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ANNUAL REPORT  
OF THE  
GOVERNOR OF  
THE PANAMA CANAL  
FOR THE  
FISCAL YEAR  
ENDED JUNE 30  
1923



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1923





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## APPENDIXES NOT PRINTED.

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### REPORTS OF HEADS OF DEPARTMENTS AND DIVISIONS.

Reports for the fiscal year 1923 have been made as follows and may be consulted at the Washington office of The Panama Canal or at the office of the Governor, Balboa Heights, Canal Zone:

Engineer of maintenance:

Assistant engineer of maintenance, report of.

Pacific locks, report of superintendent.

Atlantic locks, report of superintendent.

Electrical division, report of electrical engineer.

Municipal engineering division, report of municipal engineer.

Dredging division, report of superintendent.

Office engineer.

Meteorology and hydrography, report of chief hydrographer.

Surveys, report of assistant engineer.

Gatum dam and back fills, report of general foreman.

Marine division, report of superintendent.

Mechanical division, report of superintendent.

Supply department, report of chief quartermaster.

Executive department, report of executive secretary:

Division of civil affairs, report of chief of division.

Police and fire division, report of chief of division.

Division of schools, report of superintendent of schools.

Bureau of clubs and playgrounds, report of general secretary.

District attorney, report of.

Accounting department, report of the auditor.

Health department, report of chief health officer.

Counsel, Panama Railroad Co., and land agent, The Panama Canal and Panama Railroad Co., report of.

Purchasing department, report of the general purchasing officer and chief of Washington office.



ANNUAL REPORT  
OF THE  
GOVERNOR OF THE PANAMA CANAL.

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THE PANAMA CANAL,  
OFFICE OF THE GOVERNOR,

*Balboa Heights, Canal Zone, August 20, 1923.*

The Honorable the SECRETARY OF WAR,  
*Washington.*

SIR: I submit herewith a report covering the operation of The Panama Canal during the fiscal year ended June 30, 1923.

Respectfully,

JAY J. MORROW,  
*Governor, The Panama Canal.*

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INTRODUCTION.

NET REVENUE OF THE CANAL AND ITS AUXILIARIES.

During the fiscal year 1923 The Panama Canal began to yield a net revenue commensurate with its capital cost. The net income from tolls and other miscellaneous receipts grouped under the head of "transit revenue" was \$10,001,066.50, as compared with \$3,466,574.69 in 1922. The net profits on auxiliary business operations conducted directly by The Panama Canal, of which the most important are the mechanical shops, material storehouses and fuel oil plants, totaled \$1,140,642.50, as against \$323,259.16 in 1922, while those conducted by the Panama Railroad Co., exclusive of the Panama Railroad Steamship Line but including commissaries, docks, coaling plants, and cattle industry, showed a profit of \$922,171.74, as compared with a loss in 1922 of \$710,301.94. The total net revenue of the year from all sources, exclusive of the Panama Railroad Steamship Line, was \$12,063,880.74.



In tabulated form the financial results of the operation of the canal and its auxiliaries on the Isthmus were:

	1923	1922
Net transit revenue.....	\$10,001,066.50	\$3,466,574.69
Net revenue on Panama Canal business operations.....	1,140,642.50	323,259.16
Total net revenue, Panama Canal.....	11,141,709.00	3,789,833.85
Net revenue on Panama R. R. business operations <sup>1</sup> .....	922,171.74	2710,301.94
Combined net revenue.....	12,063,880.74	3,079,531.91

<sup>1</sup> Exclusive of steamship line.

<sup>2</sup> Loss.

#### SERVICE RENDERED BY THE CANAL TO SHIPPING.

In terms of service to shipping the main items in the record for the fiscal year 1923, as compared with 1922, were as follows:

	1923	1922
Transits of the canal by ships paying tolls.....	3,967	2,736
Transits by public vessels of the United States, free.....	388	276
Calls at canal ports by ships not transiting the canal.....	838	747
Cargo handled at ports (tons).....	837,271	830,134
Coal sales and issues (tons).....	224,464	251,616
Coal, number of ships served other than Panama Canal.....	773	843
Fuel oil pumped (barrels).....	10,429,517	6,069,993
Fuel oil, number of ships served other than Panama Canal.....	1,487	1,422
Ships repaired other than Panama Canal equipment.....	692	738
Ships dry docked other than Panama Canal equipment.....	74	108
Provisions sold to ships (commissary sales).....	\$681,635.47	\$640,692.66
Chandlery sold to ships (storehouse sales).....	\$99,582.27	\$116,740.85



## SECTION I.

### CANAL OPERATION AND TRADE VIA PANAMA.

#### TRAFFIC IN 1923.

In my annual report for the fiscal year 1922 I stated that although there had been no increase of traffic through The Panama Canal during the period under review, as compared with the preceding year, a steady growth to double, triple, and quadruple the current tonnage might be confidently predicted. The statistics for the fiscal year 1923 justify this prediction.

The number of commercial transits increased from 2,736 to 3,967; net tonnage from 11,417,459 to 18,605,786; tolls from \$11,197,832.41 to \$17,508,199.57; and cargo tonnage from 10,884,910 to 19,567,875. The figures for June, 1923, are approximately double those for June, 1922. The growth month by month is shown in the following table:

Month.	Number of ships.	United States equivalent net tonnage.	Panama Canal net tonnage.	Tolls.	Cargo.
1922.					<i>Tons.</i>
July.....	251	897,770	1,127,871	\$1,094,127.42	1,211,100
August.....	257	857,925	1,084,133	1,055,336.75	1,165,950
September.....	240	843,113	1,070,410	1,020,064.55	1,138,188
October.....	294	1,049,258	1,310,392	1,255,508.00	1,445,863
November.....	294	1,062,725	1,337,280	1,264,436.54	1,426,860
December.....	304	1,104,225	1,375,263	1,312,570.12	1,535,102
1923.					
January.....	352	1,281,406	1,610,692	1,505,285.55	1,591,932
February.....	326	1,237,806	1,529,547	1,423,954.21	1,563,278
March.....	409	1,608,358	1,988,192	1,827,718.44	1,940,928
April.....	404	1,634,457	2,007,690	1,878,938.15	2,187,145
May.....	419	1,725,399	2,128,414	1,972,216.04	2,265,083
June.....	417	1,664,051	2,035,902	1,898,043.80	2,096,446
Fiscal year 1923.....	3,967	14,966,493	18,605,786	17,508,199.57	19,567,875
Fiscal year 1922.....	2,736	9,201,613	11,417,459	11,197,832.41	10,884,910

The Panama Canal is rapidly overhauling the Suez Canal, which during the calendar year 1922 had 4,345 transits, aggregating 20,743,-245 net tons, with 21,360,000 tons of cargo.

The phenomenal growth of the past year was not anticipated and is in a sense abnormal. It is due primarily to the development of oil fields in southern California, which has supplanted Mexico as the principal source of supply for the eastern seaboard of the United States. The movement of California oil through The Panama Canal began in October, 1922, and has increased with each subsequent month, until at the close of the year oil is furnishing 60 per cent of

the eastbound cargo, and tanker tonnage in either direction is approximately as great as all other commercial tonnage combined. This is indicated more clearly in the following table:

*Proportion of tankers to total traffic.*

	Total commercial transits.			Average daily transits.		
	Tankers.	General.	Total.	Tankers.	General.	Total.
July.....	20	231	251	0.6	7.4	8.1
August.....	19	238	257	0.6	7.7	8.3
September.....	28	212	240	1.0	7.0	8.0
October.....	31	263	294	1.0	8.5	9.5
November.....	39	255	294	1.3	8.5	9.8
December.....	39	265	304	1.3	8.5	9.8
January.....	51	301	352	1.7	9.7	11.4
February.....	73	253	326	2.6	9.0	11.6
March.....	119	290	409	3.8	9.4	13.2
April.....	148	256	404	5.0	8.5	13.5
May.....	173	246	419	5.6	7.9	13.5
June.....	173	244	417	5.7	8.1	13.9
Fiscal year.....	913	3,054	3,967	2.5	8.3	10.8

	Panama canal net tonnage.			Tolls.		
	Tankers.	General.	Total.	Tankers.	General.	Total.
July.....	113,036	1,014,835	1,127,871	\$103,286.24	\$990,841.18	\$1,094,127.42
August.....	109,697	974,436	1,084,133	95,995.94	959,340.81	1,055,336.75
September.....	146,684	923,726	1,070,410	135,861.20	884,203.35	1,020,064.55
October.....	182,765	1,127,627	1,310,392	167,074.99	1,088,433.01	1,255,508.00
November.....	227,118	1,110,162	1,337,280	194,159.04	1,070,277.50	1,264,436.54
December.....	222,604	1,152,659	1,375,263	203,017.79	1,109,552.33	1,312,570.12
January.....	297,485	1,313,207	1,610,692	254,735.56	1,250,549.99	1,505,285.55
February.....	454,492	1,075,055	1,529,547	397,267.71	1,026,686.50	1,423,954.21
March.....	713,259	1,274,933	1,988,192	627,017.58	1,200,700.86	1,827,718.44
April.....	884,890	1,122,800	2,007,690	782,934.76	1,096,003.39	1,878,938.15
May.....	1,017,185	1,111,229	2,128,414	906,731.91	1,065,484.13	1,972,216.04
June.....	1,005,169	1,030,733	2,035,902	901,241.91	996,801.89	1,898,043.80
Fiscal year.....	5,374,384	13,231,402	18,605,786	4,769,324.63	12,738,874.94	17,508,199.57

It is problematical how long these heavy shipments of California oil will continue. With the discovery and development of new fields the trade may decline as rapidly as it grew, but important contracts have been made, extending over considerable periods, and there are no present indications of a slump.

A healthy growth of traffic, irrespective of crude oil, is shown by the totals for other cargo, which aggregated 10,303,538 tons in 1922 and 15,354,174 tons in 1923, an increase of nearly 50 per cent.

#### NATIONALITY OF VESSELS.

All of the principal maritime nations of the world, with the exception of Japan, shared in the increased traffic and sent a greater net tonnage of shipping through the canal than in 1922. The number of Japanese vessels fell from 189 to 163, and their net tonnage from 872,466 to 753,219. The United States made the greatest gains,

increasing from 1,095 vessels of 4,971,509 net tons to 1,994 vessels of 10,208,536 net tons.

American vessels carried 56.5 per cent of the cargo moving through the canal, British vessels 25.2 per cent, Japanese vessels 4.8 per cent and Norwegian vessels 3.6 per cent. The corresponding figures for 1922 were: United States 45.5 per cent, Great Britain 30.5, Japan 9.5, and Norway 3.7.

The complete figures for 1923 appear in the table below:

Nationality.	Number of ships.	United States equivalent net tonnage.	Panama Canal net tonnage.	Tolls.	Cargo.
					<i>Tons.</i>
Argentine.....	1	0	0	\$1,240.00	0
Belgian.....	3	11,167	13,524	13,953.75	23,952
British.....	1,065	3,968,828	4,892,338	4,736,221.04	4,929,317
Chilean.....	62	126,546	201,411	158,182.50	76,670
Colombian.....	18	6,012	6,030	7,109.60	7,054
Costa Rican.....	1	43	45	53.75	5
Danish.....	65	185,602	240,053	221,569.36	307,876
Dutch.....	109	378,799	510,970	450,356.36	487,957
French.....	56	213,091	252,333	258,360.09	230,175
German.....	90	250,292	336,149	312,395.35	330,134
Greek.....	6	17,879	23,526	20,328.93	30,533
Italian.....	29	97,219	117,782	119,329.58	75,258
Japanese.....	163	659,215	753,219	815,638.48	943,400
Mexican.....	2	1,675	2,292	2,061.75	0
Norwegian.....	147	481,090	597,859	558,839.74	704,292
Panamanian.....	31	50,657	61,828	59,259.86	40,589
Peruvian.....	80	122,449	216,829	152,620.10	111,519
Spanish.....	14	33,551	41,201	38,102.75	32,178
Swedish.....	31	85,299	130,361	108,151.33	181,810
United States.....	1,994	8,277,079	10,208,536	9,473,819.65	11,055,156
Total.....	3,967	14,966,493	18,605,786	17,508,199.57	19,567,875

#### FREE TRANSIT OF PUBLIC VESSELS AND VESSELS FOR REPAIR.

The transit statistics in the preceding sections do not include naval vessels and other public vessels of the United States (or of Panama and Colombia) which pay no tolls. These numbered 388, as against 276 in 1922. The increase was due to the passage of the Atlantic Fleet in February and its return in March. While the transit of public vessels adds nothing to canal revenues, it emphasizes the value of the canal as an element in national defense.

One vessel was sent through the canal free of tolls for repair at the Balboa shops. It is also omitted from the statistics of commercial traffic.

#### CARGO PASSING THROUGH THE PANAMA CANAL IN 1923.

An analysis of the traffic through The Panama Canal by principal trade routes shows that the most notable increase during the year was in the United States intercoastal trade. The cargo handled between the two coasts increased from 2,562,527 tons to 8,068,553 tons. Excluding California crude oil, which contributed 3,689,049 to the total, this is an increase of more than 70 per cent. In 1922

cargo handled in the intercoastal trade represented 23.5 per cent of all cargo passing through the canal; in 1923 intercoastal cargo represented 41.3 per cent of the total.

There was also a great increase in trade between the east coast of the United States and the west coast of South America, cargo moving over this route in both directions increasing from 793,123 tons in 1922 to 2,054,523 tons in 1923. Chilean nitrate and iron ore and Peruvian oil were the most important single items in the total.

The trade between the east coast of the United States and the Far East fell off from 2,031,487 cargo tons in 1922 to 1,909,285 cargo tons in 1923.

The trade between the west coast of the United States and Europe showed a slight decline in cargo handled, which was balanced by an increase in the trade between Europe and western Canada. If the two sets of statistics are combined, as is logical, since vessels trading to the west coast of North America commonly call at both Canadian and United States ports and it is difficult to make an accurate segregation of cargo on the basis of the declarations filed at The Panama Canal, then the cargo handled between the west coast of North America and Europe, both directions included, shows an increase from 2,058,704 tons in 1922 to 2,511,791 tons in 1923, or approximately 22 per cent.

The trade between Europe and the west coast of South America increased from 946,931 cargo tons in 1922 to 1,749,986 cargo tons in 1923.

These are the important trades through the canal and account for 83.4 per cent of all cargo handled. Of the minor trades, that between Europe and Australasia continued to decline, but there was an increase in the trade between the east coast of the United States and Australasia.

Due to the development of through lines, and a corresponding decline in transshipment business at the canal, there was less cargo handled between Cristobal and the west coast of South America. Shipments of Mexican crude oil to the west coast of South America were approximately the same as in 1922. Trade between the east coast of the United States and the west coast of Canada showed an increase.

Atlantic and Gulf ports of the United States shipped 70 per cent of all cargo passing through the canal from Atlantic to Pacific, and received 65 per cent of all cargo moving from Pacific to Atlantic. Pacific ports of the United States shipped 55 per cent of all east-bound cargo, and received 42 per cent of all westbound cargo.



*Commercial traffic through The Panama Canal during the fiscal year 1923, classified by leading trade routes.*

	Number of ships.	Panama Canal net tonnage.	Tons of cargo.	Percentage of total cargo.
<b>Between east coast of United States and west coast of South America:</b>				
Atlantic to Pacific.....	234	917,282	275,313	1.4
Pacific to Atlantic.....	259	1,050,941	1,779,210	9.2
Totals.....	493	1,968,223	2,054,523	10.6
<b>Between east coast of United States and Far East:</b>				
Atlantic to Pacific.....	217	1,146,761	1,466,013	7.5
Pacific to Atlantic.....	69	386,525	443,272	2.3
Totals.....	286	1,533,286	1,909,285	9.8
<b>United States coastwise:</b>				
Atlantic to Pacific.....	775	4,129,656	2,608,307	13.4
Pacific to Atlantic.....	622	3,403,811	5,460,246	27.9
Totals.....	1,397	7,533,467	8,068,553	41.3
<b>Between west coast of United States and Europe:</b>				
Atlantic to Pacific.....	142	690,715	375,700	1.9
Pacific to Atlantic.....	134	646,320	1,020,090	5.2
Totals.....	276	1,337,035	1,395,790	7.1
<b>Between west coast of South America and Europe:</b>				
Atlantic to Pacific.....	183	802,011	486,952	2.5
Pacific to Atlantic.....	205	884,826	1,263,034	6.4
Totals.....	388	1,686,837	1,749,986	8.9
<b>Between Australasia and Europe:</b>				
Atlantic to Pacific.....	75	518,317	415,861	2.1
Pacific to Atlantic.....	55	312,912	306,404	1.6
Totals.....	130	831,229	722,265	3.7
<b>Between east coast of United States and Australasia:</b>				
Atlantic to Pacific.....	79	418,059	462,057	2.4
Pacific to Atlantic.....	23	101,744	72,534	0.4
Totals.....	102	519,803	534,591	2.8
<b>Between east coast of Mexico and west coast of South America:</b>				
Atlantic to Pacific.....	27	138,994	257,280	1.3
Pacific to Atlantic.....	20	94,678	.....	0.0
Totals.....	47	233,672	257,280	1.3
<b>Between east coast of Mexico and east coast of United States:</b>				
Atlantic to Pacific.....	8	37,436	.....	0.0
Pacific to Atlantic.....	31	180,267	300,528	1.5
Totals.....	39	217,703	300,528	1.5
<b>Between Cristobal, C. Z., and west coast of South America:</b>				
Atlantic to Pacific.....	91	165,276	36,290	0.2
Pacific to Atlantic.....	98	167,761	70,613	0.4
Totals.....	189	333,037	106,903	0.6
<b>Between east coast of United States and west coast of Canada:</b>				
Atlantic to Pacific.....	28	134,375	168,140	0.8
Pacific to Atlantic.....	55	258,504	347,407	1.8
Totals.....	83	392,879	515,547	2.6
<b>Between Europe and west coast of Canada:</b>				
Atlantic to Pacific.....	56	299,098	230,331	1.2
Pacific to Atlantic.....	111	587,491	885,670	4.5
Totals.....	167	886,589	1,116,001	5.7
<b>Between Cristobal, C. Z., and west coast of Central America:</b>				
Atlantic to Pacific.....	33	27,533	23,607	0.1
Pacific to Atlantic.....	32	26,774	24,825	0.1
Totals.....	65	54,307	48,432	0.2

*Commercial traffic through The Panama Canal during the fiscal year 1923, classified by leading trade routes—Continued.*

	Number of ships.	Panama Canal net tonnage.	Tons of cargo.	Percentage of total cargo.
<b>Between Cristobal, C. Z., and west coast of United States:</b>				
Atlantic to Pacific.....	21	49,881	21,685	0.1
Pacific to Atlantic.....	24	57,181	48,563	0.2
Totals.....	45	107,062	70,248	0.3
<b>Between Balboa, C. Z., and east coast of South America:</b>				
Atlantic to Pacific.....	6	32,577	29,561	0.1
Pacific to Atlantic.....	2	10,987		
Totals.....	8	43,564	29,561	0.1
<b>Between West Indies and west coast of South America:</b>				
Atlantic to Pacific.....	13	48,017		
Pacific to Atlantic.....	15	61,325	108,755	0.5
Totals.....	28	109,342	108,755	0.5
<b>Between West Indies and west coast of United States:</b>				
Atlantic to Pacific.....	10	45,324		
Pacific to Atlantic.....	8	22,786	39,603	0.2
Totals.....	18	68,110	39,603	0.2
<b>Miscellaneous trade routes and sailings:</b>				
Atlantic to Pacific.....	127	471,501	229,162	1.2
Pacific to Atlantic.....	79	278,140	310,862	1.6
Totals.....	206	749,641	540,024	2.8
Totals, Atlantic to Pacific.....	2,125	10,072,813	7,086,259	35.2
Totals, Pacific to Atlantic.....	1,842	8,532,973	12,481,616	63.8
Total commercial traffic through canal during fiscal year ending June 30, 1923.....	3,967	18,605,786	19,567,875	100.0

#### PRINCIPAL COMMODITIES.

The commodity statistics of The Panama Canal are not compiled from complete manifests but from summary cargo declarations submitted by the masters of vessels in transit. They are not precise except for items like crude oil, wheat, nitrate, and lumber, which are commonly carried in bulk. There is a natural tendency to lump any small miscellaneous shipments under the head of "general cargo." Subject to errors arising from this source, the following table shows the principal commodities shipped through the canal during the fiscal year 1923:

#### FROM ATLANTIC TO PACIFIC.

	Tons.		Tons.
Manufactures of iron and steel.....	<sup>1</sup> 1,499,842	Cement.....	<sup>1</sup> 113,726
Refined petroleum.....	<sup>1</sup> 657,901	Iron.....	<sup>1</sup> 113,527
Crude petroleum.....	284,901	Lubricating oil.....	<sup>1</sup> 98,222
Coal.....	182,829	Coke.....	97,514
Railroad materials.....	<sup>1</sup> 173,259	Paper.....	<sup>1</sup> 89,615
Tin.....	<sup>1</sup> 144,219	Ammonia.....	<sup>1</sup> 75,949
Cotton.....	122,728	Textiles.....	<sup>1</sup> 73,943
Sulphur.....	<sup>1</sup> 117,084	Automobiles.....	<sup>1</sup> 51,494
Machinery.....	<sup>1</sup> 115,970		

<sup>1</sup> Indicates increase over 1922.



## FROM PACIFIC TO ATLANTIC.

	Tons.		Tons.
Crude petroleum.....	1 3,928,800	Food products in cold storage <sup>2</sup> .....	106,058
Nitrate.....	1 1,664,751	Copper ore.....	1 96,436
Lumber.....	1 1,539,340	Dried fruit.....	1 90,187
Wheat.....	1 816,392	Beans.....	1 84,809
Iron ore.....	1 538,804	Rice.....	1 83,536
Barley.....	379,542	Coffee.....	81,654
Copper.....	1 297,775	Phosphates.....	1 76,750
Sugar.....	1 296,471	Flour.....	68,833
Refined petroleum.....	1 291,544	Wool.....	68,141
Canned fruit.....	1 272,509	Borax.....	1 52,183
Canned fish.....	1 168,902	Cotton.....	51,592
Lubricating oil.....	1 114,320		

<sup>1</sup> Indicates increase over 1922.<sup>2</sup> Does not include fresh fruit.

It will be noted that there was an increase in all important items of westbound cargo excepting crude petroleum, coal, coke, and cotton.

Manufactures of iron and steel show an increase of 40 per cent, refined petroleum 46 per cent, railroad materials 24 per cent, tin 89 per cent, sulphur 17 per cent, machinery 30 per cent, cement 136 per cent, iron 64 per cent, lubricating oil 260 per cent, paper 141 per cent, ammonia 5 per cent, textiles 117 per cent, and automobiles 415 per cent.

In the eastbound list there was an increase in all items excepting barley, food products in cold storage, coffee, flour, wool, and cotton.

Eastbound crude oil shipments in 1922 totaled 94,974 tons, and originated almost exclusively in Peru. In 1923 Peruvian shipments increased to 239,751 tons, and shipments from California brought the grand total to 3,928,800 tons. There was a revival of the Chilean nitrate trade. Iron-ore shipments from Chile began in 1914, but were unimportant prior to 1923. Sugar shipments showed a slight increase in spite of the fact that Hawaii for the first time contributed nothing to the total, the entire island crop having been shipped to California refineries. Such typical Pacific coast products as lumber, canned and dried fruit, and canned fish showed notable increases.

Expressed in terms of percentages, the increases were: Crude petroleum 4,035 per cent, nitrate 254 per cent, lumber 113 per cent, wheat 1.4 per cent, iron ore 1,585 per cent, copper 106 per cent, sugar 15 per cent, refined petroleum 214 per cent, canned fruit 47 per cent, canned fish 25 per cent, copper ore 12 per cent, dried fruit 76 per cent, beans 4 per cent, rice 89 per cent, phosphates 15 per cent, and borax 40 per cent.

## MOTOR SHIPS.

There were 121 transits by motor ships in 1923, as compared with 77 in 1922. Although the number of these vessels is gradually increasing, they are still comparatively rare in Panama Canal traffic.

## DETAILS OF THE TRADE.

Further details of the trade through the canal will be found in the following tables in Section V of this report:

Table 59: Summary of commercial traffic, 1915-1923.

Table 60: Commercial traffic by nationality, 1915-1923.

Tables 61-A and 61-B: Origin and destination of cargo, 1923.

Tables 62-A and 62-B: Commercial traffic by nationality, ships, tonnage and cargo, 1915-1923.

Table 63: Commercial traffic by nationality, ships, tonnage, tolls, and cargo, 1915-1923.

## INCONVENIENCE OF THE DUAL SYSTEM OF MEASUREMENT.

Attention is once more called to the fact that under the present system of measurement to determine tonnage for the collection of tolls it is necessary to use both the United States rules and the Panama Canal rules of measurement. The use of the United States rules, with the various interpretations thereof made by the United States Commissioner of Navigation, results in irregular reductions of the toll rate, due to exempted spaces, under which some vessels benefit more than others. As a conspicuous example, two ships of exactly the same dimensions and the same cargo carrying capacity, the *Gold Shell* and the *Silver Shell*, pay tolls, of \$4,386.25 and \$5,076.25, respectively, for no other reason than that there is a difference in location of a small fuel transfer pump.

The adoption of the Panama Canal rules as the sole basis of measurement would result in fair play and simplicity of administration, with a return to the original intent of a toll based on earning capacity.

## LOCKAGES AND LOCK MAINTENANCE.

The schedule established last year for dispatching vessels through the canal was continued with minor alterations. This called for operating shifts at Gatun from 7 a. m. to 11 p. m.; at Pedro Miguel from 7.30 a. m. to 7.30 p. m.; and at Miraflores from 7.30 a. m. to 9 p. m. Two shifts were employed at Pedro Miguel, and three each at Gatun and Miraflores, and their hours were arranged to overlap at the times of heaviest traffic.

