleum and products .....	.....	48	83
Fuel oil, residual .....	.....	48	83
Miscellaneous	36	11	29
Flour, wheat .....	.....	.....	29
Container cargo	36	11	.....
Total	<u>1,381</u>	<u>851</u>	<u>2,507</u>
WEST COAST CANADA TO EAST COAST UNITED STATES:			
Chemicals and petroleum chemicals, miscellaneous	194	349	453
Lumber and products	788	1,242	1,721
Boards and planks	785	1,217	1,688
Pulpwood	2	7	2
Other and unclassified	1	18	31
Nitrates, phosphates, potash .....	.....	.....	21
Nitrate of soda .....	.....	.....	21
Other agricultural commodities .....	.....	20	.....
Oilseeds .....	.....	20	.....
Petroleum and products	101	205	112
Crude oil	80	106	112
Diesel oil	21	75	.....
Gasoline .....	.....	24	.....
Miscellaneous	1	17	2
Clay, fire and china .....	.....	16	.....
Paper and paper products	1	.....	1
Container cargo .....	.....	1	.....
All other and unclassified .....	.....	.....	1
Total	<u>1,084</u>	<u>1,834</u>	<u>2,309</u>

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST COAST CANADA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous		2	1
Chemicals and petroleum chemicals, miscellaneous		7	.....
Coal and coke (excluding petroleum coke) .....		.....	52
Coal .....		.....	52
Grains	65	69	67
Barley	16	19	21
Wheat	49	45	46
Other and unclassified		5	.....
Lumber and products	17	48	59
Pulpwood	17	48	59
Minerals, miscellaneous	261	232	168
Soda and sodium compounds		8	.....
Sulfur	261	223	168
Other and unclassified		1	.....
Nitrates, phosphates, and potash	35	78	13
Ammonium compounds	4	.....	.....
Potash	31	78	13
Ores and metals, miscellaneous	35	15	52
Other agricultural commodities, miscellaneous	16	.....	1
Miscellaneous	50	37	70
Paper and paper products	40	25	61
Container cargo	9	12	9
All other and unclassified	1	.....	.....
Total	481	485	483
WEST COAST CANADA TO WEST INDIES:			
Chemicals and petroleum chemicals, miscellaneous			5
Grains			25
Wheat			25
Lumber and products	44	71	83
Boards and planks	42	71	80
Plywood, veneers, composition board	2	.....	3
Minerals, miscellaneous:	39	30	36
Sulfur	39	30	36
Nitrates, phosphates, and potash	24	39	8
Other agricultural commodities, miscellaneous			10
Miscellaneous	2	6	35
Paper and paper products	2	6	13
All other and unclassified .....	.....	.....	22
Total	109	146	202
WEST COAST CANADA TO EUROPE:			
Canned and refrigerated foods	24	21	20
Refrigerated foods	24	21	20
Fish	6	6	3
Other and unclassified	18	15	17
Chemicals and petroleum chemicals	4	147	33
Benzene		6	.....
Chemicals, unclassified	4	109	30
Petroleum chemicals, miscellaneous		32	3
Coal and coke (excluding petroleum coke)	1,944	1,582	1,242
Coal	1,944	1,582	1,242
Grains	288	243	52
Barley	186	148	.....
Wheat	73	73	.....
Other and unclassified	29	22	52

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
WEST COAST CANADA TO EUROPE—Continued			
Lumber and products	3,401	3,186	3,421
Boards and planks	1,684	1,575	1,832
Plywood, veneers, composition board	117	111	105
Pulpwood	1,440	1,301	1,339
Other and unclassified	160	199	145
Machinery and equipment, miscellaneous	2	1	.....
Minerals, miscellaneous	985	389	320
Asbestos	3	3	3
Borax	10	1	315
Sulfur	972	385	2
Nitrates, phosphates, and potash	37	17	24
Potash	13	16	.....
Fishmeal	1	1	1
Fertilizer, unclassified	23	.....	23
Ores and metals	91	195	119
Ores	70	146	62
Copper	70	126	56
Iron .....	.....	20	.....
Lead .....	.....	.....	2
Zinc .....	.....	.....	4
Metals	21	49	57
Aluminum	2	7	4
Copper .....	.....	6	27
Lead	15	20	17
Zinc	4	13	9
Other and unclassified .....	.....	3	.....
Other agricultural commodities	8	15	84
Beans, edible	4	.....	2
Oilseeds	4	15	50
Peas, dry .....	.....	.....	32
Petroleum and products	159	.....	.....
Petroleum coke	159	.....	.....
Miscellaneous	594	639	624
Marble and stone .....	.....	.....	6
Oil, vegetable	2	1	.....
Paper and paper products	311	332	269
Seeds, excluding oilseeds	3	.....	3
Tallow	28	30	21
Container cargo	235	246	209
All other and unclassified	15	30	26
Total	7,537	6,435	5,939
WEST COAST CANADA TO AFRICA:			
Coal and coke (excluding petroleum coke) .....	.....	.....	86
Coal .....	.....	.....	86
Grains	156	78	117
Wheat	156	78	117
Lumber and products	267	314	161
Boards and planks	267	293	161
Plywood, veneers, composition board .....	.....	19	.....
Pulpwood .....	.....	2	.....
Minerals, miscellaneous	1,016	1,045	2,714
Sulfur	1,016	1,045	2,714
Other agricultural commodities, miscellaneous	2	.....	.....
Miscellaneous .....	.....	4	2
Paper and paper products .....	.....	4	2
Total	1,442	1,441	3,080