At Miraflores both flights of locks were available for use during the entire year. At Pedro Miguel one or the other chamber was unwatered for the painting of the gates and the overhaul of the operating machinery for a total of 94 days between December 14, 1922, and April 15, 1923. At Gatun one flight was out of commission for like reasons for 15½ days in April and May.

The average number of lockages a day was 10.9 at Gatun, 11.7 at Pedro Miguel, and 11.7 at Miraflores. A record was established at

Gatun on May 25, 1923, when 24 commercial seagoing vessels were put through in 23 lockages. On February 15, 1923, 38 vessels passed through the locks at Gatun, but this total included a number of destroyers and submarines locked through in groups. The aggregate number of lockages at all locks during the year was 12,551, as compared with 8,834 in 1922, an increase of 42 per cent.

To handle the increased business, the employment of 6 additional locomotive operators and 1 general operator was authorized at Gatun, and 5 additional locomotive operators were authorized at the Pacific locks.

At Gatun there were nine delays in lockages of more than 10 minutes duration due to faulty operation or failure of equipment, the time thus lost aggregating 5 hours and 4 minutes. At Pedro Miguel and Miraflores there were only minor delays due to the breaking of towing cables, bitts, or chocks.

On May 25, 1923, at Gatun, the S. S. *Hoven*, northbound, and moving at a speed of about four miles an hour, struck a fender chain, as the result of the misunderstanding in the engine room of a signal from the bridge. The chain functioned properly and stopped the ship within 50 feet, preventing a collision with the upper guard gates. No damage was done to either ship or chain mechanism. There is record of one similar incident at the canal in which a fender chain was tested and justified its design.

Maintenance work, as was required to keep all machinery and plant in first-class condition, was carried on at all locks.

Lockages during the year are summarized in the following table:

Month.	Gatun.		Pedro Miguel.		Miraflores.		Total.	
	Lock-ages.	Vessels.	Lock-ages.	Vessels.	Lock-ages.	Vessels.	Lock-ages.	Vessels.
1922.								
July.....	247	268	274	297	269	294	790	859
August.....	260	314	280	318	279	322	819	954
September.....	251	295	270	332	269	334	790	961
October.....	297	344	319	357	317	357	933	1,068
November.....	300	327	319	352	316	361	935	1,040
December.....	303	340	316	374	324	369	943	1,083
1923.								
January.....	352	383	353	405	369	414	1,074	1,202
February.....	341	436	378	506	373	469	1,092	1,411
March.....	434	542	454	599	465	586	1,355	1,727
April.....	397	456	435	503	427	483	1,259	1,442
May.....	416	458	444	490	438	485	1,298	1,433
June.....	413	475	425	484	427	486	1,265	1,445
Fiscal year 1923.....	4,011	4,638	4,267	5,017	4,273	4,960	12,551	14,615
Fiscal year 1922.....	2,801	3,338	3,062	3,599	2,971	3,590	8,834	10,527

#### POWER FOR CANAL OPERATION.

Electric power for the operation of the canal was derived from the hydroelectric plant at Gatun, with the steam generating station at

Miraflores in reserve. Nothing occurred to affect the operation of the major equipment, and continuous service was maintained at both plants, a record always hoped for but seldom attained. No important additions or extensions were made to the power system, but study was given to the replacement of the obsolete Miraflores plant, which has been authorized by Congress.

The average combined generator output in 1923 was 4,422,920 kilowatt-hours per month, as compared with 4,856,905 kilowatt-hours in 1922. There was an average of 3,796,750 kilowatt-hours distributed from substations in 1923, the comparable figure in 1922 being 4,104,479. These figures show a transmission and distribution loss of 14.15 per cent this year, as compared with a corresponding loss last year of 15.65 per cent.

The steam generating station at Miraflores, maintained on the basis of stand-by service, was required to carry load on 36 occasions. The average rate of fuel-oil consumption was 1,362 barrels per month, as compared with 1,762 barrels per month in 1922.

The cost of power generated by the Gatun and Miraflores plants, including the cost of distribution, was \$0.007 per kilowatt-hour, as compared with \$0.0105 in 1922.

#### WATER SUPPLY.

The level of Gatun Lake fell from 87.07 feet at the beginning of the dry season to 82.58 feet on May 9, 1923, from which date the recovery of storage began. On June 30, 1923, the lake was at elevation 84.97.

The following table shows the inflow of water into the lake from all sources, utilization and losses, during the fiscal year:

	Per cent.	Billion cubic feet.
Run-off above Alhajuela .....	43.5	78.35
Yield from land area below Alhajuela .....	37.3	67.25
Direct rainfall on lake surface .....	19.2	34.57
Total .....	100.0	180.17
Evaporation from lake surface .....	10.8	19.54
Gatun Lake lockages .....	16.6	29.93
Hydroelectric power .....	23.1	41.56
Spillway waste .....	49.8	89.68
Leakage and municipal water .....	1.1	1.99
Decreased storage .....	1.4	2.53
Total .....	100.0	180.17

Work was continued on the survey of the Chagres Valley above Alhajuela, where a dam must eventually be built to provide for additional storage. Field work on this survey was nearing completion at the close of the fiscal year, and the results coincide closely with the

original estimate of the storage capacity of the upper Chagres, based on an early reconnaissance made by the French. While the construction of the Alhajuela Dam is not yet a matter of immediate urgency, the rapid increase of traffic through the canal during the past year has emphasized the ultimate necessity of this or an alternative project, and the completion of the preliminary studies has been accelerated.

#### MAINTENANCE OF CHANNEL.

To maintain the channel against normal shoaling and slides in the Gaillard Cut and for harbor maintenance work, three 15-yard dipper dredges were operated for 7, 8, and 9 months, respectively; one 20-inch pipe-line dredge was employed throughout the year, with a second in reserve; one sea-going suction dredge was employed from May 11, 1923, to the end of the year; and one ladder dredge was held out of commission and in reserve. Of the supplementary floating equipment of the dredging division one hydraulic grader was employed for 12 months, and one for  $2\frac{1}{2}$  months, a drill boat was used throughout the year, an air compressor for 11 months, a crane boat all year; 5 tugs were employed, including 1 in reserve; and 14 launches, including 4 in reserve. Two 250-ton floating cranes were commissioned in alternate months.

The following is a statement of all dredging during the fiscal year:

	Cubic yards removed.
From the canal prism:	
Atlantic entrance.....	0
Gatun Lake.....	34,400
Gaillard Cut—	
Maintenance.....	1,955,300
La Pita Point improvement project.....	541,600
Miraflores Lake.....	17,600
Pacific entrance.....	1,450,050
Total.....	<u>3,998,959</u>
Auxiliary:	
Cristobal Harbor and Coco Solo.....	250,000
Balboa inner harbor.....	767,450
Pipe-line crossing, Paraiso.....	6,850
Total.....	<u>1,024,600</u>
Grand total.....	<u>5,023,550</u>

Of the grand total, 3,468,850 cubic yards were classified as earth and 1,554,700 as rock.

#### SLIDES.

A small slide occurred at the north end of East Culebra on August 28, 1922, between stations 1770 and 1774, followed by a slight general movement over the whole area of East and West Culebra, which



continued intermittently during the months of September, October, and November.

On December 20, 1922, a slide occurred at East Culebra affecting the whole water front of the old slide area between stations 1775 and 1790.50. This movement continued until the 23d of that month, when approximately 595,000 cubic yards of material had moved into the basin created at the base of the slide and the canal prism, the amount in the prism being about 150,000 cubic yards.

Simultaneous with this general movement at East Culebra, the West Culebra slide showed a slight movement, and at one point projected into the canal prism for a distance of 32 feet, the area of the slide extending from station 1772 to 1795.

A total of 1,290,250 cubic yards of material was removed during the year from the East and West Culebra slides.

The Lirio slide became active again during the month of June, 1923. At the end of the year 57,950 cubic yards had been removed, and it was estimated that a like amount remained to be handled.

All other slides remained quiescent during the year; but several small berm breaks occurred at various points in the cut, which were removed immediately. Small slides of this character, due to the disintegration of the rock during the dry season and the subsequent effect of heavy rains, are not infrequent at the beginning of the wet season.

The slides caused no interference with canal traffic during the year, except that the *S. S. Amsterdam*, drawing 34 feet, was detained from 11 a. m. on December 23 to the morning of December 24. Although a 35-foot channel was available at that time, it was not deemed advisable to pass a ship with this draft.

#### AIDS TO NAVIGATION.

No new lights have been established during the year, but the maintenance and repair of lights already located on the canal and in the adjacent waters have been carried out as usual, and arrangements were renewed with the Department of Commerce, Bureau of Lighthouses, under which Panama Canal forces attend to the upkeep of the three unwatched lights in operation at Serrana, Roncador, and Quita Sueño.

#### ACCIDENTS.

Investigations were conducted and reports submitted by the board of local inspectors on all accidents to shipping in the canal and locks. Classification of the 10 principal accidents requiring formal investigation by the entire board, is as follows: Collision between ships, 1; touched bottom, 1; damaged in locks, 1; damaged by tugs going alongside, 2; struck approach wall at locks, 2; struck bank, 3. Only



three of these accidents resulted in serious damage to vessels using the canal.

On December 28, 1922, the United Fruit Co.'s steamer *Heredia*, in leaving Cristobal Harbor, was in collision with the Japanese steamer *France Maru*, inward bound. Damages to the *Heredia* were estimated at \$8,000 to \$10,000, and to the *France Maru* at \$13,000. The *Heredia* was held responsible for the collision.

On April 14, 1923, the S. S. *American Star*, belonging to the American Star Steamship Co. and under time charter to the United American Lines, while southbound through the canal, struck the bank in the Gaillard Cut, and was damaged to the extent of \$12,242. The accident was held to be due to faulty steering caused by an inexperienced helmsman and a possible derangement of the steering gear and not to negligence or lack of care on the part of any employee of The Panama Canal. The ship was adjudged liable for the cost of repairs.

On April 15, 1923, the S. S. *G. Harrison Smith*, owned and operated by the International Petroleum Co. and under charter to the Ore Steamship Co., while northbound through the canal with a mean draft of 33' 10'', struck bottom in the Gaillard Cut near station 1793 to the eastward of the center line and about 70 feet from the shore line. It was held that the accident was due in part to the poor maneuvering qualities of the ship and in part to the failure of the pilot to allow for the danger to deep-draft vessels in passing too close to the so-called Gibraltar Shoals. The Panama Canal offered to assume one-half the cost of repairs, estimated at \$18,000, and settlement is being made on this basis.

#### SALVAGE OPERATIONS.

The salvage equipment described in my last annual report was maintained for the benefit of shipping in the canal and adjacent waters, but there were few occasions for its use. The principal salvage operations of the year were in connection with the S. S. *Pennsylvania*, a Texas Oil Co. tanker, which ran aground at Quita Sueño Bank on March 23, 1923, and was floated and afterwards towed to Mobile, Ala., by The Panama Canal's salvage tug *Favorite*; and with the tanker *John D. Archbold*, owned by the Standard Oil Co. of New Jersey, aground at Bona Island in Panama Bay, June 30, 1923, which was also pulled off by the *Favorite*, and, after transferring a cargo of crude oil, proceeded to San Francisco under its own steam for repairs. Other Panama Canal tugs assisted in both operations.

## SECTION II.

### BUSINESS OPERATIONS.

A detailed statement of the expenses (including depreciation), revenues, and profit or loss on the various subsidiary business operations of The Panama Canal will be found in Table No. 26 in Section V of this report. The total net profit on these operations was \$1,140,642.50. The Panama Railroad Co.'s business operations on the Isthmus yielded an additional net revenue of \$922,171.74. The results of the major business operations of both The Panama Canal and the Panama Railroad Co. are summarized in the following paragraphs.

#### REPAIRS TO VESSELS—MECHANICAL WORK.

The volume of work handled by the mechanical shops at Balboa and Cristobal, which was fairly constant during the latter half of the fiscal year 1922, suffered a further reduction at the beginning of the fiscal year 1923, and then remained constant until the final quarter, when the increase of traffic through the canal and an increase in the number of submarines based on Coco Solo brought some additional work to the shops. The total value of work done, \$2,290,226.05, was slightly less than the corresponding figure for 1922, \$2,648,075.43, and was distributed as follows:

Class.	Amount.	Per cent of total.
Marine.....	\$1,105,498.32	48.27
Railroad.....	441,882.69	19.29
Miscellaneous.....	534,246.93	23.33
Manufacture for stock.....	208,598.11	9.11
Total.....	2,290,226.05	100.00

Of the total work done during the year, \$522,960.82 worth was done for individuals and companies, including the Panama Railroad Steamship Line, \$102,158.91 for The Panama Canal, \$458,952.04 for the Panama Railroad Co., and \$286,724.28 for other departments of the United States Government.

*Work for individuals and companies.*—The largest single job undertaken during the year was the reconditioning of the S. S. *Colon* for the Panama Railroad Steamship Line, including the installation of

new boilers, thorough overhaul of the main and auxiliary engines, renewal of all worn-out or doubtful steel in the ship's structure, and the renovation of cold storage and passenger spaces. On June 30, 1923, the work was about 50 per cent completed.

The Mexican gunboat *Bravo* was docked at Cristobal and repairs made to propellers and shafts, including new section of starboard tail shaft and manufacture of new propeller, together with incidental bottom painting and various machinery repairs.

On the S. S. *Mina Brea* extensive repairs were executed following an oil fire in the boiler room, which swept up the boiler room trunk and destroyed the steering gear and upper bridge, besides damaging the boilers and their surroundings.

Broken or damaged propeller shafts or propellers were made good on the steamships *Antonio Lopez*, *Cerro Ebano*, *Dryden*, *Pennsylvanian*, and *Salvador*, and on the tug *Gatun*. Thrust shafts and blocks were removed, machined, and replaced on the steamships *Hampton Roads* and *Empress of Australia*. Damaged bow on the tug *Gorgona* was repaired. Bottom damage on the combined tanker and ore carrier *G. Harrison Smith* was temporarily repaired by shoring and cementing to allow her to proceed north. The S. S. *Unita*, salvaged from Serrano Bank, was docked for examination, and temporary bottom repairs were made.

A new pair of gasoline engines was installed in the motorship *Chiralite*, along with new shafting and propellers.

On the S. S. *Bethore* an important welding job was performed. This vessel developed cracks on each side of her starboard high-pressure cylinder, extending through the cylinder walls and running back into the valve chest, the longest extending about 2 feet. The cylinder was effectively welded by the electric process while in place, and held the full boiler pressure tightly.

On the S. S. *Clan MacWilliams* a remarkable welding job was performed. As the result of a broken piston rod the 73-inch diameter low-pressure cylinder of the main engine was wrecked, a section being broken out of the cylinder wall about 10 feet long and 2 feet deep, this section being fractured into four pieces. In addition the cylinder head was broken into bits, the stuffing box broken, and another considerable crack developed in the cylinder walls. Instead of following the customary procedure of casting a steel piece and welding it into the walls to replace the break, an attempt was made, in order to save time, to replace the pieces broken out and weld them in position. A steel form was accurately machined to fit the inside of the cylinder, and the pieces after suitable preparation were held in place against it by jacks. They were secured in proper vertical relation by being clamped to a steel flange ring secured to the unharmed portion of the cylinder flange. The weld was entirely

successful and was completed with such truth that the cylinder was more out of round from previous wear than deformed at the section welded. So far as can be ascertained this is one of the largest cylinder welds in marine history. Over 500 pounds of welding wire were used. Nearly a cubic foot of metal was actually deposited in the weld drop by drop. Before the advent of welding the length of time required to cast or obtain a new cylinder and fit it into place would have been as many months as the job actually took weeks.

*Work for the Navy and Army.*—For the Navy there were dry-docked the cruisers *Birmingham* and *Galveston*, the destroyer *Farquhar*, submarines *O-2*, *O-3*, *O-7*, *O-11*, *O-12*, *O-13*, *O-14*, *O-15*, *O-16*, *R-21*, *R-23*, *R-24*, *R-25*, *R-26*, and *R-27*, *Eagle 31*, mine sweepers *Cardinal* and *Quail*, oil barge *32*, tugs *Patuxent* and *Sciota*, and four subchasers. On the *Birmingham* new propellers were installed and the work incidental to installation of new port propeller shaft was completed. A new propeller shaft and new starboard and port propellers supplied by the Navy Department were machined and installed on the *Galveston*. New crankshafts were installed on the *O-7* and new tail shaft manufactured and installed. On the *Farquhar* three hull plates were renewed and other damage incidental to collision made good. Extensive annual overhaul was made on the submarines named; on several boats of the "O" class new types of bow planes were fitted and new bridges built.

Various repairs were made to Navy and Army transports and auxiliaries and the local craft of the Army were periodically docked.

Two 50,000-barrel fuel-oil tanks were fabricated in the shops and erected at the Balboa tank farm for the Navy. Forty-five closed cylindrical tanks for gasoline storage, 8 feet in diameter by 16 feet in length and 10 feet by 20 feet, were built for the Army.

*Work for The Panama Canal.*—The usual maintenance work on the floating equipment and rolling stock of the canal was handled. The execution of long-contemplated alterations and items of deferred maintenance served to retain in employment at the beginning of the fiscal year a number of skilled employees and prevent the disintegration of the working force. The more important of these jobs involved changing the spud wells of dredge *86* from round to square to admit of a more economical and serviceable spud; adding 5 feet on each side to the beam of the dredges *Gamboa* and *Paraiso*; the overhaul of the craneboat *La Valley*, and repairs to the 2,000-yard scows. One standard towing locomotive was built for the locks and two more started.

*Work for the Panama Railroad.*—One 61-foot baggage car and one 61-foot hospital car were built and placed in service and one 61-foot second-class coach was rebuilt. The car department also built two gasoline motor cars and one trailer for service between Panama and Paraiso.

The cost of maintaining and repairing Panama Railroad equipment was reduced from \$533,806.33 in 1922 to \$425,721 in 1923, in spite of the fact that under the revised accounting system there is added to all bills against the Panama Railroad Co. a surcharge of 10 per cent, which was not applied the previous year except during the last quarter.

There were 39 heavy repair jobs on locomotives and 2,230 light repair jobs. On cars in active service heavy repairs totaled 98 and light repairs 528. Cars in reserve were also inspected and repaired. The condition of the equipment was fully as good at the end as at the beginning of the year.

*Dry docks.*—For The Panama Canal 23 vessels were dry-docked at Balboa and 16 at Cristobal. The number of other vessels dry-docked was 37 at Balboa and 37 at Cristobal.

*Costs.*—Constant attention has been given to keeping down costs, and although the scarcity of work during the greater part of the year was a serious handicap, gratifying results have been obtained. The overhead expenses of the marine group of shops were less by about \$63,000 than during the preceding year, notwithstanding the fact that increases in the cost of electricity and water placed an additional burden of \$30,000 on the overhead. The average percentage of overhead was 56.50, as compared with 54.43 in 1922.

*Financial.*—The operation of the shops, after an extraordinary transfer to reserve of \$50,000 for the reroofing of two buildings, resulted in a net profit of \$100,473.26. After deducting from this fixed capital charges of \$41,032.44 there remained a surplus of \$59,440.82.

#### COAL.

Coal sales, which totaled 558,149 tons in 1920, 468,815 tons in 1921, and 251,616 tons in 1922, showed a further decline and totaled only 224,464 tons in 1923. This is due in part to the increasing use of oil as a fuel for steamships, but more especially to the fact that the price of coal on the Isthmus, including transportation and handling charges, is necessarily higher than at ports nearer the mines where the majority of vessels trading through the canal can fill their bunkers. Sales in 1923 and 1922 were as follows:

	1923	1922
Commercial vessels.....	198,906	228,231
Panama R. R.....	9,630	4,519
Panama Canal.....	5,498	8,584
United States Army.....	7,120	6,343
United States Navy <sup>1</sup> .....	0	0
Miscellaneous.....	3,310	3,939
Total.....	224,464	251,616

<sup>1</sup> The Navy maintains its own supply, from which 34,154 tons were delivered in 1923.



In 1922 heavy losses were incurred through price fluctuations which forced the sale of large stocks of coal at less than cost in order to move it at all. In 1923 market conditions were more favorable, and the expenses of operations were greatly reduced, but the Panama Canal plants can not be successfully operated on the present volume of business, and the year's operations showed a loss of \$81,891.78.

As a measure of economy the coaling plant at Balboa was shut down on March 31, 1923. A small stock is still maintained there, and deliveries can be made when required by detailing operators from the plant at Cristobal.

The quantity of coal on hand at the beginning of the year was 156,903 tons, 139,300 tons were received, 6,455 tons were recovered, and 224,464 tons were sold, leaving 78,194 tons on hand June 30, 1923, of which 74,664 tons were at Cristobal and 3,530 tons at Balboa.

Effective August 16, 1922, the special prices for coal taken in large quantities were canceled, and since then flat rates have been maintained of \$12 a ton at Cristobal and \$15 a ton at Balboa.

#### FUEL OIL, DIESEL OIL, GASOLINE.

Facilities for the storage of fuel oil were increased by the erection of four new tanks at Cristobal and three at Balboa. The Panama Canal now has 12 tanks with an aggregate capacity of 448,040 barrels, the United States Navy has 6 tanks with a capacity of 300,000 barrels, and 8 companies have 18 tanks with a capacity of 1,082,000 barrels. Some of these tanks are used for the storage of Diesel oil.

The oil storage tanks are grouped in two farms, one at either end of the canal, and each served by a central pumping plant owned and operated by The Panama Canal. The oil pumped for all interests during the year, including both receipts and issues, totaled 10,429,517 barrels. The revenue from the oil business, which amounted in 1923 to \$267,143.16 net, is derived principally from pumping charges, the sales to vessels from Panama Canal stock being insignificant.

For the storage of gasoline in bulk The Panama Canal has 1 tank at Balboa and 2 at Cristobal with a combined capacity of 620,000 gallons, and an oil company has 1 tank at Balboa with a capacity of 1,470,000 gallons.

The oil and gasoline business of the year is summarized in the following table:

	Balboa.	Cristobal.	Total.
Fuel oil sold to steamships by Panama Canal (barrels).....	0	0	0
Fuel oil sold to steamships by companies (barrels).....	2,160,887	2,384,348	4,545,235
Number of ships by Panama Canal.....	0	0	0
Number of ships by companies.....	781	740	1,521
Bulk gasoline sold to steamships by Panama Canal (gallons).....	16,018	4,317	20,335
Bulk gasoline sold to steamships by companies (gallons).....	0	0	0
Number of ships by Panama Canal.....	3	5	8
Number of ships by companies.....	0	0	0
Diesel oil sold to steamships by Panama Canal (barrels).....	0	2,421	2,421
Diesel oil sold to steamships by companies (barrels).....	52,073	2,789	54,862
Number of ships by Panama Canal.....	0	19	19
Number of ships by companies.....	34	2	36



As compared with the fiscal year 1922, sales of fuel oil to steamships show an increase of 80 per cent, while Diesel oil sales, which are relatively unimportant, declined 18 per cent.

#### SHIP CHANDLERY AND OTHER SUPPLIES — STOREHOUSE OPERATIONS.

The storehouses were operated under the same policy as during the preceding fiscal year; the forces were held at a minimum, and every effort was made to dispose of remaining surplus and obsolete material and to keep the inventory as low as is consistent with safety and the efficient operation of the canal. The movement of stock is summarized in the following statement:

Total on hand June 30, 1922, general stores.....	\$5, 246, 361. 90
Total on hand June 30, 1922, medical stores.....	97, 407. 78
Total.....	5, 343, 769. 68
Received during the year.....	3, 943, 216. 53
Total.....	9, 286, 986. 21
Issued during the year.....	6, 034, 647. 81
On hand June 30, 1923.....	3, 252, 338. 40

Sales to steamships totaled \$99,582.27, local sales \$320,904.77, and so-called credit sales, which include material issued on foreman's orders for the Army and Navy and for jobs ordered by individuals and companies, \$565,924.90, or a total of sales from the storehouses to other than The Panama Canal and Panama Railroad of \$986,411.94. The corresponding figures for 1922 was \$1,532,477.18.

Scrap and surplus material offered for sale in the United States realized gross proceeds of \$448,888.14.

#### HARBOR TERMINALS.

Although the revenue from wharfage, rent, and storage, stevedoring and the handling and transfer of cargo at the Cristobal and Balboa terminals fell from \$1,156,566.43 in 1922 to \$1,101,908.01 in 1923, operating expenses were cut from \$883,384.65 to \$823,329.87, and the net revenue of \$278,578.14 was greater by \$5,396.36.

Effective August 1, 1922, the stevedoring rates on general cargo were reduced 25 per cent, and the rates on certain classes of special cargo from 10 per cent to 15 per cent.

The following table compares the work of the last two years:

	1923	1922
Tons of cargo stevedored.....	307, 575	313, 702
Revenue per ton stevedored.....	\$0. 5024	\$0. 4925
Cost per ton stevedored.....	\$0. 3767	\$0. 3114
Tons of cargo handled and transferred.....	837, 271	830, 134
Revenue per ton handled.....	\$0. 9668	\$0. 9893
Cost per ton handled.....	\$0. 6880	\$0. 7328
Gross operating revenue.....	\$1, 101, 908. 01	\$1, 156, 566. 43
Gross operating expense.....	\$823, 329. 87	\$883, 384. 65
Net revenue.....	\$278, 578. 14	\$273, 181. 78
Per cent of expense to revenue.....	74. 72	76. 37

The bulk of the transshipment and local freight business is handled at Cristobal, which is a port of call for a number of Atlantic lines which do not transit the canal and a terminal port of several Pacific lines. Relatively little cargo is handled at Balboa. The table below indicates the distribution of business between the two ports:

	Balboa.	Cristobal.
Number of ships discharging or taking cargo.....	608	1,304
Tons of cargo received (ex cargo).....	40,507	427,843
Tons of cargo delivered (per cargo).....	38,275	316,088
Tons of cargo stevedored by Panama Railroad.....	31,143	276,432
Tons rehandled by Panama Railroad.....	4,393	10,165

#### COMMISSARY SYSTEM.

The commissary system (Panama Railroad), consisting of purchasing agencies, 5 wholesale units, 9 retail stores, and 7 manufacturing plants, in addition to 2 electric refrigerating plants and an industrial laboratory, was continued for account of the Panama Railroad Co. but under the supervision of the chief quartermaster of The Panama Canal. The difficulties experienced during the fiscal year 1922, when losses aggregating \$241,992.35 were incurred by reason of the rapid fall in commodity prices, have been overcome, and the operations for 1923 show a profit of \$392,806.98. Sales totaled \$6,540,452.61, as compared with \$6,966,376.63, but the decrease was not due to a smaller volume of business but to lower prices.

The total capital investment amounts to \$3,517,134.57, made up as follows: Plants and stores \$2,073,104.36, equipment \$92,440.76, supplies on hand \$851,589.45, and floating capital \$500,000.00. The amount of accrued depreciation set up is \$495,113.65.

The following statement shows by classes the value of supplies on hand at the beginning of the year, the amount purchased during the year, and the value remaining on hand at the close of the year:

	On hand June 30, 1922.	Purchases.	On hand June 30, 1923.
Groceries.....	\$158,339.40	\$1,067,994.94	\$138,038.84
Hardware.....	91,453.52	232,035.31	82,840.39
Dry goods.....	328,868.99	625,076.90	285,675.04
Boots and shoes.....	126,146.34	99,593.83	58,520.51
Cold storage.....	61,277.05	1,010,806.09	79,817.39
Tobacco.....	17,857.89	337,946.59	22,088.59
Raw material.....	327,199.75	1,053,926.43	184,608.69
Total.....	1,111,142.94	4,427,380.09	851,589.45

<sup>1</sup> Includes cattle, milk, butter, and eggs in amount of \$857,117.62.

Purchases were made as follows: In the United States, \$3,548,-344.81; Europe, \$142,827.17; Central and South America, \$115,-

040.72; from the cattle industry on the Isthmus, \$393,576.11; from The Panama Canal, \$127,927.39; other local purchases, \$99,663.89

Sales were made as follows:

	1922	1923	Decrease.
To United States Government.....	\$1,219,544.76	\$1,083,820.98	\$135,723.78
Panama Canal.....	983,585.88	696,361.12	287,224.76
Steamships.....	359,789.69	343,598.17	16,191.52
Panama R. R. Co.....	215,697.09	170,399.89	45,297.20
Individuals and companies.....	323,417.21	<sup>1</sup> 601,649.42	<sup>2</sup> 278,232.21
Employees.....	4,000,950.83	3,797,343.97	203,606.86
Gross revenue from sales.....	7,102,985.46	6,693,173.55	409,811.91
Less discounts and credits.....	136,608.83	152,720.94	<sup>2</sup> 16,112.11
Total.....	6,966,376.63	6,540,452.61	425,924.02
Supplies for expenses and equipment:			
Retail commissaries and warehouses.....	102,288.16	71,013.09	31,275.07
General.....	737.19	1,104.89	<sup>2</sup> 367.70
Plants.....	77,553.10	62,950.14	14,602.96
Total.....	180,578.45	135,068.12	45,510.33
Loss by condemnation, shrinkage, etc.....	66,017.98	70,213.01	<sup>2</sup> 4,195.03
Loss by clerical errors, pilfering, etc.....	41,194.45	44,591.84	<sup>2</sup> 3,397.39
Total.....	107,212.43	114,804.85	<sup>2</sup> 7,592.42
Grand total.....	7,254,167.51	6,790,325.58	463,841.93

<sup>1</sup> The increase in this item is due to the leasing of The Panama Canal restaurants, thus changing the classification from Panama Canal to individuals and companies.

<sup>2</sup> Denotes increase.

*Cattle industry.*—There has been no importation of beef cattle since January, 1922, and only enough cattle were sold to the commissary during the year to supply the current demand. After reducing the book value of cattle on hand June 30, 1922, by approximately \$500,000, which was charged to profit and loss in the account for 1922, there remained on hand 13,237 head, with a valuation of \$547,891.88. During the year there were 361 births; 4,507 heads were delivered to the commissary or sold to outsiders; 378 were transferred to other units, and 156 died, leaving 8,557 on hand June 30, 1923.

The revenue from sale of cattle, hides, and other products was \$318,990.23, and expenses totaled \$317,478.03, resulting in a profit from operations of \$512.20.

Improvement work was limited to the reclearing of 11,574 acres of pasture land at a cost of \$2.34 an acre.

*Dairy farm.*—After reducing the book value of the dairy stock by \$16,000 on June 30, 1922, there remained on hand 605 head, valued at \$28,072.10. During the year there were 112 births, and 332 head were received from other units. Sales accounted for 413 head, and there were 19 deaths, leaving 617 head on hand June 30, 1923.

The revenue from the sale of cattle, milk, and cream was \$73,512.60, expenses were \$61,664.21, and the profit from operations \$11,848.39.

*Plantations.*—The Frijoles and Juan Mina plantations were operated under the superintendence of the cattle industry, while the operation of the seven other small plantations and gardens was continued under contract. The loss from operations was \$2,901.01.

#### HOTELS AND RESTAURANTS.

The Hotel Tivoli at Ancon and the Hotel Washington at Colon were operated at a loss of \$17,938.72. Their continued maintenance is considered essential to afford accommodations to persons having business to transact with The Panama Canal, travelers, tourists, and visiting government officials. In 1922 the hotels were advertised for lease, but no satisfactory bids were received.

The restaurants and silver messes have been operated under a contract since May 1, 1922, and satisfactory service was rendered to employees by the contractor at fair prices.

#### BUILDING CONSTRUCTION AND REPAIRS.

All buildings of The Panama Canal and the Panama Railroad, including employees' quarters, were maintained in good repair, and some construction and repair work was done for the Army and the Navy. The largest single job undertaken was the construction of two concrete four-family houses at the Coco Solo Submarine Base at an approximate cost of \$103,000. The total expenditures for building construction and repairs were \$481,750.87, while the revenue credited to this account was \$492,318.06.

#### PRINTING.

The total value of printing and binding at The Panama Canal Press and of stationery sales was \$204,015.90, as compared with \$258,619.47 in 1922. The plant showed a loss of \$973.87 over and above the interest on the investment in spite of economies effected during the year. The auditor reports that this is due to insufficient charges for work performed and that if the manufactured product were charged out at rates comparable to those of other printing plants, this unit would show a large profit. Accounting studies were being made at the close of the year to determine rates which will cover the operating expenses. Report is made each quarter to the Joint Committee on Printing, and all of the plans of that committee to promote economy in public printing have been followed.

#### PANAMA RAILROAD.

Although the freight and passenger business of the Panama Railroad continued to decline, the loss of revenue was offset in part by operating economies, and the net revenue was \$160,883.41, as com-

pared with \$165,632.25 in 1922. The trackage maintained was reduced from 183.64 miles to 161.78 miles. Of this reduced total 109.54 miles were in main line and sidings, 42.35 Panama Canal track, and 9.89 United States Army track.

The total freight handled was 213,574 tons, as compared with 208,015 tons in the previous year, but the revenue from freight service was less by \$96,927.62. Through commercial freight decreased 3,437 tons, Army freight increased 7,916 tons, Panama Canal freight increased 7,537 tons, local commercial freight decreased 1,324 tons, and commissary freight decreased 2,903 tons. Company freight totaled 1,995 tons.

The following table shows the number of passengers carried and the passenger revenue for the fiscal years 1922 and 1923:

	Number of passengers carried.		Passenger revenue.	
	1923	1922	1923	1922
First-class passengers.....	176, 316	287, 463	\$217, 547. 08	\$229, 842. 40
Second-class passengers.....	243, 136	449, 502	163, 256. 52	196, 522. 74
Total.....	419, 452	736, 965	380, 803. 60	426, 365. 14

The average revenue per passenger per mile for 1923 was \$0.0288, and for 1922, \$0.0256. The gross revenue from transportation of passengers shows a decrease of \$45,561.54, and the number of passengers carried shows a decrease of 317,513.

The following table contains the general operating statistics of the railroad for the fiscal years 1922 and 1923:

	1923	1922
Average miles operated.....	47. 61	47. 61
Gross operating revenue.....	\$1, 375, 777. 72	\$1, 552, 400. 54
Operating expenses.....	\$1, 214, 894. 31	\$1, 386, 768. 29
Net operating revenue.....	\$160, 883. 41	\$165, 632. 25
Per cent of expenses to revenue.....	88. 31	89. 33
Gross revenue per mile of road.....	\$28, 896. 82	\$32, 606. 60
Operating expenses per mile of road.....	\$25, 517. 63	\$29, 103. 64
Net revenue per mile of road.....	\$3, 379. 19	\$3, 499. 96
Revenue per passenger train-mile.....	\$4. 26	\$5. 07
Revenue per freight train-mile.....	\$10. 25	\$8. 82
Total revenue train mileage.....	\$175, 517	\$192, 112
Railroad revenue per train-mile.....	\$7. 84	\$8. 08
Railroad operating expenses per revenue train-mile.....	\$6. 92	\$7. 22
Net railroad revenue per revenue train-mile.....	\$0. 92	\$0. 86
Freight, passenger, and switch locomotive mileage.....	287, 441	274, 894
Work-train mileage.....	36, 562	38, 858
Passenger-train mileage.....	105, 127	99, 430
Freight-train mileage.....	70, 390	92, 682

#### TELEPHONES.

During the year 614 telephones were installed and 508 removed, leaving a total of 2,554 in service. Calls during the eight-hour business day averaged 23,007, as compared with 22,174 in 1922.



The system now includes 36 miles of pole line, 249 miles of underground circuit, 135 miles of cable, 13,728 miles of wire, 960 miles of phantom circuits, 276 miles of simplex circuits, 25 manual and 3 automatic exchanges. It is connected with the exchanges of the Panama Telephone Co. in the cities of Panama and Colon.

The manual telephone exchanges at Cristobal, Gatun, and Pedro Miguel have deteriorated to such an extent that new equipment has become absolutely necessary in order to maintain adequate telephone communication. During the year study was completed, specifications prepared, and requisition placed for new automatic exchanges at these points. Requisition was also placed for alternate proposals on equipping the Balboa exchange with part automatic or full automatic apparatus.

New buildings are to be erected for the Cristobal, Gatun, and Pedro Miguel exchanges, while at Balboa available space on the third floor of the administration building will be used.

The telephone system is owned by the Panama Railroad Co., but is operated by the electrical division of The Panama Canal.

#### LANDS AND BUILDINGS.

The revenue derived by the Panama Railroad Co. from real estate operations was \$152,604.46, as compared with \$143,449.40 in 1922; operating expenses totaled \$60,415.45, as against \$34,499.39; and the net revenue \$92,189.01, as compared with \$109,950.01. The increase in operating expenses is due to changes in the distribution of the depreciation on buildings and other arbitrary charges.

There are in effect approximately 1,265 leases granted by the Panama Railroad Co. in the cities of Panama and Colon and 6 licenses covering the use of its property in those cities. Economic conditions in Colon have resulted in the surrender by the lessees of a number of leases, particularly in the warehouse district and the district set aside for residences for Caucasians. Leases which expired in the two cities were renewed at increased rates.

The Panama Canal has also issued leases or revocable licenses for land and buildings in the Canal Zone to steamship companies, oil companies, and other business interests, and covering small tracts of agricultural land. The revenue from such land and buildings aggregated \$34,890.61, with expenses of \$23,017.83, leaving a net profit of \$11,872.78. The number of agricultural leases in effect on June 30, 1923, was 1,805, covering 6,667½ hectares. Under the terms of their leases agricultural tenants with less than 5 hectares of land will pay no rent until July 1, 1924. The results of reopening unoccupied sections of the Canal Zone to agriculture are discussed in Section III of this report under the head of public health.

The Panama Canal also collected from employees the sum of \$554,657.14 in rental charges for quarters, which were maintained at an expense of \$512,451.46.

#### CLUBHOUSES.

The sum of \$150,000 was appropriated by Congress toward the operation of clubhouses and playgrounds for gold and silver employees and their families, of which a total of \$141,424.95 was used. After deducting the amount of this subsidy from the gross expenses, the clubhouse accounts showed a profit on the year's business of \$47,-050.87. The accumulated surplus on June 30, 1923, was \$161,572.43. The subsidy for the fiscal year 1924 has been reduced to \$100,000.

#### PANAMA RAILROAD STEAMSHIP LINE.

The gross income of the steamship line for the fiscal year ended June 30, 1923, was \$2,378,026.96 and the operating expenses were \$2,542,488.41, leaving a net income deficit of \$164,461.45. This deficit, as compared with that for the fiscal year ended June 30, 1922, of \$587,332.45, shows a decrease of \$422,871.

The steamship line operating as an adjunct of The Panama Canal carried all freight and passengers for account of the United States Government during the year at material reductions from regular tariff rates. Had the line received tariff rates its deficit of \$164,461.45 would have been reversed and a gain of \$290,049.69 shown.

Briefly the principal causes contributing to the deficit of \$164,461.45 were—

1. The tonnage carried amounted to 230,916 tons, as compared with 252,866 tons for the previous year, a decrease of 21,950 tons, or 9 per cent.

2. The marked lowering of rates caused by the keen competition of direct lines operating to the South Pacific, the Isthmus of Panama, and Haiti.

3. The depression in business conditions throughout the countries served by the steamship line.

4. The cost of foodstuffs, stores, and supplies during the year, which has remained at the high mark established during the last two fiscal years; advances in wages of officers and crews, as well as the increased cost of stevedoring, due to advances in wages granted to the men.

The deficit includes in addition to current operating expenses depreciation and deferred charges for general and extraordinary repairs incurred in prior years. By eliminating depreciation and deferred charges for extraordinary repairs, the deficit would have been reduced to \$39,822.98.

## SECTION III.

### GOVERNMENT.

The usual functions of government are carried out in the Canal Zone through the executive, health, and municipal departments; but in addition all of the accounting work is done in the accounting department, while aids to navigation, steamboat inspection, and hydrographic and meteorological work, commonly considered government duties, are here associated with canal operation. From the financial statements in Section V of this report data on the cost and revenue of various branches may be obtained.

### POPULATION.

A census of the civil population of the Canal Zone was taken by the police force during the month of June, 1923, a summary of which is given below:

	Americans.					All others.					
	Total men.	Employees.	Total women.	Employees.	Children.	Total men.	Employees.	Total women.	Employees.	Children.	Total.
Balboa district.....	1,584	1,405	1,797	294	1,830	3,379	2,327	2,463	169	4,150	15,203
Cristobal district.....	535	468	657	21	688	2,690	2,237	1,684	49	3,336	9,590
Prisoners.....	36					136		2		1	175
Total.....	2,155	1,873	2,454	315	2,518	6,205	4,564	4,149	218	7,487	24,968

<sup>1</sup> Includes 432 civilian employees of the Army and Navy.

In addition to the civilian population the military population in the Canal Zone in June, 1923, numbered 9,797, making a grand total of 34,765.

### PUBLIC HEALTH.

*Malaria.*—The total number of malaria cases reported from the Canal Zone and terminal cities during the year compared with the two previous years is as follows:

	1921	1922	1923
Employees.....	325	176	216
Military and naval personnel.....	810	828	870
Nonemployees.....	459	243	657
Total.....	1,594	1,247	1,743

The increase in the number of cases of malaria among nonemployees experienced this year was expected and predicted as a result of the new policy of allowing unemployed laborers to return to the zone to take up land for agricultural purposes. It is impracticable to sanitize completely the country in which these settlers live. They are widely scattered over the available parts of the zone, living in rude shacks near water courses and the lake, and are at all times exposed to malarial infection. About 1,805 licenses have been granted these settlers and it is estimated that 650 families are now living on the land. Each home has a pit privy, not covered nor water tight, but at least limiting the chances of intestinal infection. Many have learned to boil their drinking water, and some are undertaking drainage. Aside from malarial infection, the venture seems surprisingly successful in most instances. Ground has been cleared rapidly and already many of the settlers have achieved what appears to be economic independence, at least according to their standards; are rearing their families in contentment; and are perhaps in better circumstances than similar agriculturists in Panaman territory. They have a certain amount of supervision by the American authorities, including the sanitation and police forces, and have, at least until they are able to pay for it, free medical service at The Panama Canal dispensaries and hospitals. In spite of the physical risk of living in practically unsanitated areas, and the present resulting increase of malaria in some of our sanitated areas, the net result of opening up the zone to land settlers is a great gain to the community in increased and cheaper food supply, and in converting a large number of idle pauper blacks, former canal employees, into self-supporting and self-respecting individuals. The large reservoir of available labor supply so established may also prove of supreme importance to the canal in time of sudden emergency. No licenses are granted within a mile of Army posts and important residential sections of the zone, but unfortunately laborers residing in zone towns exchange visits with these settlers, and it is believed that many cases of malaria among the colored employees and their families have resulted from this practice.

*Canal Zone.*—The average population (civil and military) for the fiscal year 1923 was 31,920, and this figure has been used as a base for vital statistics. From this population 265 deaths occurred during the year, 237 of which were from disease, giving a rate of 7.42 for disease alone, as compared with 7.04 for 1922 and 7.03 for 1921.

The birth rate for the year was 20.02 per thousand population. The infant mortality rate, based on the number of live births reported for the year, was 42.25 for white children and 105.63 for black children, with a general average of 84.51. Of the total births reported, 5 per cent were stillbirths. Of the total deaths reported, 35 per

cent occurred among children under 5 years of age. The maternal mortality rate (from conditions due to the puerperal state) was 4.47 per thousand births, stillbirths included.

*Panama.*—The average population of the city of Panama for the year was 59,635. From this population 1,123 deaths occurred during the year, of which 1,088 were from disease, giving a rate of 18.24 for disease alone, as compared with 22.15 for the preceding year.

The principal causes of death, compared with last year, were as follows:

	Number of deaths.	
	1922	1923
Tuberculosis (various organs).....	232	218
Diarrhea and enteritis.....	176	144
Pneumonia (broncho and lobar).....	225	128

There were 1,986 live births reported for the year, giving a rate of 33.3 per thousand population. The infant mortality rate, based on the number of live births reported, was 135.45. Of the total number of births reported, 5 per cent were stillbirths. Of the total deaths reported, 34 per cent occurred among children under 5 years of age. The maternal mortality rate (from conditions due to the puerperal state) was 6.21 per thousand births, stillbirths included.

*Colon.*—The population of the city for the year averaged 31,285, as compared with 31,500 for 1922. From this population 436 deaths occurred during the year, of which 413 were from disease, giving a rate of 13.2 for disease, as compared with 13.78 for 1922.

The principal causes of death, as compared with last year, were:

	Number of deaths.	
	1922	1923
Tuberculosis (various organs).....	70	79
Pneumonia (broncho and lobar).....	32	40
Diarrhea and enteritis.....	46	26

There were 694 live births reported for the year, giving a rate of 22.18 per thousand population. The infant mortality rate, based on the number of live births, was 146.97. Of the total births reported, 5 per cent were stillbirths. Of the total deaths, 32 per cent occurred among children under 5 years of age. The maternal mortality rate (from conditions due to the puerperal state) was 5.47 per thousand births, stillbirths included.

*Canal hospitals.*—Patients treated in Panama Canal hospitals, fiscal year 1923:



	Number in hospital July 1, 1922.		Admitted.		Died.		Discharged.		Transferred.		Remaining June 30, 1923.	
	White.	Black.	White.	Black.	White.	Black.	White.	Black.	White.	Black.	White.	Black.
Ancon.....	128	128	3,320	2,768	46	170	3,208	2,541	24	80	170	105
Colon.....	24	20	945	1,370	15	49	698	908	236	409	20	24
Corozal:												
Insane.....	88	291	72	120	4	19	67	81	2	2	87	309
Cripples.....	5	28	1	7	0	0	2	9	0	0	4	26
Chronics.....	2	24	6	5	0	2	6	4	0	0	2	23
Palo Seco leper colony.....	6	67	1	16	0	2	0	4	0	0	7	77
Total.....	253	558	4,345	4,286	65	242	3,981	3,547	262	491	290	564

*Quarantine.*—Throughout the year the policy of extending cooperation with other nations in the matter of quarantine has been continued. The chief quarantine officer visited the principal ports of Central America on both the Pacific and the Caribbean coasts and the west coast of South America as far south as Valparaiso. As a result, a better mutual understanding was created and the interchange of sanitary reports increased.

The chief danger which threatens The Panama Canal in the matter of maritime quarantine is the presence of bubonic plague in west coast South American ports. If this disease should gain entry into the Canal Zone, it is not probable that there would be any great epidemic, but there probably would be a certain amount of falling off in the number of ships transiting the canal, since undoubtedly the presence of plague at this point would result in the imposition of quarantine by other governments. The work of making the Canal Zone proof against the introduction of plague, by the elimination of rat harboring places and catching of rats, was energetically continued during the year.

Yellow fever has ceased to be a menace. During the year an epidemic outbreak occurred in the interior of Colombia, but aside from the small restrictions which this necessitated, quarantine was not imposed against any country on account of yellow fever.

The policy of moving the ships through quarantine with the utmost expedition has been continued. During the year no ship has been detained in quarantine. This has reduced very materially the losses which ships formerly suffered in this way. For example, in 1920 the estimated loss on account of quarantine delays was \$10.75 per thousand tons of shipping. In this fiscal year the estimated loss was \$0.027 per thousand tons of shipping.

#### \* MUNICIPAL ENGINEERING.

*Water supply.*—The usual maintenance work was performed on the pipe lines, reservoirs, filtration plants, and pumping stations. A

concrete surge tank with a capacity of 750,000 gallons was constructed at Summit, the high point on the main between the Gamboa pumping station and the Miraflores filtration plant, at a cost of \$25,151.20. It has been in operation since November 23, 1922. During April, 1923, the main under the Pedro Miguel locks which supplies the west bank of the canal developed a serious leak that could not be repaired without putting the locks out of commission for a longer period than was practicable. A new line was accordingly laid in a trench dredged in the bottom of the canal at Paraiso. The cost of this job was \$47,739.19. A windmill was erected to supply water to the village of Monte Lirio, and electric recording gauges were installed at the high and low service reservoirs in Ancon.

The amount of water consumed was:

Canal Zone.....	gallons..	2, 807, 771, 000
Panama.....	do....	1, 063, 954, 000
Colon.....	do....	716, 883, 250
Sold to ships.....	do....	11, 583, 750

*Sewage systems.*—No extensions were made during the year, and no unusual conditions were encountered. Three new pumps were installed, two in Colon and one in the New Cristobal sewage pumping station.

*Roads, streets, and sidewalks (Canal Zone).*—In addition to the usual maintenance work, the following jobs were authorized and completed:

A concrete road 1,760 feet in length and 18 feet wide was constructed from Silver Town, Mount Hope, to connect with the road leading from the cold-storage plant to the Margarita Road. This will serve to shorten the distance from Cristobal, Colon, and Mount Hope to France Field, the Naval Air Station, the submarine base, and Fort Randolph by 6,600 feet, besides eliminating dangerous curves and grades and interference with the operation of the cold-storage plant.

Tivoli Avenue was resurfaced from the corner of Ancon Boulevard to the Tivoli Hotel, and a dangerous curve at the intersection of these two roads was widened.

The Paraiso-Gamboa macadam road was repaired, oiled, and sanded.

The ramp projecting into the street in front of the Cristobal commissary, which interfered greatly with the heavy traffic in that vicinity, was removed and replaced with a concrete pavement.

The asphalt surface of a number of roads in the southern district has worn very smooth, becoming dangerous to vehicular traffic in wet weather and on heavy grades. The surface of such roads was roughened.

Pedestrian and vehicular traffic has increased to such an extent in Ancon and Balboa that concrete sidewalks were constructed at four different points to eliminate the danger of accidents to pedestrians.

*Garbage disposal.*—The incinerator at Mount Hope was operated through the year, and burned 22,490 tons of garbage. As it was continually overloaded, one of the 60-ton units was transferred from the Balboa incinerator, which has not been in use, since in the southern district it has been found feasible and more economical to dump garbage on waste land and bury it.

*Cities of Panama and Colon.*—The revenue received from the sale of water in Panama and Colon was insufficient to meet the combined maintenance, interest, and repayment costs of municipal improvements, and a deficit was incurred, amounting on March 31, 1923, to \$121,410.46. This was paid by the Republic of Panama in June. The streets in Panama, on account of lack of sufficient maintenance, had deteriorated to such an extent that repair work at a cost of \$16,942.36 became a necessity. Similar repairs on the streets and sewers of Colon cost \$9,158.21. Both items were charged against the Republic of Panama.

*Miscellaneous work.*—The municipal division also handled a large amount of construction work for other divisions of The Panama Canal, the United States Navy, the United States Army, the Panama Railroad Co., and various individuals and companies.

#### PUBLIC ORDER.

The resident population of the Canal Zone, consisting almost entirely of civilian employees of The Panama Canal and military and naval personnel, with their families and dependents, is law abiding and requires relatively little police control. The majority of the crimes and misdemeanors leading to arrest are committed either by transients or by persons resident in Panama and Colon but having access to the Canal Zone. The percentage of criminality is not high, and the formation of a criminal class is prevented by the enforcement of stringent immigration regulations and the deportation of persons convicted of felony, excepting the native born, upon the expiration of their sentences.