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
WEST COAST CANADA TO ASIA (MIDDLE EAST):			
Lumber and products, miscellaneous	6	2	16
Minerals, miscellaneous	259	245	224
Sulfur	259	245	224
Miscellaneous	1	.....	1
Paper and paper products	1	.....	1
Total	<u>265</u>	<u>247</u>	<u>242</u>
WEST COAST CENTRAL AMERICA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	2	21	77
Refrigerated foods	2	21	77
Bananas	1	20	77
Other and unclassified	1	1	.....
Chemicals and petroleum chemicals	150	176	9
Chemicals, unclassified	150	171	9
Petroleum chemicals, miscellaneous .....	.....	5	.....
Machinery and equipment	5	.....	.....
Automobiles, trucks, accessories, and parts	5	.....	.....
Manufactures of iron and steel	97	2	10
Plates, sheets and coils	61	.....	.....
Tubes pipes and fittings .....	.....	2	10
Other and unclassified	36	.....	.....
Minerals, miscellaneous	537	332	451
Salt	537	332	451
Nitrates, phosphates, and potash	10	32	13
Fishmeal	10	20	13
Fertilizers, unclassified .....	.....	12	.....
Ores and metals	143	.....	26
Ores	143	.....	26
Iron	106	.....	.....
Other and unclassified	37	.....	26
Other agricultural commodities	626	235	376
Coffee	27	3	8
Molasses	172	142	167
Skins and hides	7	.....	.....
Sugar	420	90	201
Petroleum and products	3	12	40
Gasoline	3	12	40
Miscellaneous	3	21	16
Oil fish	3	.....	.....
Container cargo .....	.....	1	1
All other and unclassified .....	.....	20	15
Total	<u>1,575</u>	<u>833</u>	<u>1,018</u>
WEST COAST CENTRAL AMERICA TO EAST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous .....	.....	1	.....
Chemicals and petroleum chemicals	23	.....	76
Chemicals, unclassified	23	.....	74
Petroleum chemicals, miscellaneous .....	.....	.....	2
Grains	67	.....	3
Sorghum	9	.....	.....
Wheat	58	.....	3
Lumber and products, miscellaneous .....	.....	3	.....
Machinery and equipment, miscellaneous	1	.....	.....
Minerals, miscellaneous	27	.....	.....
Salt	27	.....	.....

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST COAST CENTRAL AMERICA TO EAST COAST CENTRAL AMERICA—Continued			
Nitrates, phosphates, and potash	268	416	231
Phosphates	268	416	231
Ores and metals	24	.....	.....
Metals	24	.....	.....
Copper	24	.....	.....
Other agricultural commodities, miscellaneous	15	38	.....
Petroleum and products	93	58	94
Diesel oil	2	19	50
Fuel oil, residual	53	.....	4
Gasoline	19	39	39
Jet fuel .....	.....	.....	1
Other and unclassified	19	.....	.....
Miscellaneous	17	2	6
Oil, vegetable	17	.....	4
Container cargo .....	.....	.....	2
All other and unclassified .....	.....	2	.....
Total	533	518	410
WEST COAST CENTRAL AMERICA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	56	60	27
Refrigerated foods	56	60	27
Dairy products .....	.....	1	.....
Fish	56	59	27
Chemicals and petroleum chemicals, miscellaneous	7	.....	.....
Lumber and products, miscellaneous	3	.....	.....
Nitrates, phosphates, and potash	5	.....	.....
Ores and metals	30	13	13
Ores	30	12	12
Copper	12	12	12
Other and unclassified	18	.....	.....
Metals .....	.....	1	1
Scrap .....	.....	1	1
Other agricultural commodities	37	20	18
Sugar	37	20	18
Petroleum and products .....	.....	.....	34
Gasoline .....	.....	.....	34
Miscellaneous	2	9	5
Container cargo	1	9	5
All other and unclassified	1	.....	.....
Total	141	102	96
WEST COAST CENTRAL AMERICA TO WEST INDIES:			
Canned and refrigerated foods	94	90	128
Refrigerated foods	94	90	128
Dairy products .....	.....	.....	1
Fish	93	89	126
Other and unclassified	1	1	1
Chemicals and petroleum chemicals, miscellaneous	13	.....	.....
Grains, miscellaneous	16	.....	.....
Lumber and products	15	19	27
Boards and planks	15	19	27
Machinery and equipment, miscellaneous	1	.....	.....
Manufactures of iron and steel, miscellaneous .....	.....	5	.....
Nitrates, phosphates, and potash	6	4	3

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST COAST CENTRAL AMERICA TO WEST INDIES—Continued			
Nitrates, phosphates and potash—Continued			
Fishmeal	2	4	3
Nitrate of soda	4	.....	.....
Other agricultural commodities	59	73	36
Molasses	31	22	6
Sugar, raw	28	45	30
Other and unclassified .....	.....	6	.....
Petroleum and products	24	11	21
Diesel oil .....	.....	.....	6
Fuel oil, residual	24	11	12
Gasoline .....	.....	.....	1
Liquefied gas .....	.....	.....	2
Miscellaneous	17	8	13
Container cargo	17	3	4
All other and unclassified .....	.....	5	9
Total	247	210	228
WEST COAST CENTRAL AMERICA TO EUROPE:			
Canned and refrigerated foods	524	355	278
Canned foods, miscellaneous	1	1	.....
Refrigerated foods	523	354	278
Bananas	450	307	210
Fish	66	40	60
Fruit, excluding bananas	4	1	1
Meat .....	.....	.....	1
Other and unclassified	3	6	6
Chemicals and petroleum chemicals	2	.....	7
Chemicals, unclassified	2	.....	7
Grains .....	.....	.....	25
Wheat .....	.....	.....	25
Lumber and products	18	21	12
Boards and planks	4	7	12
Pulpwood	14	14	.....
Manufactures of iron and steel	107	174	1
Angles, shapes and sections .....	.....	30	.....
Plates, sheets and coils	107	110	.....
Wire, bars and rods .....	.....	34	.....
Tubes, pipes and fittings .....	.....	.....	1
Ores and metals	23	23	137
Ores	10	17	127
Copper	3	10	119
Lead	2	.....	.....
Zinc	5	7	8
Metals	13	6	10
Copper	12	4	10
Iron	1	.....	.....
Other and unclassified .....	.....	2	.....
Other agricultural commodities	264	392	507
Beans, edible .....	.....	1	.....
Cocoa and cacao beans .....	.....	.....	3
Coffee	119	84	90
Cotton, raw	12	24	25
Molasses	79	69	117
Oilseeds	1	.....	.....
Peas, dry .....	.....	34	30
Sugar	53	180	242