The number of arrests made during the year was 3,552, slightly more than the number in 1922 (3,372), but less than in any other year since 1905. The average number of prisoners in the common jails at the close of each month was 73, 1 less than in 1922. The more common causes of arrest were violations of the motor-vehicle regulations, with 893 cases; disorderly conduct, 395; violation of immigration regulations, 316; loitering, 276; disorderly conduct with possession of liquor, 139; violation of the national prohibition act, 95;

intoxication, 44; violation of license regulations, 139; violation of traffic regulations, 134; trespass, 133; petit larceny, 131; battery, 68; assault and battery, 57; vagrancy, 47. The persons arrested included representatives of 38 distinct nationalities and 144 different trades or professions.

There was only one homicide during the year. This was the case of a woman killed in an automobile accident. The driver of one of the two cars involved was convicted of manslaughter and sentenced to serve one year in the penitentiary.

Thirty arrests were made under the narcotic drugs import and export act, resulting in 17 convictions, 5 cases nol prossed, and 8 dismissed.

Sixty-two convicts were committed to the Canal Zone Penitentiary, with sentences aggregating 109 years, 5 months, and 5 days; and 51 were discharged, of whom 3 were pardoned. The number in confinement on June 30, 1923, was 91, with 1 additional released on bond pending an appeal of his case to the United States circuit court at New Orleans.

The number of men employed on the police force on June 30, 1923, was 173, as compared with 170 twelve months earlier. No change was made in the organization of the force or in the location of existing police stations. At the penitentiary, a guardhouse building, removed from the abandoned Army camp at Las Cascadas, was reerected to replace the old building used as a cell house, mess hall, kitchen, and workshop, the stockade was rebuilt, and a combined office and store-room erected.

In addition to routine police work, a continuous patrol of the harbors of Balboa and Cristobal was maintained, and police launches were maintained at Gamboa and Gatun for the patrol of the Chagres River and Gatun Lake. Details of police were continued at all canal locks and at the Gatun spillway. Motorcycle patrols for the enforcement of vehicle regulations were continued at Balboa, Pedro Miguel, Cristobal, and Gatun. There was a monthly patrol of the interior country to prevent squatting on public lands. Fifty-four persons, including 48 discharged convicts, were deported from the Canal Zone.

Common-jail prisoners were employed in clearing trails, on road repairs, and for janitor service about police stations. The labor performed by them was valued at \$23,530.71. Convicts were employed on road and municipal improvements, construction and maintenance work at the penitentiary, the manufacture and repair of prison clothing, and on the prison farm. Their labor was valued at \$28,645.54.

#### OFFICE OF THE DISTRICT ATTORNEY.

The district attorney prosecuted 217 criminal cases before the district court, 28 less than in the preceding year, with 141 convictions,

23 acquittals, 28 cases nol prossed, 24 dismissed, and 1 otherwise disposed of. There was a decrease in the number of burglary, robbery, and larceny cases, but a noticeable increase in violations of the narcotic drugs act. In addition to the cases disposed of, 12 cases were pending at the end of the year.

The district attorney represented The Panama Canal, the Panama Railroad Co., or the United States in 9 civil actions, of which 6 were still pending at the end of the year, either in the district court or on appeal. Three of these civil actions were admiralty cases.

#### DISTRICT COURT.

The district court held sessions at Ancon and Cristobal, and transacted the following business:

Cases pending at the beginning of the fiscal year: Civil, 79; probate, 137; criminal, 29. Cases filed during the year: Civil, 75; probate, 155; criminal, 140. Cases settled during the year: Civil, 101; probate, 232; criminal, 157. Cases pending at the end of the year: Civil, 53; probate, 60; criminal, 12.

Of the civil cases settled, 47 were decided, 52 dismissed, and 2 transferred. Of the criminal cases settled, 19 were acquitted, 104 convicted, 21 nol prossed, 8 dismissed, and 5 forfeited.

Number of marriage licenses issued, 520; number of deeds recorded, 9; total collections, \$3,436.05.

#### MARSHAL.

Writs of process received, 412; served, 333; parties not found, 79; fees collected, \$275.50; fees paid to witnesses, \$77; trust funds disbursed by order of the court, \$15,537; total trust funds handled during the year, \$138,102.20.

#### MAGISTRATES' COURTS.

*Balboa*.—Cases pending at the beginning of the year: Civil, 1; criminal, 1. Cases docketed during the year: Civil, 42; criminal, 1,831. Of the criminal cases disposed of, 44 resulted in acquittal, 1,475 in conviction, 23 were dismissed, and 80 held to the district court. Cases pending at the end of the year: 3 civil and 2 criminal. Total collections, \$10,279.85.

As provided for in the Executive order of May 10, 1911, petitions were made to the district judge for the commitment of 52 persons to the insane asylum for observation.

*Cristobal*.—Cases pending at the beginning of the year: Civil, 7; criminal, 5. Cases docketed during the year: Civil, 35; criminal, 1,298. Of the criminal cases disposed of, 116 resulted in acquittal, 1,041 in conviction, 47 were dismissed, and 100 committed to the



district court. Cases pending at the end of the year: Civil, 7; criminal, 6. Total collections, \$8,503.10.

#### FIRE PROTECTION.

The number of paid firemen employed on June 30, 1923, was 44, an increase of 2 over the preceding year, and in addition to these 17 volunteer companies were maintained. There were no changes in the organization of the department, nor in the number and location of stations. The equipment was increased by the purchase of a 1-ton Ford chassis (which was built into a hose wagon) and 2,000 feet of 2½-inch fire hose.

Periodical inspections of all Government buildings, docks, storehouses, yards, etc., were conducted by the department, fire hose and extinguishers were maintained in good condition, and the volunteers were drilled and instructed.

There were 58 fires in property of The Panama Canal, 15 in Panama Railroad property, 6 in United States Army property, 4 in United States Navy property, and 20 in private property. The total loss from fires during the year amounted to \$124,329.75, of which \$90,000 was caused by a fire on the S. S. *Roman Prince*, and \$12,132.35 by the destruction of an Army warehouse at Gatun. The estimated value of the Government property threatened by fire was \$764,913.47, and of the private property, \$8,940,307. The latter figure includes the estimated value of the S. S. *Roman Prince*, with its cargo, and other vessels on which fires occurred in Canal Zone waters.

#### PUBLIC SCHOOL SYSTEM.

The public schools of the Canal Zone were administered on established lines, with the introduction of minor improvements. There were 2 high schools and 5 elementary schools for white children, with 75 teachers at the close of the school year, and 7 elementary schools for colored children, with 39 teachers. The net enrollment in the white schools was 840 boys and 926 girls, and in the colored schools 1,053 boys and 957 girls. The two high schools graduated 25 pupils.

It has been the aim to provide in the white schools educational opportunities for American children comparable with those offered by any community in the United States. Adequate buildings have been provided, and competent teachers are employed under expert supervision.

The colored schools, owing to lack of funds, leave much to be desired. The buildings are overcrowded, and there is a waiting list of children who can not be admitted; the equipment is inadequate; and teachers are required to take care of more children than they

can properly instruct. Some improvement was effected during the year by the assignment of two new buildings, one at Cristobal and one at Gatun, and by the employment of 7 additional teachers. Although the instruction is not comparable to that in the white schools, it has been maintained at as high a level as in previous years.

With the opening of the next school year in October, it is planned to have one additional colored school at Gamboa, with approximately 40 pupils, and a new white school at Camp Gaillard, with 3 teachers and an estimated enrollment of 86 pupils.

The cost of maintaining the public schools of the Canal Zone is approximately \$200,000 per annum.

#### POSTAL SYSTEM.

Twelve postoffices were in operation at the end of the fiscal year, one new office having been opened at Fort Clayton on July 1, 1922. To expedite the handling of mail at France Field, arrangements were made to open a postoffice there on July 1, 1923.

The total receipts of the postal service were \$151,958.16, as compared with \$157,407.85 in the preceding year. Under the terms of the Taft agreement the Canal Zone post offices continued to purchase stamps from the Republic of Panama for 40 per cent of their face value at a total cost of \$41,484.91. While the service is burdened with this subsidy it will necessarily be operated at a loss.

Money orders were issued to the value of \$2,695,172.02, on which fees amounting to \$9,883.74 were collected. This total included deposit money orders, which have been issued since August, 1916, in lieu of postal savings certificates, to the value of \$803,200. The rate of interest on these deposit money orders was increased by authority of an Executive order dated December 6, 1922, from 2 per cent to 3 per cent. The total amount on deposit at all post offices on June 30, 1923, was \$470,731, as compared with \$438,180.05 on June 30, 1922.

The sale of Treasury savings certificates during the fiscal year totaled \$196,674.50. The sales fell off after October 1, 1922, due to the lower rate of interest paid on the new series, and again after January 1, 1923, probably due to the increased rate of interest paid on deposit money orders.

In the registry division of the post offices 229,177 letters and parcels were handled, of which 41,893 were official and accepted for registration without fee.

The Cristobal post office made 2,127 dispatches of mail to different foreign exchange offices and received 1,747 dispatches. The Balboa post office, which dispatches foreign mail to west coast Central and South American ports only, made 256 dispatches and received approximately the same number.

United States and foreign transit mail destined to the west coast of Central and South America, as well as mail exchanged between Cuba, Jamaica, and other insular governments with Colombia, Costa Rica, Venezuela, etc., is handled under the supervision of the director of posts. Mail from European countries routed via the Isthmus for transshipment is handled by the director of posts on behalf of the United States Post Office Department, whereas direct agreements are in effect between the director of posts and the postal administrations of Costa Rica, Australia, and New Zealand for the handling of their mails routed via the Isthmus.

The establishment of new direct shipping routes to the west coast of Central and South America has resulted in a decrease in the number of bags of transit mail received and dispatched under the supervision of the director of posts, but has increased the number of dispatches.

During the year mail was received on about 300 steamers from United States and foreign ports, and mail was dispatched to destination by approximately 400 steamers.

#### CUSTOMS.

The total number of vessels entered at the terminal ports of the canal, including vessels in transit, was 9,116, and the number cleared 9,113. These figures show an increase of approximately 50 per cent over the previous year.

All merchandise discharged at Cristobal or Balboa and destined to persons or firms in the Republic of Panama, not consigned to The Panama Canal, the Panama Railroad Co., or the United States Army or Navy, is in the custody of the Canal Zone customs until papers have been submitted from Panaman officials to prove that duty has been paid or waived. Permits for 7,366 releases were granted at Cristobal and for 139 at Balboa. Cargo landed at the latter port is usually forwarded by railroad to Panama, where it passes into the custody of the Panaman authorities.

A total of 1,693 free-entry requests was approved for employees of The Panama Canal or the Panama Railroad Co. and members of the United States Army or Navy, who have the privilege of importing articles for their personal use without payment of duty.

There were 16 arrests for violations of the customs regulations and 30 arrests for alleged violations of the opium act.

The number of cases of household goods inspected and sealed for employees returning to the United States was 1,025, and the fees collected for this service totaled \$713.50. There were 581 invoices certified during the year, on which the fees amounted to \$675.

The number of vessels requesting the detail of customs inspectors for the examination of passengers' baggage, etc., after the usual

working hours was 501, and the sum of \$4,165 was collected for this special service.

Customs inspectors checked 376 Chinese crews upon arrival and before departure to prevent the illegal landing of Chinese in the Canal Zone or the Republic of Panama. They also assumed responsibility for 513 Chinese passengers, besides 25 on hand at the beginning of the year, of whom 235 were admitted to the Republic of Panama on the authority of that Government, and the others, with the exception of 72 awaiting transportation at the end of the year, either proceeded on their journey or were returned to the port of embarkation. Bonds were accepted for the temporary release in the Canal Zone of 159 Chinese in transit.

#### SHIPPING COMMISSIONER—SEAMEN.

The shipping commissioner and his deputies have the same powers with respect to American seamen as shipping commissioners in the United States and American consuls in foreign ports. During the fiscal year there were 3,342 seamen shipped on American vessels and 4,119 discharged. The total amount of wages earned by seamen who were discharged at Canal Zone ports was \$141,665.35; the amount approved for deduction on account of advances, allotments, fines, slop chest account, etc., was \$41,632.51; and the balance of \$100,032.84 was either paid to them under the supervision of the deputy shipping commissioners or received on deposit for their account. There were 277 American seamen lodged and subsisted at the expense of the United States Government. Of this number 238 were returned to the United States at the expense of the appropriation for the relief of destitute American seamen, and the remaining 39 were signed on vessels and returned to the United States without expense to the Government. The wages and effects of four American seamen who died in the Canal Zone were handled by the shipping commissioner as provided by law.

#### ADMINISTRATION OF ESTATES.

During the year the estates of 65 deceased and insane employees of The Panama Canal and the Panama Railroad Co. were administered, and there were 28 estates in course of settlement on June 30, 1923.

#### RELATIONS WITH PANAMA.

Attached to the report of the executive secretary is a list of the subjects which gave rise to correspondence between the government of the Canal Zone and the Republic of Panama. They were exclusively of a routine nature.

A general revision of the existing agreements between the United States and the Republic of Panama embodied in the Hay-Bunau Varilla treaty, the so-called Taft agreement, and the interpretations that have been placed upon both, affecting the operation of the canal and the reciprocal rights and duties of the two Governments, has been desired for some time by both, and negotiations with that end in view are pending between the State Department of the United States and the Department of Foreign Relations of the Republic of Panama.

#### LAWS AND EXECUTIVE ORDERS.

Laws enacted and Executive orders issued during the year, applicable to The Panama Canal, are collected in an appendix to the report of the executive secretary.



## SECTION IV.

### ADMINISTRATION.

#### CHANGES IN ORGANIZATION AND PERSONNEL.

Following the reopening of the Canal Zone to agriculture and after consultation with the Department of Agriculture at Washington, the position of agronomist was created in the supply department, and Mr. Holger Johansen, formerly director of agriculture in Santo Domingo, was appointed to fill it. He is to develop plant introduction and propagation in the Canal Zone in cooperation with the Department of Agriculture, and to advise and assist local farmers. The appointment of an assistant agronomist was also authorized, but the position had not been filled at the end of the fiscal year. The abandoned poultry farm at Summit was assigned to the agronomist for experimental and plant development work and a small force of laborers was employed under his direction. The expense of this work will be charged against the revenues from public lands.

Capt. Alfred W. Hinds, United States Navy, was appointed marine superintendent of The Panama Canal, effective April 16, 1923, relieving Capt. Earl P. Jessop, United States Navy, who had rendered efficient service in the same position since April 15, 1920.

Effective October 17, 1922, Commander R. S. Culp, United States Navy, was appointed captain of the port, Cristobal, relieving Commander F. V. McNair, United States Navy.

Effective January 18, 1923, Commander M. E. Manly, United States Navy, was appointed captain of the port, Balboa, relieving Lieutenant Commander S. L. Henderson, United States Navy.

Effective September 1, 1922, Mr. John G. Claybourn was promoted from assistant engineer to superintendent of dredging, to succeed Mr. Joel M. Pratt, deceased June 11, 1922.

Effective May 28, 1923, Lieut. Col. Will L. Pyles, Medical Corps, United States Army, was appointed superintendent of Ancon Hospital, relieving Col. Louis T. Hess, Medical Corps, United States Army.

#### INCREASE OF FORCE.

There was a slight increase of force during the year, amounting to a little more than 1 per cent for gold employees and to a little more than 10 per cent for silver employees. This is amply accounted for

by the greater volume of business handled. The details of the increase are shown in the following table:

Department or division.	June, 1922			June, 1923		
	Gold roll.	Silver roll.	Total.	Gold roll.	Silver roll.	Total.
Operation and maintenance:						
Office.....	28	37	65	28	47	75
Electrical division.....	141	152	293	150	146	296
Municipal engineering.....	71	664	735	71	487	558
Lock operation.....	163	530	693	179	570	749
Dredging.....	130	597	727	152	886	1,038
Mechanical.....	319	553	872	340	661	1,001
Marine.....	154	360	514	156	472	628
Fortifications.....	39	234	273	14	169	183
Supply:						
Quartermaster.....	139	897	1,036	142	962	1,104
Subsistence.....	6	79	85	6	80	86
Commissary.....	164	742	906	164	766	930
Cattle industry and plantations.....	6	133	139	6	205	211
Hotel Washington.....	9	83	92	8	93	91
Transportation.....	32	147	179	36	157	193
Accounting.....	180	7	187	182	8	190
Health.....	211	705	916	222	692	914
Executive.....	499	243	742	476	264	740
Panama R. R.:						
Superintendent.....	46	221	267	47	254	301
Transportation.....	67	99	166	64	108	172
Receiving and forwarding agent.....	64	625	689	78	924	1,002
Coaling stations.....	85	515	600	62	477	539
Total.....	2,553	7,623	10,176	2,583	8,418	11,001

The pay roll for July, 1922, aggregated \$915,366.93, and for June, 1923, \$970,184.43, an increase of approximately 6 per cent.

#### WAGE ADJUSTMENTS.

*Gold employees.*—Such wage adjustments as were made during the year were subject to the clause in the current appropriation act reading:

No part of the foregoing appropriation shall be used to pay the salary for any position at a rate in excess of the rate in effect for such position on June 30, 1921.

Subject to this limitation, the established rule was followed that local wages should be higher by not more than 25 per cent than wages for the same or similar work in the public service in the United States or in private employ when no comparable job could be found under the Government. The granting of this increment has always been limited by requirements of suitable coordination within the service, the full 25 per cent not being allowed for isolated groups or individuals if its application would result in rates not properly commensurate with the service performed in comparison with pay allowed other employees.

There were few changes during the period covered by this report. The majority of the local rates for skilled trades are based on the navy-yard rates. These were not revised until May 1, 1923, and since it appeared from information received on the Isthmus that the revi-

sion of that date would not apply to the entire schedule in the navy yards and would be modified on or about July 1, 1923, it was considered advisable to make no changes here until a final decision had been arrived at by the Navy Department, provided, however, that the eventual changes should be made retroactive to coincide with the corresponding changes in the navy yards.

The so-called construction rates in the building trades were revised effective July 1, September 1, and November 1, 1922, and March 1 and May 1, 1923, resulting in increases, subject to the limiting provision in the appropriation act, but this affected only a small number of men, as there was little new construction during the year. The maintenance rates for the building trades are based on the navy-yard scale and remained unchanged.

The rates for carman, carman leading man, oxyacetylene operator, car inspector, and signal maintainer were revised effective July 1, 1922, in accordance with decisions of the United States Railroad Labor Board, resulting in slight reductions.

The rates for pattern makers were revised upward on May 1 and again on June 1, 1923.

With these exceptions there were no changes during the year in basic rates. Numerous individual cases, not based directly on rates paid for similar employment in the United States, were handled administratively.

Following the readjustments made during the preceding fiscal year, during which the establishment of charges for rent, fuel, etc., reduced the net income of the employees, the fiscal year ended June 30, 1923, was a period of relative peace in the matter of compensation. Upon the levying of the rent and associated charges, the administration stated that it would stand squarely behind the 25 per cent increment, subject to the limitations of coordination, including the legislative increase or bonus allowed in the United States. Although the payment of the second half of the bonus has not been made, on account of objections of the House Committee on Appropriations, the efforts to secure its payment have been appreciated. The policy and methods of wage adjustments are well understood by the employees, and, coupled with complete publicity, have developed an attitude of mutual confidence. The system is excellently adapted to maintaining a coordinated wage scale for employment in the operation of the canal and its varied allied activities.

*Silver employees.*—There has been no change in the system of determining the basic rate for laborers and the related rates for other alien employees in subordinate positions and carried on the silver pay roll, which are adjusted quarterly to meet fluctuations in the cost of living.

Effective July 1, 1922, the rate for common labor was reduced from 21 cents to 20 cents an hour, the higher hourly rates were reduced by 1 cent to correspond, monthly rates were cut \$2.50, and per diem rates reduced 10 cents. Since then, although the quarterly analysis of commissary prices for October 1, 1922, and for January 1 and April 1, 1923, indicated that the cost of living was still declining, no further reductions have been made. Prices began to rise again in the last quarter of the fiscal year, and this was reflected in the analysis for July 1, 1923.

The following statement shows the relative increase of living costs over 1914, the mean hourly rate indicated by such increase, and the hourly rate adopted, for each quarter since February 1, 1920, when the present method of adjusting silver wages was first adopted:

Date.	Living cost over 1914.	Indicated rate.	Rate adopted.
	<i>Per cent.</i>	<i>Cents.</i>	<i>Cents.</i>
Feb. 1, 1920.....	71.58	21.25	21
Apr. 1, 1920.....	73.09	21.47	21
July 1, 1920.....	87.77	23.18	23
Oct. 1, 1920.....	89.12	23.40	23
Jan. 1, 1921.....	79.28	22.19	23
Apr. 1, 1921.....	72.399	21.33	23
July 1, 1921.....	68.977	20.91	22
Oct. 1, 1921.....	62.59	20.12	21
Jan. 1, 1922.....	59.98	19.82	21
Apr. 1, 1922.....	55.46	19.24	21
July 1, 1922.....	50.039	18.57	20
Oct. 1, 1922.....	47.81	18.29	20
Jan. 1, 1923.....	45.816	18.04	20
Apr. 1, 1923.....	44.073	17.83	20
July 1, 1923.....	46.909	18.18	20

#### GRIEVANCE BOARD.

The board organized in July, 1920, to hear grievances and complaints of American employees had only 3 cases brought before it during the year, as compared with 5 in 1922, and 32 in 1921. The assistant engineer of maintenance and the head of the division in which the complaint originates represent the administration on this board, and the organized employees are represented by two delegates. The functions of the board are advisory. It conducts hearings in cases which are referred to it, and submits its recommendations to the governor.

#### PUBLIC AMUSEMENTS AND RECREATIONS.

The bureau of clubs and playgrounds, subsidized by The Panama Canal as explained in the section on business operations, conducted 5 clubhouses and 1 boathouse for American employees and their families, and 5 clubhouses for alien colored employees. The clubhouses operate soda fountains and lunch counters, deal in magazines, candy, tobacco, photographic and athletic supplies, postal cards and

souvenirs, exhibit moving pictures, stage varied entertainments, maintain bowling alleys, and pool and billiard tables. These activities are not only self-sustaining but yield a considerable net revenue. The bureau also maintains free reading rooms, kindergartens and childrens' playgrounds, and supervises and promotes such athletic sports as swimming, baseball, boxing, wrestling, handball, and tennis. The clubhouses are community centers, patronized by all ages and both sexes, and used for the most diverse social activities. On account of the development of independent and voluntary organizations, they are less essential now to adult employees than in the construction days, but they contribute materially to the health and happiness of the children and young people, who are now as numerous as in older communities, and for whose energies some safe outlet must be provided.

#### RECRUITING, PURCHASES, AND SALES IN THE UNITED STATES.

The number of persons tendered employment through the Washington office was 542, of which number 282 accepted. The corresponding figures for 1922 were 448 and 173. Purchases were heavier than in the previous year, the number of orders placed by the Washington office being 5,381 for a total value of \$2,351,048.33, as compared with 2,629 orders involving an expenditure of \$1,169,248.68 in 1922. The sale of scrap and surplus material to the value of \$448,888.14 was also handled by this organization.

In addition to these and other routine duties, the Washington office was required to represent The Panama Canal on the various boards and coordinating committees appointed by the chief coordinator and the director of the bureau of the budget. The work of these boards and committees has absorbed a large share of time of executives and clerical force.



## SECTION V.

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### FINANCIAL AND STATISTICAL STATEMENTS.

This section contains financial statements of The Panama Canal (Tables 1 to 58) and statistical statements of canal traffic (Tables 59 to 63). For convenience of cross reference the original numbering of the financial statements quoted from the annual report of the auditor of The Panama Canal has been preserved, although Tables Nos. 23, 35, 40, 41, and 45 to 58 have not been printed. A complete list of the tables, including those omitted, follows:

- Table No. 1. General balance sheets.
- Table No. 2. Balances in appropriation and fund accounting.
- Table No. 3. Appropriations by Congress.
- Table No. 4. Status of authorized bond issue.
- Table No. 5. Cash receipts and disbursements for account of the United States.
- Table No. 6. Payments made by fiscal officers.
- Table No. 7. Receipts and disbursements by collector.
- Table No. 8. Collections repaid to appropriations and to individuals and companies.
- Table No. 9. Collector's special deposit account.
- Table No. 10. Audited pay rolls.
- Table No. 11. Accounts receivable, registered, and outstanding.
- Table No. 12. Comparative statement of accounts receivable.
- Table No. 13. Comparative statement of accounts payable.
- Table No. 14. Statement of defense capital expenditures to June 30, 1923.
- Table No. 15. Canal fixed property.
- Table No. 16. Canal transit equipment.
- Table No. 17. Business property, equipment, etc., by divisions.
- Table No. 18. Business fixed property.
- Table No. 19. Canal business equipment.
- Table No. 20. Status of public works in Panama and Colon.
- Table No. 21. Material and supplies.
- Table No. 22. Receipts, issues, and transfers of stores.
- Table No. 23. Comparative statement of store balance.
- Table No. 24. Gross canal expenses, earnings, and net expenses.
- Table No. 25. Canal revenues.
- Table No. 26. Business expenses, revenues, and net revenues.
- Table No. 27. Comparison of expenses and revenues and surplus by years to date.
- Table No. 28. Pay-roll deductions from employees for rent, etc.
- Table No. 29. Reserves for depreciation.
- Table No. 30. Reserves for repairs.
- Table No. 31. Reserves for gratuity.
- Table No. 32. Cost of production and distribution of electric current.
- Table No. 33. Cost of production and distribution of water.

- Table No. 34. Dredging operations.
- Table No. 35. Money orders issued and paid by Canal Zone and Canal Zone orders paid by other administrations, fiscal years 1907 to 1923, inclusive.
- Table No. 36. Monthly money-order business of Canal Zone postal service.
- Table No. 37. Audited revenues, fiscal years 1907 to 1923, inclusive—Postal Service.
- Table No. 38. Postal revenues, fiscal year 1923.
- Table No. 39. Postal savings and deposit money-order transactions, fiscal year 1923.
- Table No. 40. Income, bureau of clubs and playgrounds, fiscal year 1923.
- Table No. 41. Expenses, bureau of clubs and playgrounds, fiscal year 1923.
- Table No. 42. Income and expenses, bureau of clubs and playgrounds, fiscal year 1923.
- Table No. 43. Balance sheet, bureau of clubs and playgrounds, June 30, 1923.
- Table No. 44. Coupons books issued, sold, etc., fiscal year 1923.
- Table No. 45. Amounts of injury payments made during the period August 1, 1908, to June 30, 1923.
- Table No. 46. Injury and death payments September 7, 1916, to date.
- Table No. 47. Number of injuries, by extent of disability, for each division or department.
- Table No. 48. Nature of non fatal cases, by department or division.
- Table No. 49. Number of cases and compensation paid, classed by injury.
- Table No. 50. Class of work being performed by employees at time of injury, by departments and divisions.
- Table No. 51. Cause of injuries, by departments and divisions.
- Table No. 52. Cost of commissary supplies purchased and sold during fiscal year 1923.
- Table No. 53. Collections made from other than employees.
- Table No. 54. Collections of Panama Railroad land rents.
- Table No. 55. Panama Railroad accounts payable vouchers registered during fiscal year 1923.
- Table No. 56. Statement of work of time inspection division.
- Table No. 57. Statistics of silver quarters, exclusive of Barracks and Las Cascadas.
- Table No. 58. Report of work performed by pay roll section.
- Table No. 59. Summary of commercial traffic through The Panama Canal during the fiscal year 1923 and since its opening to commercial traffic.
- Table No. 60. Number of commercial vessels of various nationalities passing through The Panama Canal 1915-1923.
- Table No. 61-A. Origin and destination of all commercial cargo passing through The Panama Canal from the Atlantic to the Pacific during the fiscal year 1923.
- Table No. 61-B. Origin and destination of all commercial cargo passing through The Panama Canal from the Pacific to the Atlantic during the fiscal year 1923.
- Table No. 62-A. Tons of cargo carried by commercial vessels passing through The Panama Canal from its opening to June 30, 1923, by fiscal years.
- Table No. 62-B. The Panama Canal net tonnage of vessels by nationalities passing through The Panama Canal from its opening to June 30, 1923, by fiscal years.
- Table No. 63. Statement showing the number of vessels, the Panama Canal net tonnage, tolls assessed, and tons of cargo carried by vessels of the principal nations passing through The Panama Canal during the first nine years of its operation.

#### NOTES IN EXPLANATION OF FINANCIAL STATEMENTS.

*Table No. 1.*—There are two items on the general balance sheet, on the asset side, in addition to the ones shown in the annual report last year; (a) Theoretical interest accruals; (b) Undistributed business capital. The theoretical interest, which amounts to \$104,885.79,

represents 3 per cent on the amortization and depreciation reserves as of June 30, 1922. The undistributed business capital, amounting to \$1,663,000, consists of a part of the general stores, working cash and accounts receivable which is chargeable to the various business divisions. This item is shown more in detail in the table covering business property.

The canal capital account has been increased by \$75,000, covering appraised value of Cristobal incinerator which was transferred from business property to the health department. Business capital has been reduced by \$1,180,479.74, which includes the incinerator just referred to and several other items which were charged off as canal defense expenditures. Reference will be made to the items in detail under canal defense expenditure table.

Comparisons of the figures in the other accounts with last fiscal year will be made under the various tables covering same.

*Table No. 2.*—This table is the same form it was in last year, showing the available cash in the Treasury and in the hands of the fiscal officers, together with the accounts receivable and Treasury transfers which are repayable to the appropriations. This statement also shows the liabilities and encumbrances. Last year the accounts receivable amounted to \$1,266,323.28, against \$786,847.09 this year, a reduction of almost \$500,000. The stock of store material on hand has also been considerably reduced but this is only a temporary reduction, as the requisitions and orders in the process of being filled are already beginning to increase the store stock. The greater part of the balance in the old appropriations, "Construction and equipment," "Panama Canal fund," and "Canal connecting Atlantic and Pacific Oceans," is being released for transfer to the surplus fund.

*Table No. 3.*—This table shows the total amount appropriated for constructing The Panama Canal; the total amount appropriated to date, covering the annual payment of \$250,000 to the Panaman Government; and the amounts appropriated year by year for the maintenance and operation, sanitation, and civil government of The Panama Canal. This includes the appropriation for the fiscal year 1924.

*Table No. 4.*—This table is an exact copy of the one in last year's annual report showing the balance available for appropriation within the limit of the cost of the canal and the authorized bond issue, amounting to \$2,056,975.31.

*Table No. 5.*—This table shows the amount of available appropriated cash in the Treasury, together with the cash in the hands of the three principal fiscal officers, June 30, 1922, and cash receipts and disbursements during the fiscal year, and the cash on hand June 30, 1923. It shows the amount appropriated for expenditure during the fiscal year 1923 and the transfers of cash between these four

agencies, also the amounts collected, showing separately the collection of business funds, which were repaid to the appropriations, the canal revenues which were deposited as miscellaneous receipts, and the amounts deposited to cover the payment of bills. On the disbursement side this statement shows the amounts covered into the Treasury as miscellaneous receipts and the amount transferred to the surplus fund. It also shows the disbursements from the various appropriations by the Treasury, disbursing clerk, and the paymaster, and the use of security deposits in the payment of bills. The Treasury furnished the other fiscal officers with cash amounting to \$5,396,500, and made settlements by transfer, amounting to \$444,539.45, a total disbursement of \$5,841,039.45. Against this amount the other fiscal officers supplied the Treasury with cash amounting to \$737,677.74, and the Treasury collections repayable to appropriation amounted to \$1,658,595.41, a total of \$2,396,273.15, indicating that The Panama Canal called on the Treasury for appropriated funds, during the year, to the extent of approximately three and one-half million dollars.

*Table No. 6—Paymaster.*—Disbursements to the amount of \$15,425,240.57 were made during the year by the paymaster. Of this amount the sum of \$5,605,129.36 was on account of the Panama Railroad Co. Employees on the gold roll of The Panama Canal were paid \$5,211,430.77 and those on the silver roll \$3,349,096.46, while the sum of \$1,259,583.98 was paid on miscellaneous vouchers.

Collections on the pay rolls amounted to \$2,857,917.17. Of this amount the sum of \$2,232,124.65 was collected for coupon books, the remainder being for miscellaneous items. Of the total collections on pay rolls the sum of \$2,263,150.98 was disbursed by the paymaster, Panama Canal, the balance, \$594,766.19, being transferred to the collector's accounts.

The American Foreign Banking Corporation was continued as a Government depository. During the year the sum of \$6,587,335 Panama Railroad funds, was transferred to the treasurer, New York. This amount included \$757,335 mutilated currency, due to rapid deterioration of paper money through climatic conditions. The cash situation on the Isthmus was satisfactory during the year.

The sum of \$500,000 was brought down by the paymaster from the United States during the year.

*Tables Nos. 7, 8, and 9—Collector.*—The collections repaid to appropriations amounted to \$6,329,372.72; miscellaneous receipts, \$17,885,044.49; security deposits, \$22,487,430.73 (see Table No. 5); making total cash received, \$46,701,847.94. Besides this the collector handled the cash in connection with the clubhouse fund, trust funds, postal savings fund, money order funds, interest and Treasury savings certificates, a cash turnover of approximately \$2,400,000. The



collections for the account of the Panama Railroad Co., amounted to \$11,802,865.46.

Last year the erpayment to appropriations amounted to \$7,730,-187.92, and the deposits as miscellaneous receipts, \$11,477,312.91. The collections for the Panama Railroad Co. last year amounted to \$13,219,897.45.

The large increase in the total amount of cash passing through the collector's office was due to the increase in tolls collected.

*Table No. 10.*—The total amount of salaries and wages paid during the year was \$8,627,698.19, as compared with \$9,731,338.82 during the fiscal year 1922. Of the amount paid during the fiscal year 1923, \$4,224,305.91 was for salaries and \$4,403,392.28 for wages.

The amount paid from the appropriation for maintenance and operation was \$7,081,157.10. Of this amount \$4,072,300.24 was in connection with transit divisions, and \$2,974,976.15 for business divisions. The sum of \$750,254.46 was paid to employees of civil government, and \$796,286.63 to the employees of the health department.

*Table No. 11.*—This table shows that there was an increase of almost five thousand bills registered and also shows the gradual increase in the bills for tolls during the twelve months, ranging from \$1,094,132.67 to \$1,972,262.99.

*Table No. 12.*—This is a comparative statement of accounts receivable outstanding June 30. The amount outstanding on June 30, 1923, is over \$400,000 less than last year. There is also a reduction of approximately \$78,000 in the bills against the Panaman Government in connection with the maintenance and operation of the water system.

*Table No. 13.*—This is a comparison of the accounts payable outstanding. The amount outstanding June 30, 1923, is \$228,892.80 more than last year, most of which is in United States invoices for material purchased.

The number of Isthmus vouchers registered is 2,203, covering payments amounting to \$3,622,852.04.

*Table No. 14.*—The amount chargeable to national defense was increased during the past year by \$1,105,479.74. The old Washington Hotel restaurant, which was set up in the accounts at \$2,000, and the Balboa Heights Ladies' Restaurant, which was set up at \$1,500, were closed and the amount which was set up under the heading of business property, as their possible value as restaurants, was written off to canal defense expenditures.

The Balboa incinerator, which was set up under the heading of business property at the value of \$100,000 and which is not being operated, was also written to the debit of the canal defense account.



Pier No. 6, Cristobal, the only Panama Canal pier at the Atlantic terminals, was set up under business property at its cost of construction, \$2,201,979.74. It was decided last year that this amount is greatly in excess of its commercial value to-day, and therefore the sum of \$1,001,979.74 was written off to the canal defense account and the dock left in the business account at a fair value of \$1,200,000.

*Table No. 15.*—Additions to canal fixed property amounted to \$17,537.99. Besides this the Cristobal incinerator, valued at \$75,000, was removed from business property to canal fixed property.

*Table No. 16.*—The additions to canal transit equipment, which resulted in the expenditure of funds, amounted to approximately \$20,000. The crane boat *La Valley* was rebuilt and the sum of \$10,000 was set up as increased valuation. The other increases are minor ones in connection with floating equipment, machinery, and tools.

The withdrawals amount to \$213,259.99, the principal items being the tug *Empire*, which was sold for \$9,300; supply boat *No. 1*, \$10,000; dredge *No. 84*, \$50,000. A number of launches and barges have been retired for sale and the book value removed from the canal equipment account.

*Table No. 17.*—This table shows the entire working capital of the business divisions, made up of fixed property, equipment, stores, cash, etc. The changes in fixed property are shown more in detail in Table No. 18, and the additions and withdrawals of business equipment are shown in detail in Table No. 19.

Under the heading of stores are included the material and supplies drawn by the divisions to be used in their work, as well as the stock of supplies for sale, such as fuel oil, stationery, and office supplies carried by The Panama Canal Press, sand and gravel stock at Gamboa, and the value of general store stock shipped to the United States for sale which has not yet been disposed of or for which the proceeds have not yet come into the accounts.

Under the heading of work in progress are carried the expended labor, material, and supplies, etc., on uncompleted work for which bills will not be rendered until the work is completed.

The undistributed business capital, which has been charged to the business divisions during the past year, amounting to \$1,663,000, consists of store material, accounts receivable, and cash; that is, the value of store material carried in the general storehouse for the future use of business divisions and the ready cash carried by the fiscal officers to meet the claims of the business divisions.

The accounts receivable included in this item represent the unpaid business division bills. These amounts are charged to the individual divisions in order to arrive at the interest on the investment that

each one should earn. The amount is made up of stores, \$830,000; accounts receivable, \$601,000; and cash, \$232,000.

*Table No. 18.*—This table shows the detail of business fixed property by divisions operating it. It also shows the capital additions and the reductions during the year.

The capital additions for which appropriated funds were used cost approximately \$120,000, of which the surge tank at Summit, \$27,666.32; new oil pipe line to Dock No. 6, Cristobal, \$58,510.41; and the new sprinkler system in the Hotel Tivoli, \$23,997.35, are the principal items. The sprinkler system was started in last fiscal year but the item has been set up in the capital account in the fiscal year 1923.

With reference to the reductions, the capital value of the Balboa incinerator, \$100,000, was charged off to national defense and the value of the Cristobal incinerator, \$75,000, was transferred to transit fixed property. The valuation of Pier No. 6 was reduced by \$1,001,-979.74, which was charged to canal defense expenditure. The other reductions are due to minor sales and transfers of property as explained in the table.

*Table No. 19.*—This table shows the detail of canal business equipment in use by business divisions at the beginning and end of the fiscal year and the additions and withdrawals during the year. New machinery and tools were acquired at a cost of approximately \$55,000. Under the heading of withdrawals are listed the monthly depreciation reductions. This equipment is being depreciated on the monthly balance which is equivalent to writing its value into the operating expenses in a given time. The depreciation is deducted from the account and new purchases are charged to the account every month. This method is entirely different from the regular depreciation method where the original cost of the property remains intact and the monthly and annual depreciation is set aside in another account.

*Table No. 20.*—This statement shows the investment in public works in the cities of Colon and Panama. It also shows the amount expended by the United States Government in maintaining and operating the water works, sewers, and streets in the two cities; the amount of interest which has been deposited in the Treasury, and the repayments which have been made out of the water rent collections. The water rentals have never been quite sufficient to cover the cost of operation and maintenance and to pay interest and amortization, which resulted in the rendition of bills against the Panaman Government for the deficit, in accordance with the contract. During the past year the Panaman Government has paid those deficit bills so that the amount now outstanding is very small.

*Table No. 21.*—This table shows the value of material and supplies on hand June 30, 1923, as compared with last year. The reduction in the stock carried in the general storehouse at Balboa approximates \$2,000,000. A large amount of this reduction consists of surplus stock which we sent to Hoboken for sale, and the difference between its value and the sale price set for it was charged to the reserve for price reduction, of which there was a balance of \$1,524,-018.78 last year and which now has a balance of \$888,723.15. As explained last year, this account is used to control the price fluctuation. The present store stock is below normal but the requisitions and orders which are in transit will considerably increase the stock during the next year.

*Table No. 22.*—This statement shows the value of stores received and disposed of by months during the past fiscal year and the balances on hand at the beginning and close of the period. The purchases, which were handled through the storehouse accounts, amounted to \$1,935,571.79, and the purchases delivered direct to divisions, \$625,588.09; material manufactured and taken into stock amounted to \$315,457.35. The value of material issued was \$2,978,281.21 and the sales amounted to \$1,399,839.74. The regular store stock on hand July 1, 1922, was changed from the amount shown last year (\$5,510,260.15) by making a correction of \$73.06 and adding the value of material in the Corozal storehouse, \$404,098.85, and sand and gravel, \$260,955.03; making the new balance, \$6,175,387.09. The value of material on hand July 1, 1923, is shown in this statement as \$4,323,477.81, to which should be added the value of scrap and obsolete material (\$312,821.72), shown in Table No. 23 which is not printed, making a total of \$4,636,299.53. This figure includes the value of fuel oil, \$140,204.13; stationery and office supplies at The Panama Canal Press, \$101,792.63; sand and gravel, \$239,776.07; and material sent to Hoboken for sale, \$347,942.47; a total of \$829,715.30, which is carried under the heading of business property. By removing this figure from the balance it leaves the amount of transit material on hand as \$3,806,584.23.

*Table No. 23.*—This table shows the value of material and supplies on hand, by commodities, compared with last fiscal year.

*Table No. 24.*—*Canal expenses and earnings.*—The gross cost of operation and maintenance was \$10,308,723.06, as compared with \$10,407,784.23 last year. The earnings credited against the gross expense amounted to \$2,617,945.50, as compared with \$2,488,766.60 for the prior year. The net expense was \$7,690,777.56, which is \$228,240.07 less than last year.

Attention is called to the reduction in the expenditures by the executive and accounting departments and the Washington office. The net civil government expense shows an increase of approximately

\$10,000 over last year, while the net health department expense shows a decrease of approximately \$75,000.

The net marine division expenses were \$525,804.77 against \$617,958.11 last year, a reduction of over \$90,000. The pilotage revenues at Cristobal exceeded the expenses by \$22,424.54, and the cost of handlinglines was \$13,781.88 less than the fixed charges for that work. Roughly speaking, the difference between the expenses last year and this are as follows:

The cost of operating the port captains' offices shows an increase of approximately \$60,000 (the Balboa port captain's expenses included approximately \$40,000 for maintenance of signal stations and moorings in the cut). The net pilotage expense shows a decrease of approximately \$100,000, and the net cost of operating tugs and launches shows a decrease of approximately \$100,000.

Lock operations cost \$1,128,817.27 in 1923 against \$1,120,419.10 the prior year. The expenditure at Gatun locks was \$349,525.66, compared with \$346,151.06 for the fiscal year 1922. The expense at the Pedro Miguel locks was \$406,501.86, compared with \$261,750.73 last year. This difference is due to biennial overhauling. The expenditure at the Miraflores locks was \$372,789.75, compared with \$512,517.31 last year. This difference is also due to repairs.

Channel maintenance shows an increase of approximately \$150,000. The net amount expended in 1923 was \$2,111,947.25, compared with \$1,960,793.15 in 1922.

The charge made directly against the appropriated funds for water for municipal purposes was \$69,205.86, compared with \$64,009.27 last year. This represents the cost of water system expense for fire protection, water for street cleaning, sprinkling lawns, etc.

Under the heading of maintenance of laborers' quarters there is a charge of \$50,705.29 which represents the excess of the expenses of housing silver employees over the rentals collected from them. The sum of \$116,000 was appropriated for maintaining these quarters.

*Damages to vessels.*—The total amount of settlements made on the Isthmus during the fiscal year on account of damages to commercial vessels for which The Panama Canal assumed liability, was \$2,342.85, \$1,996.59 of which was for damages in the locks and \$346.26 in the canal. In addition to this, Treasury transfer was made to cover the damage to one Government-owned vessel, the U. S. S. *Thornton*, amounting to \$1,260.62, making the total cash settlements \$3,603.47. Besides this, damages were repaired by The Panama Canal to avoid claims. The cost of making these repairs was \$299.78 for vessels damaged in the locks and \$2,888.04 for vessels damaged in the canal, a total of \$3,187.82, making a grand total for all damages to vessels of \$6,791.29.



In addition to the above, an expense of \$17,618.37 was incurred in connection with the damage in the canal to the *S. S. G. Harrison Smith* on April 15, 1923. All data in connection with this claim had not been fully accounted for at the close of this fiscal year and this item will show in the accounts for the fiscal year 1924.

*Table No. 25—Canal revenues.*—Tolls and other revenues deposited in the Treasury during the fiscal year 1923 amounted to \$17,691,844.06, as compared with \$11,385,592.32 last year. The increase in tolls alone was \$6,314,247.05. These revenues exceeded the net canal expenses by \$10,001,066.50, which amount has been carried to the surplus fund.

*Table No. 26—Business expenses and revenues.*—This table shows the amounts used by the various business divisions in carrying on their operations, the revenues derived from such business, and the profit or loss compared with what 3 per cent on the investment would amount to; that is, 3 per cent on the value of property, equipment, stores, etc., used by the divisions in carrying on their work.

The large profit of the electric light and power system is due partly to rates charged for current and power in excess of the actual cost at the time the rates were made, and partly to reductions in the operating expenses since the present rates were established. Changes were made in the method of charging for electric current, effective April 1, 1923, which will reduce the revenues somewhat.

Electrical work shows a loss of \$15,703.44. This is due to the very small amount of work that this division has at the present time against the expense of a steady force which it is necessary to maintain in order to meet emergency demands in this line of work.

The profit in the telephone system operations represents the difference between the actual overhead charged to this account and the offsetting revenue from fixed surcharges.

The expenses of operating the water system were reduced by an amount which would bring a net revenue sufficient to cover the 3 per cent on the investment. This amount (\$69,205.86) was charged to transit operations under the heading of water for municipal purposes. On the basis of the regular charge for metered water and the maintenance of fire plugs, etc., this amount would undoubtedly be considerably greater, but it was thought best not to show a profit in the water-works system in excess of the 3 per cent, at the expense of the appropriation.

The total revenue from operation of shops and dry docks was \$2,289,953.18, compared with \$2,073,222.16 last year. The revenue from the dry dock at Balboa amounted to \$68,145.42 and at Cristobal, \$12,129.04. The profit was \$100,184.33, compared with \$97,988.67 last year.



Under docks, wharves, and piers, the expense consists of repairs to Dock 18 at Balboa and Dock 6 at Cristobal, and the revenue is the wharfage paid at those docks by commercial ships. Dock 6 at Cristobal is used principally for oiling vessels, in which case only 50 per cent of the regular wharfage charge is made. Dock 18 at Balboa does not bring in much revenue on account of so few ships using the Pacific terminals. The 3 per cent interest on the investment, which is shown as \$91,135.60, is based on the original cost. Since 50 per cent of the cost of Dock 6 has been written off, the interest will amount to considerably less.

Under the heading of fuel oil plants, the expenses in connection with handling fuel oil cover the operations of the oil pumping plant, together with maintenance of pipe lines and Panama Canal tanks, and the revenue is derived from a charge of 4 cents per barrel for pumping in and out. Under fuel oil sales, the debits represent the value of the oil sold and the revenues the amount received at a fixed price per barrel. Very little oil is sold to outsiders. The tank rentals last year amounted to more than \$24,000, against \$12,268.44 this year. This difference is accounted for by one tank being released by the United States Shipping Board, which reduced the revenue \$9,000, and another one by the Navy, and also a reduction in the rate charged the Navy per month for two other tanks they have.

Business storehouse expenses include the value of material sold and material issued to business divisions, together with a proportion of the cost of operating storehouses, purchasing and accounting for materials and supplies, and proportionate overhead expenses. The revenues consist of the sale price of that material, plus the fixed surcharge.

The Panama Canal Press shows a loss of \$973.87 over and above the interest on the investment. An explanation is necessary here because these figures should not be a reflection on the efficient operation of the printing plant. The Panama Canal Press is operated entirely different from any other printing plant. It is required to absorb all expenses, including depreciation and repairs of buildings, equipment and other property, and its proportion of the overhead expense of The Panama Canal. The necessary repairs to an old frame building alone become a burden to an operation of this size. The account, as it stands, includes the operation of the stationery and office supplies store of The Panama Canal. The other stores on the Isthmus receive allotments from the appropriation to operate with, but the printing plant, including the stationery store, has not been allotted any funds on account of being carried as a business unit. The stationery and office supplies are issued to the other divisions at c. i. f., plus the usual surcharge to cover handling expenses, and the manufactured output of the printing plant is also issued and sold at actual cost of

labor and material, plus a surcharge to cover undistributable expenses. During the past year The Panama Canal Press made an actual saving on indirect labor of approximately \$2,000, but this and other economies are more than offset by the close margin on which the bills are rendered above actual direct cost. Accounting studies are being made to fix the price of stationery and office supplies and to charge for the manufactured output at rates which will cover all the operating expenses and leave a profit, besides sufficient to cover interest on the investment. If an allotment were made to the printing plant for the operation of the stationery store, and if the manufacturing output were charged out at rates comparable to the ones used by other printing plants, this unit would show a large profit.

In connection with gold quarters, the expenses include the cost of operating and maintaining these quarters, together with the 2 per cent depreciation charge on their value. The net revenues do not equal the 3 per cent amortization because a part of this fund was used for extraordinary repairs in accordance with authority granted the chief quartermaster.

The expenses in connection with the operation and maintenance of silver quarters were reduced to equal the revenues without showing any profit or interest on the investment. The amount so reduced (\$50,705.29) was charged to canal operations, as stated before.

The operations of the district quartermasters show a loss of \$30,-168.79. It has not been determined where the leakage is, but studies have been made for several months to avoid this difference between the expenses and the revenues.

Land rentals show an excess of revenues over expenses of \$8,057.13. The new agricultural section of the supply department, under the agronomist, is being operated through this account.

The profit on sand and gravel does not equal the 3 per cent interest on the investment, but the interest is calculated principally on the value of the sand and gravel itself, and as this material only moves in large quantities periodically when there is considerable construction going on it is difficult to make it produce interest on itself without making the rates too high.

The sale of Government property includes the sale of such items of equipment and property as are not handled through the general stores, such as the sale of buildings. In some cases the property has no value on the books, having been written off to canal defense or depreciated out, and when there is no expense of making the sale the total proceeds pass to miscellaneous receipts through this account. Some of the larger items included in this account during the past year are the sale of dredge *No. 84* for \$50,000; tug *Empire* for \$9,300; S. S. *Caribbean* for \$60,000; supply boat *No. 1* for \$10,000; railroad cars

and trucks, \$46,000; the balance of it consists of a number of smaller items.

The total profits on these business operations for the fiscal year amounted to \$1,140,642.50. The 3 per cent interest on the investment involved amounts to only \$675,185.80; \$58,655.61 of the profit, representing interest on Panaman Government public works, has already been covered in as miscellaneous receipts and the balance will be covered in by Treasury transfer.

*Table No. 27.*—This table is interesting this year in that the excess of revenues over expenses in the operation of the canal proper to June 30, 1922, amounts to \$3,466,574.69, and that the excess in the fiscal year 1923 alone amounts to \$10,001,066.50, making the total to date \$13,467,641.19. The profits from business operations to June 30, 1922, had amounted to \$1,423,568.70, whereas the profits for the year 1923 alone amount to \$1,140,642.50, making the total to date \$2,564,211.20, a grand total of surplus from all operations of \$16,031,852.39.