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
WEST COAST CENTRAL AMERICA TO EUROPE—			
Continued			
Petroleum and products .....	.....	.....	23
Gasoline .....	.....	.....	23
Miscellaneous	56	61	74
Clay, fire, and china	3	.....	.....
Groceries, miscellaneous	5	.....	1
Oil, fish	6	.....	8
Oil, vegetable .....	.....	2	3
Seeds, excluding oilseeds	2	.....	1
Container cargo	37	50	59
Paper and paper products .....	.....	2	.....
All other and unclassified	3	7	2
Total	<u>995</u>	<u>1,026</u>	<u>1,064</u>
WEST COAST CENTRAL AMERICA TO AFRICA:			
Canned and refrigerated foods	6	5	3
Refrigerated foods	6	5	3
Bananas .....	.....	3	.....
Fish	6	2	3
Grains	26	273	88
Wheat	26	273	88
Lumber and products	6	7	5
Boards and planks	6	5	5
Other and unclassified .....	.....	2	.....
Manufactures of iron and steel .....	.....	15	17
Wires, bars and rods .....	.....	15	17
Other agricultural commodities, miscellaneous	84	47	.....
Miscellaneous	1	1	1
All other and unclassified	1	1	1
Total	<u>124</u>	<u>348</u>	<u>114</u>
WEST COAST SOUTH AMERICA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	1,085	906	843
Canned foods, miscellaneous	7	25	27
Refrigerated foods	1,078	881	816
Bananas	580	475	399
Fish	23	32	37
Fruit, excluding bananas	419	339	340
Refrigerated, miscellaneous	56	35	40
Chemicals and petroleum chemicals	96	242	12
Chemicals, miscellaneous	94	232	12
Benzene	2	3	.....
Petroleum chemicals, miscellaneous .....	.....	7	.....
Coal and coke (excluding petroleum coke) .....	.....	3	.....
Coal .....	.....	3	.....
Grains, miscellaneous	1	2	.....
Lumber and products	59	64	58
Boards and planks	35	36	26
Plywood, veneers, composition board	12	11	11
Pulpwood	5	14	19
Other and unclassified	7	3	2
Machinery and equipment, miscellaneous	1	2	6
Manufactures of iron and steel, miscellaneous	28	15	49
Minerals, miscellaneous	810	375	346
Salt	810	375	326
Soda and sodium compounds .....	.....	.....	20

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST COAST SOUTH AMERICA TO EAST COAST UNITED STATES—Continued			
Nitrates, phosphates, and potash	286	304	183
Fishmeal	74	124	33
Nitrate of soda	190	180	142
Potash	6	.....	.....
Fertilizers, miscellaneous	16	.....	8
Ores and metals	428	473	781
Ores	247	222	610
Chrome .....	.....	1	.....
Copper	10	3	25
Iron	173	172	516
Lead .....	.....	3	2
Tin .....	.....	10	3
Zinc	9	3	38
Other and unclassified	55	30	26
Metals	181	251	171
Copper	158	189	152
Iron .....	.....	1	.....
Lead	2	5	1
Scrap .....	.....	1	.....
Zinc	21	20	17
Other and unclassified .....	.....	35	1
Other agricultural commodities	617	424	257
Beans, edible	1	.....	1
Cocoa and cacao beans	33	43	35
Coffee	106	77	75
Cotton, raw	2	3	3
Molasses	55	21	27
Skin and hides	18	.....	.....
Sugar	401	279	115
Wool, raw	1	1	1
Petroleum and products	4,593	6,077	4,047
Crude oil	2,213	3,444	1,636
Diesel oil	28	254	157
Fuel oil, residual	2,250	2,333	2,230
Gasoline	54	46	24
Other and unclassified	48	.....	.....
Miscellaneous	701	605	434
Bricks and tile	4	2	.....
Fibers, plant .....	.....	1	2
Groceries, miscellaneous	5	7	6
Liquors and wines	4	6	6
Marble and stone	1	3	3
Oil, fish	5	.....	.....
Oil, vegetable	18	18	12
Paper and paper products	4	7	4
Porcelainware .....	.....	1	.....
Seeds, excluding oilseeds .....	.....	.....	1
Slag, clinkers and dross	28	28	6
Textiles	5	7	8
Tobacco and products .....	.....	1	.....
Container cargo	598	486	348
All other and unclassified	29	38	38
Total	8,705	9,493	7,016
WEST COAST SOUTH AMERICA TO EAST COAST CANADA:			
Nitrates, phosphates, and potash .....	.....	6	11
Nitrate of soda .....	.....	6	11

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST COAST SOUTH AMERICA TO EAST COAST			
CANADA—Continued			
Ores and metals, miscellaneous	21	29	61
Petroleum and products	27	54	.....
Crude oil		54	.....
Fuel oil, residual	27	.....	.....
Miscellaneous	3	2	.....
All other and unclassified	3	2	.....
Total	52	91	72
WEST COAST SOUTH AMERICA TO EAST COAST			
CENTRAL AMERICA:			
Chemicals and petroleum chemicals	1	.....	5
Chemicals, unclassified	1	.....	5
Lumber and products, miscellaneous	1	.....	.....
Nitrates, phosphates and potash	3	3	.....
Ores and metals	30	60	31
Ores, miscellaneous	28	56	31
Metals, miscellaneous	2	4	.....
Other agricultural commodities	5	20	.....
Beans, edible		20	.....
Coffee	1	.....	.....
Sugar	4	.....	.....
Petroleum and products	903	437	322
Crude oil	842	437	322
Fuel oil, residual	56	.....	.....
Gasoline	5	.....	.....
Miscellaneous	64	35	23
Oil, fish	31	16	.....
Oil, vegetable	9	5	14
Paper and paper products	1	3	2
Container cargo	21	7	4
All other and unclassified	2	4	3
Total	1,008	555	381
WEST COAST SOUTH AMERICA TO EAST COAST			
SOUTH AMERICA:			
Canned and refrigerated foods	17	4	8
Canned foods, miscellaneous .....	.....	1	1
Refrigerated foods, miscellaneous	17	3	7
Chemicals and petroleum chemicals	6	9	11
Chemicals, unclassified	6	9	11
Grains	7	2	26
Rice .....	.....	.....	19
Soybeans	7	2	7
Lumber and products	36	29	77
Boards and planks	5	7	17
Plywood, veneers, composition board .....	.....	.....	1
Pulpwood	31	22	57
Other and unclassified .....	.....	.....	2
Machinery and equipment, miscellaneous .....	.....	.....	1
Manufactures of iron and steel, miscellaneous	1	19	.....
Minerals, miscellaneous	2	6	15
Borax	2	.....	2
Soda and sodium compounds .....	.....	6	13
Sulfur .....	.....	6	.....
Nitrates, phosphates, and potash	5	1	1
Ammonium compounds	2	.....	.....
Fishmeal	3	1	1
Ores and metals, miscellaneous	56	83	94