*Table No. 28.*—The collections on the pay rolls from the employees of The Panama Canal and Panama Railroad for rent, electric current, and water amounted to approximately \$380,000. Besides this, a considerable amount was collected for hospital service, fuel, care of grounds, etc., which were formerly furnished free, indicating that the total amount of collections for supplies and services which were formerly free of charge amount to considerably over \$400,000. This table includes the collections for other items like telephone service and garage rental, for which employees always did pay. The total collections thus made amount to \$567,583.57.

Under the heading of miscellaneous in this table are included fuel, commissary bills, subsistence, cable charges, property rentals, corral and motor car bills, and other similar items.

*Table No. 29.*—The total amount of depreciation set aside for the replacement of equipment and property is \$3,891,207.53. Of this amount, \$610,755 is on canal transit property, for which the funds are not actually available but appropriated cash and proceeds from business activities are held in reserve for all the other items.

*Table No. 30.*—The total amount held in reserve for the overhauling of equipment and repairs to property is \$1,238,793.66. This is approximately \$300,000 greater than last year. This money has been reserved from appropriated funds and proceeds from business activities and is actually available for expenditure.

*Table No. 31.*—The vacation pay earned by gold employees in the larger business divisions is written into the costs each month on a percentage basis and set aside in this reserve account from which the employees are paid when they actually take their leave. The amount in reserve on June 30 was \$424,068.68.

*Table No. 32.*—This is a comparative statement of the cost of producing and distributing electric current and power. The charges for depreciation have been considerably reduced and other economies resulted in a reduction in the total cost of approximately \$200,000 from last year. The net unit cost per kilowatt-hour is \$0.007, compared with \$0.0105 last year. These figures, of course, do not include any interest on the investment.

*Table No. 33.*—The Ancon-Balboa-Panama water system produced 3,468,510,000 gallons of water during the past fiscal year at a unit cost of \$0.0853 per thousand gallons. Of this quantity, 1,063,952,000 gallons were consumed in Panama. The Gatun system produced 391,322,000 gallons at a unit cost of \$0.1424 per thousand gallons. The Cristobal-Colon system produced 1,484,799,000 gallons at a unit cost of \$0.0619 per thousand gallons. Of this quantity, 719,638,000 gallons were consumed in the city of Colon.

*Table No. 34.*—The amount expended in connection with the dredging operations in Gaillard Cut during the fiscal year 1923 is \$1,699,675.33, as compared with \$1,079,026.65 last year. The increase is due principally to the work of removing La Pita Point.

*Tables Nos. 35 and 36.*—The amount of money-order business done during the past year approximates \$2,700,000.

*Table No. 37.*—This table shows the total postal service revenues, by years, from 1907 to date, consisting of money-order fees, stamp sales, post office box rents, newspaper postage, etc., the total revenue for the year 1923 being \$118,201.25.

*Table No. 40.*—This statement shows the income from the operation of clubs and playgrounds, both by source and location, the total amount of receipts being \$469,062.54.

*Table No. 41.*—This table shows the expenses in connection with the operation of the bureau of clubs and playgrounds, by source and location, the total expenditure for the year amounting to \$418,143.75.

*Table No. 43.*—This table shows the amount of profit made by the bureau of clubs and playgrounds during the fiscal year as \$47,050.87, and the accumulated profit to June 30, 1922, as \$114,521.56, making the total accumulated surplus \$161,572.43.

*Table No. 44.*—The total value of coupon books issued to employees for deduction on the pay rolls during the fiscal year amounted to \$2,867,780. The value of books sold for cash amounted to \$1,214,-862.50, and books issued on charge accounts \$52,705, making a grand total of \$4,135,347.50. Last year the pay roll issues amounted to \$2,965,635, and the cash sales to \$1,300,917.50. Coupons lifted at commissaries in exchange for goods amounted to \$3,765,589.80; at restaurants, \$229,025.03; at Panama Canal clubhouses, \$118,085.50; smaller amounts were accepted at the Hotel Tivoli, on marine equip-



ment, Balboa community house, Y. M. C. A., Y. W. C. A., and the yacht club. The total amount of coupons lifted and accounted for was \$4,119,565.65.

TABLE NO. 1.—Balance sheets, June 30, 1923.

TRIAL BALANCE SHEET.	
DEBITS.	CREDITS.
<b>Assets:</b>	<b>Liabilities:</b>
Canal fixed property.....	Canal capital.....
Canal equipment.....	Business capital.....
Cash due treasury.....	Accounts payable.....
Cash working.....	Unclassified canal credits.....
Accounts receivable.....	Amortization.....
Business property.....	Depreciation.....
Stores.....	Repair Reserves.....
United States Treasury.....	Gratuity reserves.....
Theoretical interest accruals.....	Canal revenues.....
Undistributed business capital (credit account).....	Business revenues.....
Unclassified canal expenditures.....	Canal surplus.....
Canal expenses.....	Business surplus.....
Business expenses.....	
Canal earnings (credit account).....	
<b>Total.....</b>	<b>Total.....</b>

GENERAL BALANCE SHEET.

DEBITS.	CREDITS.
<b>Assets:</b>	<b>Liabilities:</b>
Canal fixed property.....	Canal capital.....
Canal equipment.....	Business capital.....
Cash due treasury.....	Accounts payable.....
Cash working.....	Unclassified canal credits.....
Accounts receivable.....	Amortization.....
Business property.....	Depreciation.....
Stores.....	Repair reserves.....
United States Treasury.....	Gratuity reserves.....
Theoretical Interest accruals.....	Canal surplus.....
Undistributed business capital (credit account).....	Business surplus.....
Unclassified canal expenditures.....	
<b>Total.....</b>	<b>Total.....</b>

<sup>1</sup> Credit.



TABLE No. 2.—Balance in appropriation and fund accounting ledger June 30, 1923.

Assets.	Treasury balance subject to requisition for cash.	Cash.	Accounts receivable.	Transfers available.	Storehouse stock.	Total.
1. Maintenance and operation.....	\$8,498,865.79	\$1,744,627.27	\$664,192.38	\$164,147.34	\$3,905,209.41	\$14,977,042.19
2. Sanitation.....	268,091.15	205,304.97	96,690.72	72,937.32	643,024.16	643,024.16
3. Civil government.....	64,969.81	108,144.58	6,512.75	.....	179,627.14	179,627.14
4. Miscellaneous receipts.....	.....	405,994.10	19,451.24	1,081,986.89	.....	1,507,432.23
5. Trust funds.....	.....	678,458.92	.....	.....	.....	678,458.92
7. Increase of compensation, 1922.....	615.65	.....	.....	.....	.....	615.65
8. Construction and equipment.....	272,509.97	21,249.86	.....	.....	293,759.83	293,759.83
9. Panama Canal fund.....	127,940.99	2,911.66	.....	.....	130,852.65	130,852.65
10. Canal connecting Atlantic and Pacific Oceans.....	27,989.66	.....	.....	.....	27,989.66	27,989.66
13. Increase of compensation, 1923.....	.....	33.32	.....	.....	.....	33.32
15. Aviation, Navy, 1922.....	80,000.00	.....	.....	.....	.....	80,000.00
Total.....	9,340,983.02	3,166,724.68	786,847.09	1,246,134.23	3,978,146.73	18,518,835.75

  

Liabilities.	Unencumbered and unallotted appropriations.	Unliquidated encumbrances.	Undistributed encumbrances.	Outstanding liabilities on encumbrances.	Liabilities.	Transfers payable.	Total.
1. Maintenance and operation.....	\$1,466,708.05	\$5,812,523.26	\$4,777,250.64	\$708,260.49	\$1,130,312.86	\$1,081,986.89	\$14,977,042.19
2. Sanitation.....	341,185.20	17,342.71	108,008.47	24,782.40	102,631.11	49,074.27	643,024.16
3. Civil government.....	56,382.50	7,504.50	.....	3,406.44	77,260.63	35,073.07	179,627.14
4. Miscellaneous receipts.....	.....	.....	.....	.....	1,507,432.23	.....	1,507,432.23
5. Trust funds.....	.....	.....	.....	.....	678,458.92	.....	678,458.92
7. Increase of compensation, 1922.....	615.65	.....	.....	.....	.....	.....	615.65
8. Construction and equipment.....	242,010.34	.....	.....	.....	51,749.49	.....	293,759.83
9. Panama Canal fund.....	1,127.25	4,973.01	.....	.....	124,752.39	.....	130,852.65
10. Canal connecting Atlantic and Pacific Oceans.....	7,989.66	.....	.....	.....	20,000.00	.....	27,989.66
13. Increase of compensation, 1923.....	33.32	.....	.....	.....	.....	.....	33.32
15. Aviation, Navy, 1922.....	.....	.....	.....	.....	.....	80,000.00	80,000.00
Total.....	2,116,051.97	5,842,343.48	4,885,259.11	736,449.33	3,692,597.63	1,246,134.23	18,518,835.75

TABLE NO 2.—Balance in appropriation and fund accounting ledger June 30, 1923—Continued.

Detail of cash by fiscal officers.	Disbursing clerk.	Paymaster.	Collector.	Total.
1. Maintenance and operation.....	\$220,748.10	\$1,433,176.17	\$90,703.00	\$1,744,627.27
2. Sanitation.....	21,941.25	173,831.43	9,532.29	205,304.97
3. Civil government.....	3,110.95	103,342.19	1,691.44	108,144.58
4. Miscellaneous receipts.....			405,994.10	405,994.10
5. Trust funds.....	90,506.78	2,273.05	585,679.09	678,458.92
8. Construction and equipment.....	21,249.86			21,249.86
9. Panama Canal fund.....	2,911.66			2,911.66
13. Increase of compensation, 1923.....	33.32			33.32
Total.....	360,501.92	1,712,622.84	1,093,599.92	3,166,724.68

TABLE NO. 3.—*Statement of appropriations by the Congress.*

Canal construction appropriations.....	\$387,069,108.31
(For details see annual report for 1920 and prior.)	
Annual payments to Republic of Panama.....	3,000,000.00
Act of—	
Mar. 4, 1913.....	\$250,000.00
Apr. 6, 1914.....	250,000.00
Jan. 25, 1915.....	250,000.00
Feb. 23, 1916.....	250,000.00
July 1, 1916.....	250,000.00
Mar. 3, 1917.....	250,000.00
Apr. 15, 1918.....	250,000.00
Apr. 15, 1919.....	250,000.00
June 4, 1920.....	250,000.00
Mar. 2, 1921.....	250,000.00
June 1, 1922.....	250,000.00
Jan. 8, 1923.....	250,000.00
Operation and maintenance.....	73,087,517.23

	Maintenance and operation.	Sanitation, Canal Zone.	Civil government, Panama Canal and Canal Zone.	Increase of com- pensation, Panama Canal.	Total.
Act of—					
Mar. 3, 1915.....	\$5,200,000.00	\$700,000.00	\$540,000.00	.....	\$6,440,000.00
July 1, 1916.....	5,750,000.00	700,000.00	600,000.00	.....	7,050,000.00
June 12, 1917.....	9,000,000.00	700,000.00	700,000.00	.....	10,400,000.00
July 12, 1917.....	.....	.....	.....	\$10,006.22	10,006.22
June 4, 1918.....	.....	150,000.00	.....	.....	150,000.00
July 1, 1918.....	9,000,000.00	900,000.00	750,000.00	.....	10,650,000.00
July 3, 1918.....	.....	.....	.....	16,000.00	16,000.00
Mar. 1, 1919.....	.....	.....	.....	35,018.33	35,018.33
July 19, 1919.....	7,547,939.00	850,000.00	702,000.00	.....	9,099,939.00
Nov. 4, 1919.....	.....	.....	150,000.00	.....	150,000.00
May 29, 1920.....	.....	.....	.....	34,500.00	34,500.00
June 5, 1920.....	7,531,851.00	850,000.00	900,000.00	.....	9,281,851.00
Mar. 1, 1921.....	.....	.....	24,670.00	.....	24,670.00
Mar. 4, 1921.....	7,250,000.00	850,000.00	900,000.00	21,500.00	9,021,500.00
June 30, 1922.....	2,659,434.00	525,000.00	930,000.00	16,800.00	4,131,234.00
Mar. 2, 1923.....	5,079,683.00	575,000.00	930,000.00	17,520.00	6,602,203.00
	59,018,907.00	6,800,000.00	7,126,670.00	151,344.55	73,096,921.55
Less amount transferred to sur- plus fund.....	.....	.....	.....	9,404.32	9,404.32
Total.....	59,018,907.00	6,800,000.00	7,126,670.00	141,940.23	73,087,517.23

TABLE NO. 4.—*Status of authorized bond issue.*

Authorized bond issue.....	\$375,200,900.00
Appropriated for canal construction.....	\$387,069,108.31
Less amount exempted by law:	
Colliers <i>Ulysses</i> and <i>Achilles</i> .....	\$1,985,552.29
Coal barges <i>Mamei</i> and <i>Darien</i> .....	2,295,746.57
Dock No. 6, Cristobal.....	2,093,190.00
Equipping colliers <i>Ulysses</i> and <i>Achilles</i> .....	250,000.00
Painting tanks, colliers <i>Ulysses</i> and <i>Achilles</i> .....	44,279.76
Repairs to steamships, <i>Ancon</i> and <i>Cristobal</i> .....	720,000.00
Expended for operation and maintenance of canal.....	4,289,159.00
Stock of material and supplies for operation and main- tenance of canal.....	2,225,000.00
	13,902,927.62
	373,166,180.69
Balance.....	2,034,719.31
Appraised value American legation building in the city of Panama, exempt from charge to bond issue, act July 1, 1916.....	22,256.00
Balance available for appropriation within limit of cost of canal and authorized bond issue.....	2,056,975.31

TABLE No. 5.—*Cash receipts and disbursements for account of the United States, by appropriations and funds, fiscal year ended June 30, 1923.*

## CASH RECEIPTS.

	United States Treasury.	Disbursing clerk, Washington, D. C.	Paymaster, Canal Zone.	Collector, Canal Zone.	Total.
On hand July 1, 1922:					
Maintenance and operation, Panama Canal.....	\$7,905,822.68	\$277,118.91	\$1,677,416.94	\$4,746.20	\$9,865,104.73
Sanitation, Canal Zone, Panama Canal.....	370,338.31	3,251.63	188,491.38	9,502.75	571,584.07
Civil government, Panama Canal and Canal Zone.....	88,917.22	3,127.09	46,794.28	4,758.17	143,596.76
Canal connecting Atlantic and Pacific Oceans.....	27,989.66				27,989.66
Construction and equipment, Panama Canal.....	303,257.21	21,249.86			324,507.07
Panama Canal fund.....	128,992.08	2,911.66			131,903.74
Increase of compensation, 1921.....	3,208.81				3,208.81
Increase of compensation, 1922.....		615.65			615.65
Engineering, Bureau of Engineering.....	14,000.00				14,000.00
Aviation, Navy, 1922.....	80,000.00				80,000.00
Miscellaneous receipts, United States revenues.....				125,268.96	125,268.96
Security deposits.....		45,210.05	2,634.11	433,027.86	480,872.02
Total.....	8,922,525.97	353,484.85	1,915,336.71	577,303.94	11,768,651.47
Appropriations for fiscal year 1923:					
Maintenance and operation, Panama Canal.....	2,659,434.00				2,659,434.00
Sanitation, Canal Zone, Panama Canal.....	525,000.00				525,000.00
Civil government, Panama Canal and Canal Zone.....	930,000.00				930,000.00
Increase in compensation, 1923 (Washington office).....	16,800.00				16,800.00
Total.....	4,131,234.00				4,131,234.00
Transfer of funds between fiscal officers:					
Maintenance and operation, Panama Canal.....	726,782.57	1,917,700.00	7,770,278.26		10,414,760.83
Sanitation, Canal Zone, Panama Canal.....	5,890.06	63,000.00	946,528.91		1,015,418.97
Civil government, Panama Canal and Canal Zone.....	4,389.46	9,000.00	900,655.73		914,045.19
Increase in compensation, 1922.....	615.65				615.65
Increase in compensation, 1923.....		16,800.00			16,800.00
Total.....	737,677.74	2,006,500.00	9,617,462.90		12,361,640.64
Collections:					
Maintenance and operation, Panama Canal.....	1,556,891.41	720,448.11	289.50	5,774,597.77	8,052,226.79
Sanitation, Canal Zone, Panama Canal.....	101,539.38	24,133.97	6.00	497,026.95	622,706.30
Civil government, Panama Canal and Canal Zone.....	164.62	5,231.66		57,748.00	63,144.28
Miscellaneous receipts, United States revenues.....		1,710.72	1.72	17,885,044.49	17,886,756.93
Security deposits.....		838,874.03	2,263,173.31	22,487,430.73	25,589,478.07
Total.....	1,658,595.41	1,590,398.49	2,263,470.53	46,701,847.94	52,214,312.37
Total cash debits.....	15,450,033.12	3,950,383.34	13,796,270.14	47,279,151.88	80,475,838.48

TABLE No. 5.—Cash receipts and disbursements for account of the United States, fiscal year ended June 30, 1923—Continued.

## CASH DISBURSEMENTS.

	United States Treasury.	Disbursing clerk, Washington, D. C.	Paymaster, Canal Zone.	Collector, Canal Zone.	Total.
Covered into United States Treasury:					
Maintenance and operation (business profits, 1922).....	\$264,801.84	.....	.....	.....	\$264,801.84
Miscellaneous receipts (United States revenues).....	.....	\$1,710.72	\$1.72	\$17,604,319.35	17,606,031.79
Increase in compensation, 1921 (to surplus fund).....	3,208.81	.....	.....	.....	3,208.81
Total.....	268,010.65	1,710.72	1.72	17,604,319.35	17,874,042.44
Transfers between fiscal officers:					
Maintenance and operation, Panama Canal.....	4,017,700.00	708,419.86	.....	5,688,640.97	10,414,760.83
Sanitation, Canal Zone, Panama Canal.....	513,000.00	5,421.56	.....	496,997.41	1,015,418.97
Civil government, Panama Canal and Canal Zone.....	849,000.00	4,230.46	.....	60,814.73	914,045.19
Increase in compensation, 1922.....	.....	615.65	.....	.....	615.65
Increase in compensation, 1923.....	16,800.00	.....	.....	.....	16,800.00
Total.....	5,396,500.00	718,687.53	.....	6,246,453.11	12,361,640.64
Disbursements:					
Maintenance and operation, Panama Canal.....	67,563.03	1,986,099.06	8,014,808.53	.....	10,068,470.62
Sanitation, Canal Zone, Panama Canal.....	221,676.60	63,022.79	961,194.86	.....	1,245,894.25
Civil government, Panama Canal and Canal Zone.....	109,501.49	10,017.34	844,107.82	.....	963,626.65
Construction and equipment.....	30,747.24	.....	.....	.....	30,747.24
Panama Canal fund.....	1,051.09	.....	.....	.....	1,051.09
Increase of compensation, 1923.....	.....	16,766.68	.....	.....	16,766.68
Engineering, Bureau of Engineering Security deposits.....	14,000.00	793,577.30	2,263,534.37	22,334,779.50	25,391,891.17
Total.....	444,539.45	2,869,483.17	12,083,645.58	22,334,779.50	37,732,447.70
On hand June 30, 1923:					
Maintenance and operation, Panama Canal.....	8,498,865.79	220,748.10	1,433,176.17	90,703.00	10,243,493.06
Sanitation, Canal Zone, Panama Canal.....	268,091.15	21,941.25	173,831.43	9,532.29	473,396.12
Civil Government, Panama Canal and Canal Zone.....	64,969.81	3,110.95	103,342.19	1,691.44	173,114.39
Canal connecting Atlantic and Pacific Oceans.....	27,989.66	.....	.....	.....	27,989.66
Construction and equipment, Panama Canal.....	272,509.97	21,249.86	.....	.....	293,759.83
Panama Canal fund.....	127,940.99	2,911.66	.....	.....	130,852.65
Increase of compensation, 1922.....	615.65	.....	.....	.....	615.65
Increase of compensation, 1923.....	.....	33.32	.....	.....	33.32
Aviation, Navy, 1922.....	80,000.00	.....	.....	.....	80,000.00
Miscellaneous receipts, United States revenues.....	.....	.....	.....	405,994.10	405,994.10
Security deposits.....	.....	90,506.78	2,273.05	585,679.09	678,458.92
Total.....	9,340,983.02	360,501.92	1,712,622.84	1,093,599.92	12,507,707.70
Total cash credits.....	15,450,033.12	3,950,383.34	13,796,270.14	47,279,151.88	80,475,838.48



TABLE No. 6.—*Payments made by paymaster, fiscal year ended June 30, 1923.*

	Panama Canal payments.				Panama railroad payments.			
	Gold rolls.	Silver rolls.	Vouchers.	Total.	Pay rolls.	Vouchers.	Total.	Grand total.
<b>1922.</b>								
July.....	\$449,719.36	\$281,088.20	\$130,957.91	\$861,765.47	\$213,974.26	\$243,462.99	\$457,437.25	\$1,319,202.72
August.....	436,095.87	263,362.33	79,357.81	778,816.01	217,875.10	170,144.00	388,019.10	1,166,835.11
September.....	447,922.04	271,150.77	126,924.18	845,996.99	227,795.03	278,795.03	506,590.06	1,352,587.05
October.....	410,178.18	262,700.64	88,170.37	761,049.19	196,104.40	313,697.66	509,802.06	1,270,851.25
November.....	449,935.40	271,253.82	103,851.68	825,040.90	219,146.30	200,235.97	419,382.27	1,244,423.17
December.....	423,579.78	262,372.81	81,130.59	767,063.18	203,142.77	204,028.59	407,171.36	1,174,254.54
<b>1923.</b>								
January.....	425,340.89	270,035.42	109,438.37	804,814.68	206,084.05	289,247.43	495,331.48	1,300,146.16
February.....	425,908.19	281,261.79	111,209.84	818,379.82	205,891.21	205,067.15	410,958.36	1,229,338.18
March.....	430,781.85	275,935.85	96,891.42	803,609.12	210,912.81	306,386.77	517,299.58	1,320,908.70
April.....	435,207.37	297,065.93	101,898.76	834,172.06	222,103.21	317,686.28	539,789.49	1,373,961.55
May.....	451,870.36	302,520.39	123,345.93	877,736.68	232,026.49	261,591.53	493,618.02	1,371,354.70
June.....	424,891.48	310,348.51	106,407.12	841,647.11	202,036.88	257,693.45	459,730.33	1,301,377.44
Total.....	5,211,430.77	3,349,096.46	1,259,583.98	9,820,111.21	2,557,092.51	3,048,036.85	5,605,129.36	15,425,240.57

TABLE No. 7.—*Receipts and disbursements by collector, Canal Zone funds, fiscal year ended June 30, 1923.*

## RECEIPTS.

	Clubhouse funds.	Trustfunds.	Postal savings funds.	Money order funds.	Interest.	Treasury savings certificates.	Total.
<b>1922.</b>							
July.....	\$30,117.89	\$523.84	-----	\$126,803.89	\$2,903.83	\$34,960.00	\$195,309.45
August.....	32,831.96	1,187.40	-----	112,093.20	1,326.98	47,000.00	194,439.54
September.....	28,069.13	17.00	-----	114,710.56	1,119.27	36,420.00	180,335.96
October.....	27,947.39	458.25	-----	115,982.33	6,005.86	6,198.00	156,591.83
November.....	26,447.82	907.98	-----	130,484.54	1,052.78	4,264.00	163,157.12
December.....	28,102.62	490.00	-----	121,446.90	942.42	3,956.50	154,938.44
<b>1923.</b>							
January.....	29,413.98	1,617.48	-----	171,535.49	2,434.44	33,620.00	238,621.39
February.....	27,848.39	2,889.36	-----	168,656.80	938.79	6,006.50	206,339.84
March.....	58,880.60	520.00	-----	261,654.64	4,940.54	8,876.50	334,872.28
April.....	37,355.92	788.44	-----	134,539.68	1,129.22	8,999.50	182,812.76
May.....	29,609.14	148.35	-----	97,059.18	1,244.10	4,346.00	132,406.77
June.....	32,229.06	2,465.77	-----	115,934.65	1,134.98	5,227.50	156,991.96
Total receipts.....	388,853.90	12,013.87	-----	1,670,901.86	25,173.21	199,874.50	2,296,817.34
Cash on hand July 1, 1922.....	100,355.21	6,366.76	\$208.00	878,098.52	7,669.02	40,500.00	1,033,197.51
	489,209.11	18,380.63	208.00	2,549,000.38	32,842.23	240,374.50	3,330,014.85

## DISBURSEMENTS.

1922.							
July.....	\$36,030.36	\$275.52	-----	\$211,876.00	\$832.95	\$43,700.00	\$292,714.83
August.....	28,043.66	-----	-----	140,525.00	780.25	31,760.00	201,108.91
September.....	28,390.53	17.00	-----	136,380.00	533.31	47,060.00	212,380.84
October.....	24,326.93	597.19	-----	128,670.00	681.99	36,900.00	191,176.11
November.....	15,006.04	693.88	-----	128,200.00	581.99	5,658.00	150,139.91
December.....	26,620.17	8.15	-----	145,000.00	574.48	4,264.00	176,466.80
1923.							
January.....	25,494.42	1,591.63	-----	118,800.00	643.41	7,359.50	153,888.96
February.....	25,193.54	9.61	\$27.00	77,246.00	446.78	30,217.00	133,139.93
March.....	40,394.67	2,568.31	-----	153,301.92	532.19	6,006.50	202,803.59
April.....	45,721.37	20.00	-----	237,800.00	806.09	8,876.50	293,223.96
May.....	30,411.44	156.09	-----	148,414.00	1,218.04	8,999.50	189,199.07
June.....	26,248.60	3,361.85	-----	147,650.00	21,042.37	4,366.50	202,669.32
Total disbursements.....	351,881.73	9,299.23	27.00	1,773,862.92	28,673.85	235,167.50	2,398,912.23
Cash on hand June 30, 1923.....	137,327.38	9,081.40	181.00	775,137.46	4,168.38	5,207.00	931,102.62
	489,209.11	18,380.63	208.00	2,549,000.38	32,842.23	240,374.50	3,330,014.85