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
WEST COAST SOUTH AMERICA TO EAST COAST SOUTH AMERICA—Continued			
Other agricultural commodities	27	4	39
Beans, edible	3	3	31
Coffee			2
Peas, dry			1
Sugar	24		5
Other and unclassified		1	
Petroleum and products	10	121	107
Crude oil		48	96
Gasoline	10	73	11
Miscellaneous	59	67	70
Cement	1		
Liquors and wines			1
Marble and stone	1	1	1
Oil, fish	1		
Oil, vegetable	24	35	20
Paper and paper products	7	15	24
Textiles			3
Container cargo	15	4	9
All other and unclassified	10	12	12
Total	226	345	449
WEST COAST SOUTH AMERICA TO WEST INDIES:			
Canned and refrigerated foods	42	80	58
Canned foods, miscellaneous		2	
Refrigerated foods	42	78	58
Dairy products			5
Fish	35	69	48
Fruit, excluding bananas	5	7	4
Other and unclassified	2	2	1
Chemicals and petroleum chemicals, miscellaneous	3		
Grains		4	6
Wheat		4	
Soybeans			6
Lumber and products	75	49	66
Boards and planks	46	46	54
Plywood, veneers, composition board	3	3	12
Pulpwood	3		
Other and unclassified	23		
Manufactures of iron and steel, miscellaneous		2	1
Nitrates, phosphates, and potash	28	41	21
Fishmeal	28	41	21
Other agricultural commodities	14	34	59
Beans, edible	3	1	13
Molasses	5	29	46
Sugar	6	4	
Petroleum and products	3,797	1,576	3,705
Crude oil	3,316	1,365	3,283
Diesel oil			50
Fuel oil, residual	453	186	372
Gasoline	28	25	
Miscellaneous	27	33	13
Groceries, miscellaneous	1	3	2
Oil, vegetable		16	
Paper and paper products	2	2	3
Container cargo	15	10	3

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
WEST COAST SOUTH AMERICA TO WEST INDIES—			
Continued			
All other and unclassified	9	2	5
Total	<u>3,986</u>	<u>1,819</u>	<u>3,929</u>
WEST COAST SOUTH AMERICA TO EUROPE:			
Canned and refrigerated foods	1,541	1,296	1,221
Canned foods, miscellaneous	22	16	16
Refrigerated foods	<u>1,519</u>	<u>1,280</u>	<u>1,205</u>
Bananas	553	489	433
Fish	483	393	338
Fruit, excluding bananas	347	316	328
Meat .....	.....	.....	21
Other and unclassified	136	82	85
Chemicals and petroleum chemicals, miscellaneous	22	6	6
Coal and coke (excluding petroleum coke) .....	.....	.....	13
Coke .....	.....	.....	13
Grains, miscellaneous	1	12	1
Lumber and products	<u>557</u>	<u>383</u>	<u>330</u>
Boards and planks	238	189	149
Plywood, veneers, composition board	14	12	19
Pulpwood	190	152	93
Other and unclassified	115	30	69
Machinery and equipment, miscellaneous	1	2	.....
Manufactures of iron and steel, miscellaneous	4	.....	.....
Nitrates, phosphates, and potash	<u>1,303</u>	<u>1,313</u>	<u>1,112</u>
Fishmeal	1,128	1,174	958
Nitrate of soda	160	135	154
Potash	1	4	.....
Fertilizers, unclassified	14	.....	.....
Ores and metals	<u>1,845</u>	<u>1,615</u>	<u>1,722</u>
Ores	<u>1,014</u>	<u>890</u>	<u>1,064</u>
Copper	263	280	358
Iron	107	54	107
Lead	59	89	70
Manganese .....	.....	14	.....
Tin	10	15	5
Zinc	545	380	471
Other and unclassified	30	58	53
Metals	<u>831</u>	<u>725</u>	<u>658</u>
Aluminum .....	.....	.....	10
Copper	662	613	523
Iron	12	.....	4
Lead	30	15	18
Scrap	27	.....	.....
Tin, including tinplate	1	1	1
Zinc	96	87	78
Other and unclassified	3	9	24
Other agricultural commodities	<u>184</u>	<u>130</u>	<u>167</u>
Beans, edible	1	4	8
Cocoa and cacao beans	2	6	5
Coffee	156	101	105
Cotton, raw	11	15	5
Molasses .....	.....	.....	5
Oilseeds	10	.....	13
Skins and hides	2	1	.....
Sugar .....	.....	.....	24
Wool, raw	2	3	2

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
WEST COAST SOUTH AMERICA TO EUROPE—			
Continued			
Petroleum and products	3	.....	.....
Diesel oil	3	.....	.....
Miscellaneous	819	927	660
Bricks and tile	1	2	.....
Fibers, plant	8	1	.....
Groceries, miscellaneous	1	34	12
Liquors and wines	1	1	.....
Marble and stone	1	.....	.....
Oil, fish	113	285	68
Paper and paper products	33	60	24
Slag, clinkers and dross .....	.....	.....	4
Textiles	5	5	1
Container cargo	599	478	489
All other and unclassified	57	62	62
Total	<u>6,280</u>	<u>5,684</u>	<u>5,232</u>
WEST COAST SOUTH AMERICA TO AFRICA:			
Canned and refrigerated foods	22	19	19
Refrigerated foods, miscellaneous	22	19	19
Nitrates, phosphates, and potash	4	20	25
Ores and metals	51	20	34
Ores, miscellaneous	45	20	34
Metals, miscellaneous	6	.....	.....
Other agricultural commodities	10	58	5
Coffee	10	3	5
Sugar .....	.....	55	.....
Total	<u>88</u>	<u>117</u>	<u>83</u>
HAWAII TO EAST COAST UNITED STATES:			
Other agricultural commodities	209	239	256
Sugar	209	239	256
Total	<u>209</u>	<u>239</u>	<u>256</u>
OCEANIA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	451	388	413
Refrigerated foods	451	388	413
Fruit, excluding bananas	47	27	27
Meat	39	42	78
Other and unclassified	365	319	308
Chemicals and petroleum chemicals, miscellaneous	20	119	180
Coal and coke (excluding petroleum coke)	170	526	484
Coal	3	.....	55
Coke	167	526	429
Manufactures of iron and steel, miscellaneous	62	62	18
Minerals, miscellaneous .....	.....	.....	22
Sulfur .....	.....	.....	22
Nitrates, phosphates, and potash .....	.....	18	20
Fertilizers, unclassified .....	.....	18	20
Ores and metals	2,251	1,946	1,518
Ores	2,227	1,941	1,510
Alumina/bauxite	1,639	1,299	846
Chrome	2	3	6
Copper .....	.....	10	.....
Iron .....	.....	.....	60
Manganese	103	125	85
Other and unclassified	483	504	513

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
OCEANIA TO EAST COAST UNITED STATES—			
Continued			
Ores and metals—Continued			
Metals.....	24	5	8
Lead.....	7	5	5
Zinc.....	14		
Other and unclassified.....	3		3
Other agricultural commodities.....	418	481	167
Cocoa and cacao beans.....	3		
Molasses.....	266	304	130
Sugar.....	149	177	34
Wool, raw.....			3
Petroleum and products.....	160	107	247
Crude oil.....			38
Fuel oil, residual.....			27
Gasoline.....	16	24	
Liquefied gas.....	128	63	9
Lubricating oil.....	16	20	56
Petroleum coke.....			117
Miscellaneous.....	311	275	327
Clay, fire and china.....	56		
Groceries, miscellaneous.....			3
Liquors and wines.....			1
Oil, coconut.....			6
Container cargo.....	244	265	292
All other and unclassified.....	11	10	25
Total.....	<u>3,844</u>	<u>3,922</u>	<u>3,396</u>
OCEANIA TO EAST COAST CANADA:			
Canned and refrigerated foods.....	54	51	68
Refrigerated foods.....	54	51	68
Meat.....			1
Other and unclassified.....	54	51	67
Ores and metals.....	155	107	21
Ores.....	154	107	21
Alumina/bauxite.....	69	59	14
Chrome.....	3	2	4
Manganese.....	65	20	
Other and unclassified.....	17	26	3
Other agricultural commodities.....	320	420	285
Sugar.....	320	420	285
Miscellaneous.....	45	54	70
Groceries, miscellaneous.....			1
Container cargo.....	45	53	67
All other and unclassified.....		1	2
Total.....	<u>574</u>	<u>632</u>	<u>444</u>
OCEANIA TO EAST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous.....	68	32	33
Ores and metals.....	221	134	86
Manganese ore.....	131	103	84
Ores, miscellaneous.....	90	31	2
Other agricultural commodities.....	17		16
Oilseeds.....	17		16
Petroleum and products.....	1		8
Lubricating oil.....	1		8
Miscellaneous.....	4		1
Container cargo.....	3		

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
OCEANIA TO EAST COAST CENTRAL AMERICA—			
Continued			
All other and unclassified	1	.....	1
Total	<u>311</u>	<u>166</u>	<u>144</u>
OCEANIA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	13	39	33
Canned foods, miscellaneous	7	33	30
Refrigerated foods, miscellaneous	6	6	3
Grains, miscellaneous	33	12	.....
Ores and metals	815	428	177
Ores	815	428	177
Alumina/bauxite	813	428	177
Other and unclassified	2	.....	.....
Other agricultural commodities	53	39	.....
Sugar	53	28	.....
Oilseeds .....	.....	11	.....
Miscellaneous .....	.....	.....	9
Container cargo .....	.....	.....	1
All other and unclassified .....	.....	.....	8
Total	<u>913</u>	<u>518</u>	<u>219</u>
OCEANIA TO WEST INDIES:			
Canned and refrigerated foods	36	47	53
Canned foods, miscellaneous	7	12	8
Refrigerated foods	29	35	45
Dairy products	1	3	7
Fish	12	13	20
Other and unclassified	16	19	18
Petroleum and products .....	.....	.....	22
Gasoline .....	.....	.....	22
Miscellaneous	10	14	8
Oil, vegetable .....	.....	3	.....
Container cargo	10	11	8
Total	<u>47</u>	<u>61</u>	<u>83</u>
OCEANIA TO EUROPE:			
Canned and refrigerated foods	316	258	295
Refrigerated foods	316	258	295
Bananas	3	.....	.....
Fruit, excluding bananas	290	234	268
Meat	3	7	1
Other and unclassified	20	17	26
Chemicals and petroleum chemicals, miscellaneous	61	54	.....
Coal and coke (excluding petroleum coke)	38	18	.....
Coal	38	18	.....
Grains	32	.....	30
Barley	32	.....	30
Lumber and products, miscellaneous	9	5	.....
Ores and metals	57	63	42
Ores	53	63	9
Alumina/bauxite .....	.....	36	.....
Lead	27	.....	.....
Zinc	5	1	.....
Other and unclassified	21	26	9
Metals	4	.....	33
Copper	4	.....	.....
Other and unclassified .....	.....	.....	33

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
OCEANIA TO EUROPE—Continued			
Other agricultural commodities	250	181	218
Beans, edible .....	.....	.....	1
Cocoa and cacao beans	1	.....	.....
Coffee	1	.....	.....
Copra and coconuts	7	.....	6
Molasses	85	35	.....
Peas, dry .....	.....	.....	1
Sugar	153	146	207
Wool, raw	3	.....	3
Miscellaneous	179	200	259
Clay, fire and china	6	.....	.....
Groceries, miscellaneous .....	.....	.....	5
Liquors and wines .....	.....	.....	2
Oil, coconut .....	.....	.....	2
Oil, vegetable .....	.....	.....	2
Paper and paper products	5	1	.....
Rubber, manufactured .....	.....	.....	1
Seeds, excluding oilseeds .....	.....	.....	1
Tallow	6	3	.....
Container cargo	160	196	241
All other and unclassified	2	.....	5
Total	940	779	844
ASIA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	123	134	129
Refrigerated foods	123	134	129
Other and unclassified	123	134	129
Chemicals and petroleum chemicals	147	262	286
Chemicals, unclassified	118	223	220
Benzene	16	29	58
Toulene .....	.....	.....	4
Petroleum chemicals, miscellaneous	13	10	4
Coal and coke (excluding petroleum coke)	580	1,323	997
Coke	580	1,323	997
Grains .....	.....	.....	6
Rice .....	.....	.....	6
Lumber and products	575	602	701
Boards and planks	32	23	73
Plywood, veneers, composition board	524	526	584
Other and unclassified	19	53	44
Machinery and equipment	1,378	1,773	1,901
Agricultural machinery and implements	9	18	22
Automobiles, trucks, accessories and parts	1,252	1,605	1,725
Construction machinery and equipment	86	100	123
Electrical machinery and apparatus	2	9	2
Other and unclassified	29	41	29
Manufactures of iron and steel	2,522	3,044	3,820
Angles, shapes, and sections	63	206	285
Nails, tacks, and spikes	48	60	94
Plates, sheets, and coils	1,212	1,184	1,305
Tubes, pipes and fittings	285	326	406
Wire, bars, and rods	121	179	185
Other and unclassified	793	1,089	1,545
Nitrates, phosphates, and potash .....	.....	90	21
Fertilizers, unclassified .....	.....	90	21
Ores and metals	1,650	1,434	1,336