TABLE NO. 8.—*Statement of collections repaid to appropriations and to individuals and companies, and collections deposited to miscellaneous receipts during the fiscal year ended June 30, 1923.*

Maintenance and operation:		Maintenance and operation—Contd.	
Injury compensation.....	\$150.10	Sales of water.....	\$141,641.32
Commissary coupon books honored by Panama Canal.....	3,151.05	Municipal engineering work.....	70,011.23
Municipal engineering work, unclassified credits.....	5.60	Shop work.....	957,719.47
Water rentals—		Dry Dockage—	
Panama.....	150,823.04	Balboa.....	40,098.24
Colon.....	91,601.55	Cristobal.....	6,069.44
Mechanical division, unclassified credits.....	21.00	Dockage and wharfage.....	82,695.30
Fuel oil plants, unclassified credits.....	21.00	Handling fuel oil.....	354,772.90
Business storehouses, unclassified credits.....	4,856.08	Fuel-oil sales.....	29,553.99
Building repairs and construction, unclassified credits.....	79.20	Fuel-oil tank rentals.....	6,626.10
Hotel Tivoli, unclassified credits.....	.29	Business store sales.....	677,563.59
Pedro Miguel Restaurant—		Animal and motor transportation.....	128,172.21
Equipment.....	81.84	Motor-car repair shop.....	12,522.76
Unclassified credits.....	60.00	Building repairs and construction.....	59,317.53
Fortification division, unclassified credits.....	3.82	Panama Canal Press.....	69,257.52
Claims against carriers and contractors.....	51.19	Gold quarters rentals.....	353,203.36
Sundries suspense.....	46,064.00	Silver quarters rentals.....	192,359.79
General storehouse, Cristobal.....	12.00	Garage rentals.....	15,309.71
Marine division services.....	8,371.63	Boathouse rentals.....	500.96
Dredging division services.....	14,469.62	Sale of fuel.....	29,361.82
Civil service retirement fund.....	219.57	Sale of gasoline.....	59,108.03
General accounts.....	523.81	Sale of general supplies.....	1,640.34
Recruiting and repatriating employees.....	708.83	Exchange of furniture.....	15,351.13
Executive office services.....	67,856.81	Mattress factory.....	14,586.34
Cables and radiograms.....	2,100.10	Janitor service.....	10,773.14
Canal Record.....	37.25	Hotel Tivoli.....	171,838.00
Railroad motor cars.....	7,059.10	Restaurants.....	7,112.84
Clubs and playgrounds.....	49,780.42	Hotel Aspinwall.....	1,005.00
Accounting office services.....	134,262.85	Building rentals.....	9,251.47
Lost metal checks.....	375.50	Land rentals.....	23,375.14
Paymaster's office services.....	16,732.00	Equipment rentals.....	847.31
Collector's office services.....	18,974.00	Market rentals.....	1,023.66
Safety deposit box rentals.....	478.00	Sand and gravel.....	14,633.90
Office engineer services.....	1,076.04	Sale of Government property.....	122,916.00
Sales of prints.....	2,928.28	Sale of Nautical Charts and Publications.....	2,335.90
Meteorology and hydrography division services.....	75.75	Fortification Division services.....	150,722.24
Survey section services.....	2,538.18	Total.....	5,774,597.70
Balboa storehouse services.....	1,831.46	Sanitation:	
Cristobal storehouse services.....	804.14	Claims against carriers and contractors.....	9.27
Supply department office services.....	8,557.16	Health department.....	60.00
District quartermaster—		Civil service retirement fund.....	66.89
Balboa.....	9,337.92	General accounts.....	30.00
Pedro Miguel.....	11,532.11	Chief health officer.....	236.07
Gatun.....	4,589.53	Ancon Hospital—	
Cristobal.....	3,101.03	Fees.....	170,260.95
Port captain—		Mess.....	17,527.54
Balboa.....	237.43	Burials.....	3,475.13
Cristobal.....	551.37	Miscellaneous.....	4,854.39
Admeasurement of vessels.....	3,360.00	Colon Hospital—	
Inspection of vessels.....	2,953.80	Fees.....	33,169.48
Pilotage, Balboa.....	70,905.50	Mess.....	3,232.30
Pilotage, Cristobal.....	146,449.00	Miscellaneous.....	364.50
Tugs and launches—		Line dispensaries.....	13,596.57
Balboa.....	126,244.80	Corozal farm produce.....	24,474.88
Cristobal.....	228,561.67	Corozal farm pasturage.....	42.75
Handling lines—		Corozal Asylum fees.....	78,058.52
Balboa.....	63,929.00	Corozal Asylum, miscellaneous.....	3,046.42
Cristobal.....	69,280.00	Palo Seco Leper Asylum.....	12,102.00
Aids to navigation.....	62,005.76	Santo Tomas Hospital.....	947.86
Gatun Locks.....	809.70	Quarantine subsistence.....	11,999.22
Pedro Miguel Locks.....	25.45	Quarantine miscellaneous.....	19,396.72
Miraflores Locks.....	3.50	Sanitation, Panama.....	8,138.04
Gatun Dam.....	202.70	Street cleaning and garbage collection, Panama.....	31,717.70
Dredging division work.....	50,952.07	Sanitation, Colon.....	3,520.87
Reserve for repairs, clubs and playgrounds.....	229.26	Street cleaning and garbage collection, Colon.....	36,313.34
Electric work.....	229,509.08	Sanitation, Canal Zone.....	20,885.54
Electric current.....	32,357.59	Total.....	497,026.95
Telephone and telegraph work.....	190,439.55	Civil government:	
		Retirement fund (division of civil affairs).....	157.85
		Civil affairs.....	83.00
		Customs services.....	747.50
		Postal service.....	1,776.33
		Schools.....	.99

TABLE No. 8.—*Statement of collections repaid to appropriations and to individuals and companies, and collections deposited to miscellaneous receipts during the fiscal year ended June 30, 1923—Continued.*

Civil government—Continued.		Miscellaneous receipts—Continued.	
School tuition.....	\$4,306.44	Taxes, fees, fines, Canal Zone....	\$45,951.58
Sale of school books.....	649.95	Postal receipts.....	118,260.19
Sales of school material.....	534.63	Interest on bank balances.....	20,000.00
Fire protection.....	124.63	Excess cash (overage).....	.05
Police and prisons.....	49,341.68		
District court.....	25.00	Total.....	17,885,044.49
Total.....	57,748.00		
Miscellaneous receipts:		Individuals and companies: Panama	
Proceeds of waterworks.....	192,353.97	R. R. Co.....	103.24
Tolls.....	17,508,478.70		

## RECAPITULATION.

Maintenance and operation, Panama Canal.....	\$5,774,597.77
Sanitation, Canal Zone, Panama Canal.....	497,026.95
Civil government, Panama Canal and Canal Zone.....	57,748.00
Total repayment to appropriations.....	6,329,372.72
Miscellaneous receipts.....	17,885,044.49
Individuals and companies.....	103.24
Grand total.....	24,214,520.45

TABLE No. 9.—*Statement of transactions in the collector's special deposit account during the fiscal year ended June 30, 1923.*

## IN THE UNITED STATES.

Month.	Deposits.	Panama Canal bills applied.	Payments to individuals and companies.	Refunds.
1922.				
July.....	\$52,900.00	\$30,201.31	\$11,118.50	\$1,813.09
August.....	77,577.07	56,904.70	16,582.91	1,894.84
September.....	81,812.84	60,013.61	23,973.69	2,837.66
October.....	71,856.24	77,806.93	3,119.45	5,142.81
November.....	162,003.85	102,990.92	13,124.05	4,842.49
December.....	105,806.15	91,610.83	4,289.53	3,231.21
1923.				
January.....	190,761.33	142,626.99	16,682.20	8,502.97
February.....	197,424.34	166,177.95	14,657.93	7,230.41
March.....	223,132.42	193,267.42	12,678.72	3,141.35
April.....	249,946.42	221,030.16	12,722.18	4,882.29
May.....	222,321.41	238,379.85	13,074.85	3,347.49
June.....	294,207.87	269,351.32	14,523.56	6,504.81
Total.....	1,929,749.94	1,650,361.99	156,547.57	53,371.42

## ON THE ISTHMUS.

1922.				
July.....	\$1,346,557.96	\$1,167,556.34	\$299,370.79	\$90,536.56
August.....	1,287,412.48	1,082,953.11	195,055.02	8,078.10
September.....	1,383,694.02	1,109,510.88	172,082.29	1,944.31
October.....	1,389,421.21	1,283,063.67	239,496.15	2,147.21
November.....	1,573,151.11	1,291,157.44	207,730.72	10,652.23
December.....	1,640,030.20	1,312,707.08	264,132.51	2,285.72
1923.				
January.....	1,822,689.38	1,465,737.39	332,344.32	1,498.14
February.....	1,586,272.79	1,387,717.83	185,415.25	6,403.41
March.....	2,098,027.69	1,779,691.65	270,850.07	2,003.65
April.....	2,033,289.37	1,847,266.24	271,771.36	6,119.57
May.....	2,146,240.09	1,880,101.24	272,216.06	925.43
June.....	2,250,046.31	1,801,438.55	219,718.59	1,971.46
Total.....	20,556,832.61	17,408,901.42	2,930,183.13	134,565.79

TABLE No. 9.—*Statement of transactions in the collector's special deposit account during the fiscal year ended June 30, 1923—Continued.*

## RECAPITULATION.

	In the United States.		On the Isthmus.	
On hand July 1, 1922.....	\$33,957.68		\$399,070.18	
Deposits during year.....	1,929,749.94		20,556,832.61	
Panama Canal bills applied.....		\$1,650,361.99		\$17,408,901.42
Payments to individuals and companies <sup>1</sup> .....		156,547.57		2,930,183.13
Refunds.....		53,371.42		134,565.79
On hand, June 30, 1923.....		103,426.64		482,252.45
Total.....	1,963,707.62	1,963,707.62	20,955,902.79	20,955,902.79

<sup>1</sup> Includes the Panama R. R. Co. and other individuals and companies.TABLE No. 10.—*Statement of audited pay rolls on Isthmus during fiscal year 1923.*

	Total.	Salaries.	Wages.
Maintenance and operation:			
Canal transit divisions—			
Executive department—			
Executive.....	\$22,077.40	\$22,077.40	.....
Record.....	77,275.30	77,275.30	.....
Personnel.....	33,886.19	33,886.19	.....
Correspondence.....	38,290.44	38,290.44	.....
Property.....	28,777.74	28,777.74	.....
Statistics.....	16,263.08	16,263.08	.....
General.....	38,521.37	38,521.37	.....
Shipping commissioner.....	32,093.46	32,093.46	.....
Total.....	287,184.98	287,184.98	.....
Clubs and playgrounds.....	149,881.76	139,316.56	\$10,565.20
Accounting department—			
Accounting.....	336,905.91	336,905.91	.....
Paymaster.....	36,284.28	36,284.28	.....
Collector.....	39,269.01	39,269.01	.....
Total.....	412,459.20	412,459.20	.....
Office engineer.....	31,042.60	30,284.80	757.80
Meteorology and hydrography.....	29,441.00	27,787.49	1,653.51
Surveys.....	36,624.69	22,625.83	13,998.86
Supply department, quartermaster—			
Office.....	44,059.38	44,059.38	.....
District quartermasters.....	211,933.23	130,133.56	81,799.67
Storehouses.....	224,267.58	160,950.98	63,316.60
Total.....	480,260.19	335,143.92	145,116.27
Marine division—			
Superintendent's office.....	9,758.77	9,758.77	.....
Port captain—			
Balboa.....	395,598.44	189,395.29	206,203.15
Cristobal.....	355,374.74	190,267.41	165,107.33
Lighthouse subdivision.....	123,116.90	35,963.10	87,153.80
Total.....	883,848.85	425,384.57	458,464.28
Lock operation—			
Atlantic.....	279,380.02	89,361.38	190,018.64
Pacific.....	524,994.55	146,646.58	378,347.97
Total.....	804,374.57	236,007.96	568,366.61
Gatun Dam and backfill.....	36,095.95	9,996.16	26,099.79
Dredging division.....	921,086.45	227,281.98	693,804.47
Total transit divisions.....	4,072,300.24	2,153,473.45	1,918,826.79



TABLE NO. 10.—Statement of audited pay rolls on Isthmus during fiscal year 1923—Continued.

	Total.	Salaries.	Wages.
Maintenance and operation—Continued.			
Canal business divisions—			
Electrical.....	\$439,597.85	\$179,240.27	\$260,357.58
Municipal engineering.....	523,861.61	196,897.50	326,964.11
Mechanical division—			
Balboa shops.....	942,516.20	167,258.06	775,258.14
Cristobal shops.....	258,794.08	28,547.78	230,246.30
Total.....	1,201,310.28	195,805.84	1,005,504.44
Supply department, quartermaster—			
Fuel-oil plants.....	79,918.71	23,633.41	56,285.30
Animal and motor transportation.....	125,841.26	11,463.33	114,377.93
Motor-car repair shop.....	49,106.04	11,685.67	37,420.37
Building repairs and construction.....	282,577.91	58,526.53	224,051.38
Panama Canal Press.....	65,373.47	23,066.52	42,306.95
Hotel Tivoli.....	49,910.04	24,536.98	25,373.06
Total.....	652,727.43	152,912.44	499,814.99
Fortifications.....	157,478.98	46,060.15	111,418.83
Total, business divisions.....	2,974,976.15	770,916.20	2,204,059.95
Injury and death (act Sept. 7, 1916).....	33,880.71	786.74	33,093.97
Total, maintenance and operation.....	7,081,157.10	2,925,176.39	4,155,980.71
Civil government:			
Civil affairs and customs.....	34,662.53	34,662.53	
Posts.....	100,773.81	100,773.81	
Schools.....	167,867.21	167,867.21	
Fire protection.....	93,807.56	93,807.56	
Police and prisons.....	303,445.82	303,445.82	
District courts.....	18,533.19	18,533.19	
District attorney.....	9,874.88	9,874.88	
Marshal.....	7,400.03	7,400.03	
Magistrates' courts.....	13,889.43	13,889.43	
Total, civil government.....	750,254.46	750,254.46	
Sanitation:			
Office.....	11,543.34	11,543.34	
Ancon Hospital.....	329,553.16	272,965.16	56,588.00
Colon Hospital.....	50,126.69	43,649.41	6,477.28
Line dispensaries.....	36,494.93	35,581.43	913.50
Corozal Farm.....	12,656.52	3,828.18	8,828.34
Corozal Asylum.....	53,086.79	43,684.81	9,401.98
Palo Seco Leper Asylum.....	15,729.09	6,275.50	9,453.59
Santo Tomas Hospital.....	13,652.49	13,652.49	
Quarantine:			
Office.....	843.00	843.00	
Balboa.....	23,101.81	19,907.69	3,194.12
Cristobal.....	20,986.63	18,500.67	1,585.96
Total.....	44,031.44	39,251.36	4,780.08
Health Office:			
Panama.....	105,743.45	32,441.16	73,302.29
Colon.....	60,597.91	25,958.16	34,639.75
Sanitation, Zone.....	63,070.82	20,044.06	43,026.76
Total, sanitation.....	796,286.63	548,875.06	247,411.57
Grand total.....	8,627,698.19	4,224,305.91	4,403,392.28

TABLE NO. 11.—*Statement of accounts receivable registered during fiscal year ended June, 30, 1923.*

	Number of bills registered.	Total.	Against the Panama. R. R.	Against other departments of the United States.	Commercial.	Tolls.	Repay to appropriations.
1922.							
July.....	2,262	\$1,579,874.36	\$140,855.52	\$128,787.85	\$216,098.32	\$1,094,132.67	\$485,741.69
August.....	2,394	1,500,078.74	158,206.26	88,919.85	197,494.03	1,055,368.60	444,710.14
September.....	2,316	1,520,186.85	169,723.32	112,808.04	217,554.44	1,020,101.05	500,085.80
October.....	2,425	1,739,611.05	151,264.59	125,120.60	207,705.71	1,255,520.15	484,090.90
November.....	2,474	1,703,132.88	138,621.24	81,700.38	218,359.37	1,264,451.89	438,680.99
December.....	2,457	1,747,669.26	151,388.98	107,968.41	175,736.35	1,312,575.52	435,093.74
1923.							
January.....	2,787	2,018,095.98	149,421.02	135,514.11	227,862.70	1,505,298.15	512,797.83
February.....	2,500	1,977,770.44	151,033.03	153,646.70	249,118.20	1,423,972.51	553,797.93
March.....	3,149	2,496,506.51	159,128.41	190,806.31	318,838.47	1,827,733.32	668,773.19
April.....	2,867	2,409,976.80	145,567.05	93,475.23	291,947.07	1,878,987.45	530,989.35
May.....	2,880	2,587,171.60	135,568.38	99,263.73	380,076.50	1,972,262.99	614,908.61
June.....	3,104	2,535,218.08	152,138.51	135,802.60	349,202.57	1,898,074.40	637,143.68
Total.....	31,615	23,815,292.55	1,803,006.31	1,453,813.81	3,049,993.73	17,508,478.70	6,306,813.85
Totals for year ended June 30, 1922.....	26,483	20,531,132.11	2,144,015.64	1,812,372.71	15,376,735.25	11,198,008.51	7,445,201.18

<sup>1</sup> Includes \$1,864,427.99 trust funds.TABLE NO. 12.—*Comparative statement of accounts receivable.*

	Fiscal year 1922.	Fiscal year 1923.
Audited bills.....	\$1,144,630.65	\$743,323.29
Hospital certificates.....	20,004.99	22,033.55
Injury compensation.....	4,234.49	1,716.81
Cement bags returned to contractor.....	1,499.66	2,283.26
Water rental deficit bills.....	95,950.24	17,498.68
Commissary coupon books honored by The Panama Canal.....	3.25	<sup>1</sup> 8.50
Total.....	1,266,323.28	786,847.09

<sup>1</sup> Credit.TABLE NO. 13.—*Comparative statement of accounts payable.*

	Fiscal year 1922.	Fiscal year 1923.
United States invoices and ocean freight.....	\$185,166.10	\$313,131.45
Isthmus vouchers.....	100,015.06	181,860.60
Current pay rolls.....	739,335.77	759,745.01
Unpaid salaries and wages.....	252,930.16	253,048.87
Drums, carboys, and reels.....	<sup>1</sup> 1,810.53	<sup>1</sup> 2,072.13
Treasury settlements in suspense.....	2,177.12	992.68
Total.....	1,277,813.68	1,506,706.48

<sup>1</sup> Credit.

TABLE NO. 14.—*Defense of capital expenditures to June 30, 1923.*

Prism excavation:		Playgrounds.....	\$13,902.41
Gatun to sea.....	\$237,482.88	Administration building, Balboa	
Gatun to Pedro Miguel.....	2,141,358.67	Heights.....	306,211.51
Pedro Miguel to sea.....	388,049.34	District court and law department	
Gatun Locks.....	1,203,953.05	office, Ancon.....	65,446.39
Pedro Miguel Locks.....	638,599.30	Shop and store office.....	238,553.94
Miraflores Locks.....	867,655.23	Terminal office building, Balboa...	3,225.42
Gatun spillway.....	99,317.86	Shops:	
Miraflores spillway and east dam..	89,133.95	Balboa.....	3,795,260.32
Gatun-Mindi Levee.....	2,813.01	Cristobal.....	164,147.93
Gatun Dam.....	196,462.60	Storehouses.....	475,934.74
Trinidad River Dam.....	1,328.47	Hotels and mess halls.....	242,909.87
Pedro Miguel Dam.....	8,633.66	Quarters:	
Miraflores West Dam.....	23,195.78	Gold.....	1,351,269.07
La Boca Locks and Dams (abandoned).....	748,054.48	Silver.....	269,685.74
Colon East Breakwater.....	3,771,111.74	Miscellaneous buildings.....	543,700.28
Colon West Breakwater.....	85,506.42	Ancon Hospital.....	435,325.80
Naos Island Breakwater.....	20,312.78	Colon Hospital.....	63,876.90
Aids to navigation.....	93,388.54	Dispensaries.....	40,303.97
Floating caisson.....	20,872.15	Asylums.....	128,506.16
Power transmission system.....	10,055.46	Quarantine stations.....	40,129.48
Coaling station:		Storehouse, health.....	2,547.15
Balboa.....	2,284,568.35	Balboa incinerator.....	100,000.00
Cristobal.....	3,179,797.59	Miscellaneous buildings, health..	129,824.94
Dry dock:		Schoolhouses.....	49,227.23
Balboa.....	3,376,647.49	Post offices.....	267,987.62
Cristobal.....	23,475.51	Courthouses, police and fire stations, etc.....	50,963.50
Docks, piers, and wharves:		Canal construction and flooded areas.....	891,707.06
Balboa.....	1,590,160.35	Auxiliary works and buildings.....	146,258.94
Cristobal.....	1,033,984.61	Depopulation of Canal Zone.....	2,336,889.63
Entrance Basin, Balboa.....	489,480.39	Joint land commission expenses.....	356,006.61
Inner Harbor:		Purchase from new Panama Canal Co.....	38,717,335.97
Balboa.....	3,265,207.04	Investment Panama R. R. stock.....	155,818.24
Cristobal.....	237,101.43	Concession from Republic of Panama.....	10,000,000.00
Preparatory work, Balboa terminals.....	1,808,921.65	Relocation of Panama R. R.....	9,800,626.46
Panama water-supply system.....	40,697.58	Presentation of launch <i>Louise</i> to French Government.....	13,500.00
Other zone water-supply systems..	155,190.03	Canal protection 1917-18.....	25,236.79
Zone sewage system.....	298,284.69	Equipment and property transferred to and from other departments of the Government.....	1,970,877.33
Zone roadways.....	610,956.00	Construction equipment.....	2,620,090.65
Fluviographs.....	3,427.02	Construction material and supplies.....	2,225,000.00
Permanent townsite:		Loans to Panama R. R. Co.....	3,247,332.11
Ancon-Balboa.....	596,596.73		
La Boca.....	123,206.13	Total.....	112,103,082.12
Red Tank.....	2,614.43		
Pedro Miguel.....	96,797.08		
Gatun.....	1,776.56		
Cristobal.....	355,847.29		
Sanitary fills.....	636,732.11		
Sanitary ditches.....	199,706.53		

TABLE NO. 15.—*Details of Canal fixed property, fiscal year 1923.*

	June 30, 1922.	Additions.	June 30, 1923.
Channels:			
Gatun to sea.....	\$11,636,700.00		\$11,636,700.00
Gatun to Pedro Miguel.....	104,926,542.00		104,926,542.00
Pedro Miguel to sea.....	18,032,612.00		18,032,612.00
Locks:			
Gatun.....	34,844,900.35		
Gate Spares.....		\$3,353.77	34,848,254.12
Pedro Miguel.....	15,362,560.75		
House 70.....		300.00	15,362,860.75
Miraflores.....	22,529,940.29		22,529,940.29
Spillways:			
Gatun.....	3,982,199.00		3,982,199.00
Miraflores.....	1,231,256.00		1,231,256.00
Floating caisson.....	326,996.00		326,996.00
Dams:			
Gatun.....	9,626,678.00		9,626,678.00
Gatun-Mindi Levee.....	137,822.00		137,822.00
Trinidad River.....	65,057.00		65,057.00
Pedro Miguel.....	423,070.00		423,070.00
Miraflores.....	1,136,594.00		1,136,594.00
Breakwaters:			
Colon west.....	4,189,810.00		4,189,810.00
Naos Island.....	995,337.00		995,337.00
Aids to navigation.....	827,359.00		
Quarters, Toro Point Light.....		1,155.00	
Flamenco Light.....		737.63	
Roads, streets, and sidewalks.....	979,766.35		829,251.63
Sidewalks, Tabernilla Street.....		1,119.65	
Road, Silver City.....		10,714.01	991,600.01

TABLE No. 15.—*Details of Canal fixed property, fiscal year 1923—Continued.*

	June 30, 1922.	Additions.	June 30, 1923.
Storm sewers.....	\$200,000.00	.....	\$200,000.00
Street-lighting system.....	90,490.00	.....	90,490.00
Office buildings:			
Administration.....	918,636.00	.....	918,636.00
Terminal office, Balboa.....	77,409.00	.....	77,409.00
Storehouses.....	300,000.00	.....	300,000.00
Hydrographic structures.....	11,772.00	.....	11,772.00
Health department buildings:			
Ancon Hospital.....	1,305,975.00	.....	1,305,975.00
Colon Hospital.....	191,630.00	.....	191,630.00
Dispensaries.....	120,910.00	.....	120,910.00
Asylums.....	128,313.56	.....	.....
Addition, Ward I, Corozal.....	.....	\$157.93	128,471.49
Quarantine station.....	40,129.00	.....	40,129.00
Other health department buildings.....	58,507.00	.....	58,507.00
Cristobal incinerator.....	.....	75,000.00	75,000.00
Civil government:			
Schoolhouses.....	443,044.00	.....	443,044.00
Post offices.....	8,995.00	.....	8,995.00
Fire stations.....	21,644.00	.....	21,644.00
Police stations and prisons.....	19,870.00	.....	19,870.00
Courthouses.....	74,896.00	.....	74,896.00
Clubs and playgrounds.....	114,498.00	.....	114,498.00
Total.....	235,381,918.30	92,537.99	235,474,456.29