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
ASIA TO EAST COAST UNITED STATES—Continued			
Ores and metals—Continued			
Ores	1,621	1,407	1,293
Alumina/bauxite	454	360	278
Chrome	28	49	13
Iron .....	.....	21	82
Manganese	12	20	18
Other and unclassified	1,127	957	902
Metals	29	27	43
Aluminum	11	6	21
Copper	8	2	11
Iron .....	.....	11	.....
Tin, including tinplate	3	2	2
Zinc .....	.....	1	4
Other and unclassified	7	5	5
Other agricultural commodities	247	263	254
Beans, edible	1	1	.....
Cocoa and cacao beans	1	1	1
Coffee	1	2	5
Oilseeds .....	.....	.....	3
Rubber, raw	46	131	107
Sugar	198	128	138
Petroleum and products	161	248	183
Fuel oil, residual .....	.....	49	.....
Gasoline	55	77	.....
Liquefied gas .....	.....	23	4
Lubricating oil	22	11	22
Petroleum coke	84	88	146
Other and unclassified .....	.....	.....	11
Miscellaneous	5,130	5,048	5,118
Bricks and tile	3	2	2
Clay, fire and china .....	.....	6	.....
Flour, wheat .....	.....	.....	6
Groceries, miscellaneous .....	.....	5	2
Oil, coconut	60	41	29
Oil, vegetable	92	43	41
Porcelainware .....	.....	.....	6
Rubber, manufactured	6	.....	5
Wax paraffin	2	10	64
Container cargo	4,871	4,861	4,837
All other and unclassified	96	80	126
Total	<u>12,515</u>	<u>14,221</u>	<u>14,752</u>
ASIA TO EAST COAST CANADA:			
Canned and refrigerated foods, miscellaneous	4	9	3
Chemicals and petroleum chemicals, miscellaneous	1	10	.....
Lumber and products .....	.....	.....	2
Other and unclassified .....	.....	.....	2
Machinery and equipment	5	3	9
Agricultural machinery and implements .....	.....	.....	1
Automobiles, trucks, accessories and parts .....	.....	2	6
Construction machinery and equipment	3	1	2
Electrical machinery and apparatus	1	.....	.....
Other and unclassified	1	.....	.....
Manufactures of iron and steel .....	.....	2	24
Angles, shapes, and sections .....	.....	1	2
Nails, tacks, and spikes .....	.....	.....	10
Plates, sheets, and coils .....	.....	1	.....
Tubes, pipes, and fittings .....	.....	.....	1

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
ASIA TO EAST COAST CANADA—Continued			
Manufactures of iron and steel—Continued			
Wires, bars and rods			5
Other and unclassified			6
Ores and metals	209	187	146
Ores	209	187	135
Alumina/bauxite	45	63	65
Chrome	13	11	2
Copper	10		10
Manganese			9
Other and unclassified	141	113	49
Metals			11
Copper			11
Miscellaneous	373	360	367
Oil, vegetable	1	3	
Container cargo	369	353	361
All other and unclassified	3	4	6
Total	593	571	551
ASIA TO EAST COAST CENTRAL AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	4	3	11
Coal and coke (excluding petroleum coke)	15		
Coal	15		
Grains	15		
Rice	15		
Machinery and equipment, miscellaneous	1		
Manufactures of iron and steel	1		1
Plates, sheets and coils	1		1
Other agricultural commodities		3	1
Rubber, raw		3	1
Miscellaneous	40	21	10
Oil, coconut	9		
Oil vegetable	22	12	
Wax, paraffin	5	2	1
Container cargo	3	6	4
All other and unclassified	1	1	5
Total	74	28	24
ASIA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	1	1	2
Refrigerated foods	1	1	2
Fish		1	1
Other and unclassified	1		1
Chemicals and petroleum chemicals, miscellaneous	2	9	21
Coal and coke (excluding petroleum coke)		21	42
Coke		21	42
Grains			17
Rice			17
Machinery and equipment	17	28	43
Agricultural machinery and implements	1	1	1
Automobiles, trucks, accessories and parts	8	9	22
Construction machinery and equipment	2	2	4
Electrical machinery and apparatus	3	6	8
Motorcycles, bicycles and parts	2	5	5
Other and unclassified	1	5	3
Manufactures of iron and steel	49	63	64
Angles, shapes and sections	1	9	1

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
ASIA TO EAST COAST SOUTH AMERICA—			
Continued			
Manufactures of iron and steel—Continued			
Plates, sheets, and coils	12	15	32
Tubes, pipes, and fittings	24	23	11
Wires, bars, and rods	2	10	15
Other and unclassified	10	6	5
Nitrates, phosphates, and potash	1	3	17
Fertilizers, unclassified	1	3	17
Ores and metals	48	16	33
Ores	45	12	26
Alumina/bauxite	20	5	2
Manganese	3	.....	.....
Other and unclassified	22	7	24
Metals	3	4	7
Aluminum .....	.....	.....	1
Tin, including tinplate	1	.....	2
Other and unclassified	2	4	4
Other agricultural commodities .....	.....	10	16
Cotton .....	.....	6	9
Oilseeds .....	.....	1	.....
Rubber, raw .....	.....	3	7
Petroleum and products .....	.....	.....	22
Petroleum coke .....	.....	.....	22
Miscellaneous	104	112	127
Carbon black	1	1	1
Fibers, plant .....	.....	.....	1
Flour, wheat .....	.....	1	.....
Oil, vegetable	3	.....	.....
Resin .....	.....	1	2
Rubber, manufactured	2	.....	1
Textiles	1	.....	1
Wax, paraffin .....	.....	.....	1
Container cargo	74	64	79
All other and unclassified	23	45	41
Total	<u>221</u>	<u>263</u>	<u>404</u>
ASIA TO CRISTOBAL, R.P.			
Lumber and products, miscellaneous	1	1	.....
Machinery and equipment .....	.....	.....	2
Electrical machinery and apparatus .....	.....	.....	2
Manufactures of iron and steel, miscellaneous	13	6	7
Ores and metals	1	.....	.....
Metals miscellaneous	1	.....	.....
Miscellaneous	300	254	162
Groceries, miscellaneous .....	.....	2	.....
Textiles	1	.....	1
Container cargo	286	246	147
All other and unclassified	13	6	14
Total	<u>317</u>	<u>262</u>	<u>171</u>
ASIA TO WEST INDIES:			
Canned and refrigerated foods	47	51	28
Canned foods, miscellaneous	16	12	12
Refrigerated foods	31	39	16
Fish	25	27	13
Meat	3	11	2
Other and unclassified	3	1	1

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1990	1989	1988
ASIA TO WEST INDIES—Continued			
Chemicals and petroleum chemicals, miscellaneous	18	10	6
Coal and coke (excluding petroleum coke)	11	7	10
Coal	11	7	5
Coke . . . . .	. . . . .	. . . . .	5
Grains	337	222	163
Corn	3	9	1
Rice	230	152	133
Soybeans	90	61	29
Other and unclassified	14	. . . . .	. . . . .
Lumber and products	225	239	282
Boards and planks	213	218	267
Plywood, veneers, composition board	4	4	10
Pulpwood	3	11	5
Other and unclassified	5	6	. . . . .
Machinery and equipment	119	107	142
Agricultural machinery and implements	2	1	3
Automobiles, trucks, accessories and parts	105	97	131
Construction machinery and equipment	5	4	2
Electrical machinery and apparatus	4	5	4
Motorcycles, bicycles and parts . . . . .	. . . . .	. . . . .	2
Other and unclassified	3	. . . . .	. . . . .
Manufactures of iron and steel	62	80	84
Angles, shapes and sections	1	3	7
Nails, tacks and spikes	2	4	2
Plates, sheets, and coils	27	37	41
Tubes, pipes, and fittings	18	10	12
Wires, bars, and rods	14	21	11
Other and unclassified . . . . .	. . . . .	5	11
Minerals, miscellaneous	2	1	. . . . .
Nitrates, phosphates and potash	5	6	13
Ammonium compounds	2	. . . . .	. . . . .
Fertilizers, unclassified	3	6	11
Phosphates . . . . .	. . . . .	. . . . .	2
Ores and metals	13	8	8
Ores, miscellaneous	8	4	3
Metals, miscellaneous	5	4	5
Other agricultural commodities	89	63	28
Beans, edible	36	26	26
Cotton, raw	1	1	1
Oilseeds	51	36	. . . . .
Rubber, raw	1	. . . . .	1
Petroleum and products . . . . .	. . . . .	98	62
Asphalt . . . . .	. . . . .	1	. . . . .
Diesel oil . . . . .	. . . . .	41	3
Gasoline . . . . .	. . . . .	56	59
Miscellaneous	358	414	446
Bricks and tile	4	1	1
Carbon black . . . . .	. . . . .	1	. . . . .
Cement	3	4	1
Clay, fire and china	6	7	. . . . .
Fibers, plant	4	. . . . .	2
Flour, wheat . . . . .	. . . . .	5	. . . . .
Glass and glassware	5	6	5
Groceries, miscellaneous	1	1	5
Oil, coconut . . . . .	. . . . .	5	. . . . .
Oil, vegetable	9	12	14
Paper and paper products	17	21	22
Porcelainware	1	. . . . .	1

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1990	1989	1988
ASIA TO WEST INDIES—Continued			
Miscellaneous—Continued			
Resin		1	
Rubber, manufactured	8	7	6
Textiles	2	4	8
Wax, paraffin	1	1	2
Container cargo	212	243	291
All other and unclassified	85	95	88
Total	<u>1,288</u>	<u>1,306</u>	<u>1,272</u>
ASIA TO EUROPE:			
Canned and refrigerated foods, miscellaneous	5	10	5
Chemicals and petroleum chemicals, miscellaneous	72	50	39
Coal and coke (excluding petroleum coke)	<u>52</u>	<u>14</u>	<u>55</u>
Coal	52	14	
Coke			55
Lumber and products			<u>2</u>
Boards and planks			2
Machinery and equipment	<u>27</u>	<u>1</u>	<u>8</u>
Agricultural machinery and implements	3		
Automobiles, trucks, accessories and parts	14	1	7
Construction machinery and equipment	7		1
Other and unclassified	3		
Manufactures of iron and steel			<u>9</u>
Other and unclassified			9
Ores and metals	<u>18</u>		
Ores, miscellaneous	18		
Petroleum and products, miscellaneous			6
Miscellaneous	<u>170</u>	<u>162</u>	<u>153</u>
Oil, coconut	1	1	11
Oil, fish	54	80	64
Oil, vegetable	1		
Seeds, excluding oilseeds	8		
Wax, paraffin			7
Container cargo	97	68	56
All other and unclassified	9	13	15
Total	<u>343</u>	<u>237</u>	<u>277</u>

Table 12.—Principal Canal Commodities by Direction—Fiscal Year 1990

Commodity	[Long tons]		
	Atlantic to Pacific	Pacific to Atlantic	Total
Ammonium compounds	479,729	27,952	507,681
Asbestos	7,379	3,350	10,729
Asphalt	24,502	333	24,835
Automobiles, trucks, and accessories	309,942	1,383,690	1,693,632
Bananas	6,400	1,620,747	1,627,147
Barley	9,651	292,499	302,150
Beans, edible	77,790	56,289	134,079
Benzene	129,233	23,229	152,462
Borax	2,847	424,371	427,218
Bricks and tile	10,685	11,251	21,936
Canned food products	29,824	128,168	157,992
Carbon black	28,248	617	28,865
Caustic soda	917,887	28	917,915
Cement	542,894	4,807	547,701
Chemicals, petroleum miscellaneous	1,286,246	91,133	1,377,379
Chemicals, unclassified	3,275,477	848,007	4,123,484
Clay, fire and china	623,298	86,986	710,284
Coal and coke (excluding petroleum coke)	5,064,949	3,050,763	8,115,712
Cocoa and cacao beans	4,323	39,895	44,218
Coffee	7,116	421,499	428,615
Coke, petroleum	783,919	2,447,018	3,230,937
Copra and coconuts	1,558	7,145	8,703
Corn	14,011,773	3,200	14,014,973
Cotton, raw	51,224	63,941	115,165
Fertilizers, miscellaneous	2,825,763	66,798	2,892,561
Fibers, plant	1,594	11,557	13,151
Fishmeal	632	1,280,954	1,281,586
Flour, wheat	148,816	1,609	150,425
Gasoline	1,937,782	309,746	2,247,528
Glass and glassware	10,775	4,838	15,613
Grains, various	237,054	44,502	281,556
Groceries, miscellaneous	53,905	22,436	76,341
Infusorial earth	179	35	214
Jet fuel	911,584	70,418	982,002
Kerosene	101,273	474	101,747
Liquefied gas	999,129	147,359	1,146,488
Liquors	6,955	13,677	20,632
Lumber and products (excluding pulpwood)	1,628,230	4,798,193	6,426,423
Machinery, agricultural	49,563	16,947	66,510
Machinery, construction	85,606	105,828	191,434
Machinery, electrical	33,296	8,918	42,214
Machinery, various	35,952	42,378	78,330
Manufactures of iron and steel	4,248,309	2,950,495	7,198,804
Metal, aluminum	409,147	12,992	422,139
Metal, copper	7,540	891,769	899,309
Metal, iron	291,086	13,781	304,867
Metal, lead	15,260	80,319	95,579
Metal, scrap	2,185,644	27,649	2,213,293
Metal, zinc	6,740	219,642	226,382
Metals, various (including tinplate)	58,630	29,271	87,901
Molasses	12,557	714,128	726,685
Nitrate of soda	7,877	383,254	391,131
Oats	2,165	508	2,673
Oil, coconut	6,386	70,157	76,543
Oil, crude	2,687,278	6,575,085	9,262,363
Oil, diesel	1,429,758	97,897	1,527,655
Oil, fish	91	213,316	213,407
Oil, lubricating	611,804	170,681	782,485
Oil, residual fuel	1,890,923	3,620,000	5,510,923
Oil, vegetable	175,703	231,689	407,392
Oilseeds	121,640	87,663	209,303
Ore, alumina/bauxite	229,315	3,039,990	3,269,305
Ore, copper	67,140	470,832	537,972

**Table 12.—Principal Canal Commodities by Direction—Fiscal Year 1990—
Continued**

[Long tons]

<i>Commodity</i>	<i>Atlantic to Pacific</i>	<i>Pacific to Atlantic</i>	<i>Total</i>
Ore, iron	182,495	413,177	595,672
Ore, lead	7,671	223,550	231,221
Ore, manganese	86,194	313,253	399,447
Ore, zinc	29,897	762,986	792,883
Ores, various	195,609	2,186,377	2,381,986
Paper and paper products	943,503	447,591	1,391,094
Peas, dry	11,709	10,840	22,549
Petroleum products, various	331,310	82,280	413,590
Phosphates	7,956,675	268,242	8,224,917
Potash	442,376	52,097	494,473
Pulpwood	979,959	2,063,302	3,043,261
Refrigerated food products (excluding bananas)	664,194	3,046,847	3,711,041
Resin	75,204	657	75,861
Rice	223,850	432,180	656,030
Rubber, manufactured	21,068	16,414	37,482
Rubber, raw	3,919	47,166	51,085
Salt	32,876	1,373,707	1,406,583
Seeds, excluding oilseeds	3,595	13,068	16,663
Slag, clinkers, and dross	145,511	27,767	173,278
Soda and sodium compounds	95,853	221,848	317,701
Sorghum	2,028,686	8,634	2,037,320
Soybeans	6,059,147	97,181	6,156,328
Sugar	1,507,876	2,152,832	3,660,708
Sulfur	64,980	2,710,126	2,775,106
Tallow	74,807	35,870	110,677
Textiles	7,377	15,048	22,425
Tobacco and manufactures	154	780	934
Toluene	161,132	15	161,147
Wax, paraffin	14,879	12,770	27,649
Wheat	5,425,318	1,362,834	6,788,152
Wool, raw	466	5,530	5,996
All other	11,967,608	9,817,434	21,785,042
Total	<u>90,965,873</u>	<u>66,107,106</u>	<u>157,072,979</u>

Other Statistics

Table 13.—Water Supply and Usage

	<i>Fiscal year</i>		<i>Percent of usage</i>	
	<i>1990</i>	<i>1989</i>	<i>1990</i>	<i>1989</i>
	<i>(Acre-feet)</i>			
MADDEN AND GATUN LAKE WATER SUPPLY:				
Total runoff, Madden Lake Basin	1,947,819	2,024,984		
Evaporation from Madden Lake	—39,903	—44,733		
Available for Madden Lake usage	1,908,016	1,980,251		
Municipal water use Madden Lake	—120,081	—111,036		
Available for downstream usage	1,787,935	1,869,215		
Total runoff, Gatun Lake (area below Madden) ...	2,441,379	1,904,667		
Subtotal	4,229,314	3,773,882		
Evaporation from Gatun Lake	—436,716	—454,435		
Available for Gatun watershed usage	3,792,598	3,319,447		
MADDEN LAKE WATER USAGE:				
Hydroelectric power	1,667,241	1,843,595	89	89
Leakage	14,479	14,479	1	1
Spillway discharge	73,531	92,837	4	5
Municipal	120,081	111,036	6	5
Total Madden Lake usage	1,875,332	2,061,947	100	100
GATUN LAKE WATER USAGE:				
Hydroelectric power	1,389,991	983,999	38	28
Lockages, Gatun and Pedro Miguel	1,970,294	2,005,739	54	56
Municipal and other usages	109,383	104,734	3	3
Spillway discharge	204,913	455,762	5	13
Total Gatun Lake usage	<u>3,674,581</u>	<u>3,550,234</u>	<u>100</u>	<u>100</u>

Table 14.—Dredging Operations—Fiscal Year 1990

	<i>(Cubic yards)</i>		
	<i>Earth</i>	<i>Rock</i>	<i>Total</i>
Pacific District (Maintenance)	830,000	.....	830,000
Pacific Entrance Widening	3,200,000	440,000	3,640,000
Grand Total	<u>4,030,000</u>	<u>440,000</u>	<u>4,470,000</u>

Table 15.—Electrical Power Generated

(Gigawatt hours) ¹

	Fiscal year	
	1990	1989
Generation:		
Gatun hydro station	87	62
Madden hydro station	197	187
Thermal generating stations	267	258
Gross generated by Panama Canal Commission	551	507
Less station service usage	(11)	(10)
Net total generated by Panama Canal Commission	540	497
Power Purchases:		
Through interconnect from Panama	10	17
Net Energy received for Wheeling	3	6
Power Sales:		
Through interconnect to Panama	(22)	(0.3)
Net power generated and purchased for Canal area only	531	520
Other power generated by military for own use	1	4
Total Canal area requirements	532	524
Power distributed to Comission's customers	497	487
Transmission and Distribution losses	35	37
Peak load (thousands of kilowatts)	84.6	83.6
Date of peak load	June 19	March 6
Canal area load factor ²	72%	71%

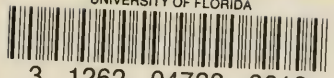
¹ One gigawatt hour equal to 1 million kilowatt hours.² Total Canal area requirements divided by number of hours per year times peak load.

Table 16.—Fire Division Statistics

	Fiscal Year 1990		Fiscal Year 1989	
	Num-ber of fires	Property loss	Num-ber of fires	Property loss
Panama Canal Commission	47	\$8,575	66	\$44,005
Armed Forces ¹	229	568,795	247	56,126
Private (including ships) ²	93	469,984	94	442,609
Republic of Panama ³	95	148	129	16,793
Total	464	1,047,502	536	\$559,532
			FY 1990	FY 1989
Calls for Emergency Aid ^{4 5}			5,470	5,937
Total number of calls (all types) responded to ⁵			5,934	6,473

¹ FY 1990 amount includes \$450,000.000 fire loss at Bldg. 220, Fort Clayton.² FY 1990 figure includes \$220,000.00 fire loss at Bldg. 0603, Ancon, owned by Church of God.³ Responses made to areas transferred to the Republic of Panama but responded to by Commission forces, such as grass fires, burning railroad ties, etc. The figure for FY 89 includes loss of \$15,000.00 due to fire on GOP dump truck.⁴ Includes responses to all types of emergencies (ambulances and fire apparatuses).⁵ FY 1989 figure is a correction to that reported in last year's annual report.

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