TABLE No. 16.—*Detail of canal transit equipment.*

	July 1, 1922.	Additions.	With- drawals.	June 30, 1923.
Floating equipment				
Tugs.....	\$818,677.23	.....	.....	.....
Tug Empire sold.....	.....	.....	\$28,463.50	\$790,213.73
Supply boats.....	103,088.96	.....	.....	.....
No. 1 sold.....	.....	.....	51,544.48	51,544.48
Launches.....	170,773.56	.....	.....	.....
Dorothy, purchased.....	.....	\$550.00	.....	.....
Dan, adjustment.....	.....	25.00	.....	.....
Nard No. 2, rebuilt.....	.....	2,666.79	.....	.....
Goodwill, renewals.....	.....	350.00	.....	.....
Lirio, new engine.....	.....	855.37	.....	.....
Flamenco, surveyed for sale.....	.....	.....	1,850.60	.....
Pest sold.....	.....	.....	250.00	.....
Nard No. 1, surveyed for sale.....	.....	.....	1,882.48	171,237.64
Dredges.....	1,474,666.60	.....	.....	.....
No. 84, sold.....	.....	.....	50,000.00	1,424,666.60
Barges.....	1,048,141.52	.....	.....	.....
No. 169, transfer.....	.....	3,532.65	.....	.....
No. 226, Machinery.....	.....	5,000.00	.....	.....
No. 101, surveyed for sale.....	.....	.....	7,804.04	.....
No. 122, surveyed for sale.....	.....	.....	7,776.00	.....
No. 123, surveyed for sale.....	.....	.....	8,553.60	.....
No. 146, surveyed for sale.....	.....	.....	4,785.89	.....
No. 147, surveyed for sale.....	.....	.....	4,785.89	.....
No. 148, surveyed for sale.....	.....	.....	4,785.89	1,018,182.86
Floating cranes.....	656,792.45	.....	.....	656,792.45
Craneboat.....	19,503.00	.....	.....	.....
La Valley revaluation.....	.....	10,497.00	.....	30,000.00
Graders.....	83,690.30	.....	.....	83,690.30
Drill barge.....	15,000.00	.....	.....	15,000.00
Compressor barge.....	20,848.00	.....	.....	20,848.00
Coal hoist barge.....	2,112.00	.....	.....	2,112.00
Unwatering barge.....	30,076.85	.....	.....	.....
Transferred.....	.....	.....	30,076.85	.....
Other equipment:				
Road rollers.....	19,256.00	.....	.....	19,256.00
Steam shovels.....	6,450.30	.....	.....	.....
Sale.....	.....	.....	6,450.30	.....
Automobiles.....	1,430.64	.....	.....	.....
Transfer.....	.....	520.59	.....	1,951.23
Salvage section:				
Machinery and tools.....	13,164.86	570.62	102.60	.....
Depreciation applied.....	.....	.....	4,147.87	9,485.01
Total.....	4,483,672.27	24,568.02	213,259.99	4,294,980.30

TABLE No. 17.—*Business property, by divisions.*

Division.	Fixed prop- erty.	Equip- ment.	Stores.	Cash.	Work in process.	Unclassified expenses.	Unclassified credits.	Undistrib- uted business capital.	Total.
Electric light and power system.....	\$6,277,573.85	\$7,875.30	\$12,716.70			\$3.29		\$170,000.00	\$6,468,169.14
Electrical work.....		17,939.01	15,391.73		\$10,435.42	<sup>1</sup> 154.77		65,000.00	108,611.39
Telephone and telegraph work.....		6,422.96	4,855.95			<sup>1</sup> 62.18			11,216.73
Water systems.....	2,913,984.93	23,372.05	60,931.12			<sup>1</sup> 14,078.77		125,000.00	3,109,209.33
Municipal engineering work.....		30,359.40	17,412.94		118,857.45	5,125.80	<sup>1</sup> \$2,586.18	95,000.00	264,169.41
Public works, Panama.....	1,469,266.45								
Repayments.....	<sup>1</sup> 413,724.98								1,055,541.47
Public works, Colon.....	1,249,502.71								
Repayments.....	<sup>1</sup> 342,679.48								906,823.23
Shops and drydocks.....	256,500.00	384,508.24	35,890.08		241,581.25	<sup>1</sup> 25,388.69		450,000.00	1,343,090.88
Steamships.....	2,000,000.00								2,000,000.00
Docks, wharves, and piers.....	2,368,200.26								2,368,200.26
Coaling plants.....	500,000.00								500,000.00
Colliers and coal barges.....	3,629,232.00								3,629,232.00
Fuel-oil plants.....	1,077,828.58	4,351.27	140,204.13			<sup>1</sup> 2.50		80,000.00	1,302,381.48
Business storehouses.....	300,000.00		347,942.47		237,143.80	8,147.02	<sup>1</sup> 169,622.95	500,000.00	1,223,610.34
Animal and motor transportation.....	18,132.00	224,476.24				138.27		45,000.00	287,746.51
Motor-car repair shop.....	19,864.00	8,121.24	3,853.57					13,000.00	44,838.81
Building repairs and construction.....	5,922.35	881.61	1,862.48		123,557.24	<sup>1</sup> 22,967.93		100,000.00	209,255.75
Panama Canal Press.....		21,514.64	101,792.63		4,643.06	<sup>1</sup> 70		15,000.00	142,949.63
Gold quarters.....	3,432,286.00								3,432,286.00
Silver quarters.....	616,381.00								616,381.00
Garages.....	78,902.29								78,902.29
Boathouses.....	4,000.00								4,000.00
Hotel Tivoli.....	161,258.13	62,535.93	5,454.10	\$1,877.59	4,094.85	<sup>1</sup> 6,073.06		5,000.00	234,147.54
Restaurants.....	198,350.00	33,380.13							231,730.13
Hotel Aspinwall.....		10,970.23							10,970.23
Lands rented.....		1,394.22	4.58			<sup>1</sup> 2.50			1,396.30
Markets.....						2.50			2.50
Sand and gravel.....			239,776.07						239,776.07
Nautical charts and publications.....			1,851.70		25.71	<sup>1</sup> 1,594.24	42.10		325.27
Fortifications.....						968.54			968.54
Total.....	25,820,780.09	838,102.47	989,940.25	1,877.59	740,338.78	<sup>1</sup> 55,939.92	<sup>1</sup> 172,167.03	1,663,000.00	29,825,932.23

<sup>1</sup> Credit.



TABLE No. 17.—*Business property, by divisions.*—Continued.

## UNDISTRIBUTED BUSINESS CAPITAL, BY DIVISIONS.

Division.	Accounts receivable.	Working cash.	Stores.	Total.
Electric light and power system.....	\$50,000	\$20,000	\$100,000	\$170,000
Electric work.....	5,000	10,000	50,000	65,000
Water system.....	45,000	30,000	50,000	125,000
Municipal engineering work.....	25,000	20,000	50,000	95,000
Shops and dry docks.....	100,000	100,000	250,000	450,000
Fuel oil plants.....	75,000	5,000	.....	80,000
Business storehouse.....	250,000	.....	250,000	500,000
Animal and motor transportation.....	15,000	10,000	20,000	45,000
Motor car repair shop.....	.....	3,000	10,000	13,000
Constructing Quartermaster.....	25,000	25,000	50,000	100,000
Panama Canal Press.....	10,000	5,000	.....	15,000
Hotel Tivoli.....	1,000	4,000	.....	5,000
Total.....	601,000	232,000	830,000	1,663,000

TABLE No. 18.—*Business property, fiscal year ended June 30, 1923.*

	Balance July 1, 1922.	Additions.	With-drawals.	Balance June 30, 1923.
Hydroelectric plant.....	\$1,667,953.44	.....	.....	.....
Extensions.....	.....	\$1,311.68	.....	\$1,669,265.12
Miraflores steam power plant.....	307,862.44	.....	.....	.....
Test boring for new plant.....	.....	407.87	.....	308,270.31
Substations.....	1,841,045.18	.....	.....	1,841,045.18
Transmission system.....	1,355,733.38	.....	.....	1,355,733.38
Distribution lines.....	1,101,419.90	.....	.....	.....
Extensions.....	.....	1,839.96	.....	1,103,259.86
Total electrical division.....	6,274,014.34	3,559.51	.....	6,277,573.85
Panama water system.....	1,732,396.35	.....	.....	.....
Summit surge tank.....	.....	27,666.32	.....	1,760,062.67
Colon water system.....	585,642.89	.....	.....	585,642.89
Zone water system.....	568,279.37	.....	.....	568,279.37
Total municipal engineering division.....	2,886,318.61	27,666.32	.....	2,913,984.93
Waterworks and sewers, Panama.....	876,353.22	.....	.....	876,353.22
Pavements.....	577,718.28	.....	.....	.....
Pavements, new construction.....	.....	15,194.95	.....	592,913.23
Total public works, Panama.....	1,454,071.50	15,194.95	.....	1,469,266.45
Less repayments.....	383,462.32	.....	\$30,262.66	413,724.98
Balance.....	1,070,609.18	15,194.95	30,262.66	1,055,541.47
Waterworks and sewers, Colon.....	623,883.68	.....	.....	623,883.68
Pavements.....	624,638.25	.....	.....	.....
Pavements, new construction.....	.....	980.78	.....	625,619.03
Total public works, Colon.....	1,248,521.93	980.78	.....	1,249,502.71
Less repayments.....	311,549.57	.....	31,129.91	342,679.48
Balance.....	936,972.36	980.78	31,129.91	906,823.23
Incinerator, Balboa.....	100,000.00	.....	.....	.....
To defense capital.....	.....	.....	100,000.00	.....
Incinerator, Cristobal.....	75,000.00	.....	.....	.....
To transit capital.....	.....	.....	75,000.00	.....
Dry dock, Cristobal.....	50,000.00	.....	.....	50,000.00
Roundhouse, Balboa.....	111,500.00	.....	.....	111,500.00
Car and paint shop, Balboa.....	95,000.00	.....	.....	95,000.00
Miscellaneous buildings.....	104.03	.....	.....	.....
Absorbed.....	.....	.....	104.03	.....
Total shops and dry docks.....	256,604.03	.....	104.03	256,500.00
Steamships:	.....	.....	.....	.....
Colon.....	400,000.00	.....	.....	400,000.00
Panama.....	400,000.00	.....	.....	400,000.00
Ancon.....	600,000.00	.....	.....	600,000.00
Cristobal.....	600,000.00	.....	.....	600,000.00
Total steamships.....	2,000,000.00	.....	.....	2,000,000.00

TABLE No. 18.—*Business property, fiscal year ended June 30, 1923—Continued.*

	Balance July 1, 1922.	Additions.	With- drawals.	Balance June 30, 1923.
Pier 18, Balboa.....	\$1,168,200.26			\$1,168,200.26
Pier 6, Cristobal.....	2,201,979.74		\$1,001,979.74	1,200,000.00
Total, docks, wharves, and piers.....	3,370,180.00		1,001,979.74	2,368,200.26
Coaling plant, Cristobal.....	500,000.00			500,000.00
Colliers.....	2,029,232.00			2,029,232.00
Coal barges.....	1,600,000.00			1,600,000.00
Total, colliers and coal barges.....	3,629,232.00			3,629,232.00
Fuel-oil plant:				
Balboa.....	458,860.58			458,860.58
Cristobal.....	560,457.59			
New pipe line, Cristobal.....		\$58,510.41		618,968.00
Total, fuel-oil plants.....	1,019,318.17	58,510.41		1,077,828.58
Business storehouses.....	300,000.00			300,000.00
Animal and motor transportation.....	23,583.00			
To motor-car repair shop.....			3,782.00	
To building division.....			1,202.00	
To garages.....			467.00	18,132.00
Motor-car repair shop:				
From animal and motor transportation.....		3,782.00		
From garages.....		16,082.00		19,864.00
Building repairs and construction:				
From animal and motor transportation.....		1,202.00		
Alteration of sawmill.....		4,720.35		5,922.35
Gold quarters.....	3,439,729.01			
Absorbed in operation.....			5,043.01	
House 70 to Pacific locks.....			300.00	
Sales of houses.....			2,100.00	3,432,286.00
Silver quarters.....	619,231.00			
Sales of houses.....			2,850.00	616,381.00
Garages.....	92,163.00			
From animal and motor transportation.....		467.00		
New 8-stall garage.....		1,358.15		
New 3-stall garage.....		996.14		
To motor-car repair shops.....			16,082.00	78,902.29
Boathouses.....	4,000.00			4,000.00
Hotel Tivoli.....	136,972.00			
Garage for guests.....		288.78		
Sprinkler system.....		23,997.35		161,258.13
Restaurants.....	201,850.00			
To defense capital.....			3,500.00	198,350.00
Grand total, business property.....	26,935,776.70	158,805.74	1,273,802.35	25,820,780.09

TABLE No. 19.—*Canal business equipment.*

	Balance July 1, 1922.	Additions.	With- drawals.	Balance June 30, 1923.
Electric light and power system:				
Machinery and tools.....	\$6,717.72	\$1,336.00	\$201.49	
Depreciation applied.....			857.65	\$6,994.58
Automobiles.....		880.72		880.72
Electric work:				
Machinery and tools.....	14,584.12	1,421.26	50.26	
Depreciation applied.....			1,838.38	14,116.74
Automobiles.....	3,822.27			3,822.27
Telephone and telegraph work:				
Machinery and tools.....	6,928.91	399.20	101.09	
Depreciation applied.....			803.06	6,423.96
Water system:				
Machinery and tools.....	24,533.31	7,026.86	11.12	
Depreciation applied.....			8,177.00	23,372.05
Municipal engineering work:				
Machinery and tools.....	30,520.24	6,255.73	2,704.84	
Depreciation applied.....			9,965.81	24,105.32
Automobiles.....	6,254.08			6,254.08
Shops and dry docks:				
Machinery and tools.....	415,596.81	4,105.93	10,977.18	
Depreciation applied.....			24,217.32	384,508.24

TABLE No. 19.—*Canal business equipment*—Continued.

	Balance July 1, 1922.	Additions.	With- drawals.	Balance June 30, 1923.
Fuel oil plants:				
Machinery and tools.....		\$4,603.16		
Depreciation applied.....			\$251.89	\$4,351.27
Animal and motor transportation:				
Machinery and tools.....	<sup>1</sup> \$65.96	\$1,553.43	245.88	
Depreciation applied.....			281.67	959.92
Automobiles.....	223,615.56	5,505.18	8,961.05	220,159.69
Mules.....		4,443.39	1,086.76	3,356.63
Motor car repair shop:				
Machinery and tools.....	11,471.20	220.96	35.34	
Depreciation applied.....			3,535.58	8,121.24
Building repairs and construction:				
Machinery and tools.....		5,996.86	4,891.46	
Depreciation applied.....			223.79	881.61
Panama Canal Press:				
Machinery and tools.....	23,522.50	5.99	210.00	
Depreciation applied.....			1,803.85	21,514.64
Hotel Tivoli:				
Machinery and tools.....	58,599.48	9,897.74		
Depreciation applied.....			5,961.29	62,535.93
Restaurants:				
Machinery and tools.....	37,562.30		733.54	
Depreciation applied.....			3,448.63	33,380.13
Hotel Aspinwall:				
Machinery and tools.....	12,129.01			
Depreciation applied.....			1,158.78	10,970.23
Lands rented:				
Machinery and tools.....		312.04	4.58	307.46
Mules.....		1,086.76		1,086.76
Total.....	875,791.55	55,051.21	92,739.29	838,103.47

<sup>1</sup> Credit.TABLE No. 20.—*Status of public works in the cities of Panama and Colon June 30, 1923.*

	Total.	Panama.	Colon.
Constructing cost:			
Waterworks and sewers.....	\$1,515,431.85	\$891,548.17	\$623,883.68
Pavements.....	1,203,337.31	577,718.28	625,619.03
Total.....	2,718,769.16	1,469,266.45	1,249,502.71
Maintenance, operation, and repairs, including proportion of zone system.....	2,374,468.77	1,329,728.17	1,044,740.60
Interest at 2 per cent per annum:			
Waterworks and sewers.....	362,751.67	197,655.34	165,096.33
Pavements.....	300,953.27	160,606.45	140,346.82
Zone system.....	177,135.53	114,688.62	62,446.91
Total.....	840,840.47	472,950.41	367,890.06
Total payable from water rentals.....	5,934,078.40	3,271,945.03	2,662,133.37
Water rentals and deficit payments applied to—			
Maintenance, operation, and repairs.....	2,374,468.77	1,329,728.17	1,044,740.60
Interest.....	840,840.47	472,950.41	367,890.06
Proportion of capital cost.....	738,905.78	403,893.78	335,012.00
Total.....	3,954,215.02	2,206,572.36	1,747,642.66
Collections to be applied from unpaid deficit bills to capital cost.....	17,498.68	9,831.20	7,667.48
Capital cost reimbursable June 30, 1923 (in addition to unpaid deficit bills):			
Waterworks and sewers.....	1,089,930.05	636,525.36	453,404.69
Pavements.....	872,434.65	419,016.11	453,418.54
Total.....	1,962,364.70	1,055,541.47	906,823.23
Total payable from water rentals.....	5,934,078.40	3,271,945.03	2,662,133.37

TABLE No. 21.—*Detail of Canal transit material and supplies.*

	Fiscal year, 1922.	Fiscal year, 1923.
Balboa store.....	\$4, 100, 018.94	\$2, 263, 706.40
Medical store.....	97, 407.78	65, 441.04
Stationery store, administration building.....	21, 862.06	14, 080.37
Paraiso store.....	766, 438.23	695, 357.53
Cristobal store.....	692, 409.06	400, 451.02
Corozal store.....	404, 098.85	363, 912.91
District quartermaster stores:		
Balboa.....	2, 339.24	2, 500.63
Pedro Miguel.....	1 107.84	153.15
Gatun.....	1, 262.18	555.34
Cristobal.....	606.25	425.84
Total.....	4, 099.83	3, 634.96
Local purchases.....	1, 218.52	16, 479.86
Invoices in suspense.....	1 90.13	1 12, 962.86
Material drawn by divisions not yet charged to the work.....	43, 723.18	66, 828.40
Total.....	6, 131, 186.32	3, 876, 929.63
Less reserve for war price reductions.....	1, 524, 018.78	888, 723.15
Book value of stores on hand.....	4, 607, 167.54	2, 988, 206.48

<sup>1</sup> Credit.TABLE No. 22.—*Receipts, issues and transfers of stores (and purchases charged to divisions) during fiscal year 1923.*

Month.	Balance on hand June 30, 1922.	Receipts by—				Total to be accounted for.
		Purchase.	Transfer.	Manufacture.	Adjustments.	
July.....	\$6, 575, 593.15	\$47, 011.69	\$134, 351.24	\$16, 987.85	\$4, 690.09	\$6, 778, 634.02
August.....	6, 304, 570.66	242, 865.37	231, 950.89	32, 048.06	9, 362.04	6, 820, 797.02
September.....	6, 157, 045.67	74, 858.03	174, 859.59	23, 631.33	3, 674.13	6, 434, 068.75
October.....	5, 884, 183.41	108, 032.36	212, 960.86	21, 099.64	23, 073.98	6, 249, 350.25
November.....	5, 704, 311.53	88, 617.97	138, 960.22	20, 447.53	13, 665.89	5, 966, 008.14
December.....	5, 550, 665.00	160, 394.31	191, 284.57	44, 794.71	1 28, 321.08	5, 918, 517.51
January.....	5, 346, 331.21	220, 349.85	220, 150.60	16, 307.23	111, 379.80	5, 914, 518.69
February.....	5, 251, 419.91	161, 127.23	363, 851.94	29, 647.00	4, 477.34	5, 810, 523.42
March.....	5, 124, 553.49	144, 495.37	240, 137.58	12, 118.92	6, 914.34	5, 528, 219.60
April.....	4, 861, 525.37	118, 216.39	239, 156.99	37, 376.98	3, 691.55	5, 259, 967.28
May.....	4, 669, 675.64	227, 607.47	226, 193.52	27, 601.08	9, 960.15	5, 161, 037.86
June.....	4, 712, 920.71	341, 995.85	157, 865.66	33, 397.02	157, 981.11	5, 404, 160.35
Total.....		1, 935, 571.79	2, 531, 723.66	315, 457.35	320, 549.34	

Regular stock in storehouses, July 1, 1922.....	\$6, 175, 387.09
Material in hands of divisions, July 1, 1922.....	680, 659.25
Canal transit.....	43, 723.18
Canal business.....	637, 136.07

Month.	Issued by—					Balance on hand June 30, 1923.	Purchases direct to divisions.
	Issues.	Transfers.	Sales.	Adjust- ments.	Total credits.		
July.....	\$198, 045.01	\$116, 722.99	\$140, 884.90	\$18, 410.46	\$474, 063.36	\$6, 304, 570.66	\$49, 140.36
August.....	215, 754.42	174, 861.64	122, 662.85	150, 472.44	663, 751.35	6, 157, 045.67	48, 418.82
September.....	204, 933.24	132, 797.00	137, 187.40	74, 967.70	549, 885.34	5, 884, 183.41	50, 146.89
October.....	205, 680.79	178, 129.07	94, 213.18	67, 015.68	545, 038.72	5, 704, 311.53	31, 279.86
November.....	201, 440.49	105, 808.16	101, 133.64	6, 955.85	415, 338.14	5, 550, 665.00	43, 623.41
December.....	235, 713.84	154, 839.71	116, 848.23	65, 084.52	572, 486.30	5, 346, 331.21	54, 798.79
January.....	329, 626.35	161, 849.09	153, 668.73	17, 954.61	663, 098.78	5, 251, 419.91	49, 995.10
February.....	256, 132.91	326, 436.52	94, 500.36	8, 900.00	685, 969.93	5, 124, 553.49	85, 361.17
March.....	311, 360.08	194, 120.75	127, 717.25	33, 496.15	666, 694.23	4, 861, 525.37	76, 817.72
April.....	307, 621.27	155, 525.52	97, 680.30	29, 464.55	590, 291.64	4, 669, 675.64	46, 561.35
May.....	246, 123.10	132, 521.90	54, 441.02	15, 031.13	448, 117.15	4, 712, 920.71	40, 784.23
June.....	265, 849.71	96, 607.52	158, 901.88	246, 501.71	767, 860.82	4, 636, 299.53	48, 660.89
Total..	2, 978, 281.21	1, 930, 219.87	1, 399, 839.74	734, 254.94	7, 042, 595.76		625, 588.09

Regular stock in storehouses, July 1, 1923.....	\$4, 323, 477.81
Material in hands of division, July 1, 1923.....	227, 053.35
Canal transit.....	66, 828.40
Canal business.....	160, 224.95

<sup>1</sup> Credit.



TABLE No. 24.—Statement of canal expenses, earnings, and net expenses.

	Fiscal year 1923.		Net canal expenses.
	Canal expenses.	Earnings.	
<b>Executive department:</b>			
Executive offices.....	\$298,248.97	\$118,824.42	\$179,424.55
Cables and radiograms.....	3,118.19	2,154.58	963.61
Shipping commissioner.....	39,180.23		39,180.23
Canal record.....	12,604.21	255.45	12,348.76
Land office.....	2,400.00		2,400.00
Legal services.....	489.67		489.67
Railroad motor cars.....	13,211.58	12,378.34	833.24
Clubs and playgrounds.....	191,189.47	49,764.52	141,424.95
<b>Total.....</b>	<b>560,442.32</b>	<b>183,377.31</b>	<b>377,065.01</b>
<b>Accounting department:</b>			
Accounting office.....	361,723.45	225,147.79	136,575.66
Paymaster's office.....	43,791.27	27,936.10	15,855.17
Collector's office.....	44,029.92	29,151.00	14,878.92
<b>Total.....</b>	<b>449,544.64</b>	<b>282,234.89</b>	<b>167,309.75</b>
<b>Washington office:</b>			
Chief of office.....	48,692.44	21.01	48,671.43
Purchasing bureau.....	131,777.55	23,794.29	107,983.26
Assistant auditor's office.....	27,178.68		27,178.68
Disbursing clerk's office.....	7,648.62		7,648.62
<b>Total.....</b>	<b>215,297.29</b>	<b>23,815.30</b>	<b>191,481.99</b>
<b>Civil government:</b>			
Civil affairs.....	15,039.39	83.00	14,956.39
Customs.....	25,102.20	647.50	24,454.70
Posts.....	178,464.90	8,608.70	169,856.20
Schools.....	201,916.98	5,512.64	196,404.34
Fire protection.....	104,888.26	145.13	104,743.13
Police and prisons.....	375,053.21	49,649.97	325,403.24
District court.....	24,250.90	25.00	24,225.90
District attorney.....	11,339.22	79.80	11,259.42
Marshal.....	9,302.61		9,302.61
Magistrates' courts.....	15,566.92		15,566.92
<b>Total.....</b>	<b>960,924.59</b>	<b>64,751.74</b>	<b>896,172.85</b>
<b>Health department:</b>			
Chief health office.....	24,856.22	4,013.68	20,842.54
Ancon hospital.....	535,661.28	298,392.56	237,268.72
Colon hospital.....	96,617.94	47,699.34	48,918.60
Dispensaries.....	47,155.52	13,361.63	33,793.89
Corozal farm and asylum.....	139,712.35	125,312.83	14,399.52
Palo Seco leper asylum.....	35,437.37	13,644.00	21,793.37
Santo Tomas hospital.....	14,577.71	869.44	13,708.27
Medical storehouse.....	7,111.12		7,111.12
Quarantine service.....	73,382.11	43,691.62	29,690.49
Sanitation, Panama.....	50,188.09	8,126.31	42,061.78
Street cleaning and garbage collection, Panama.....	72,218.27	38,051.04	34,167.23
Sanitation, Colon.....	27,465.59	3,243.67	24,221.92
Street cleaning and garbage collection, Colon.....	66,398.51	38,161.01	28,237.50
Sanitation, Zone.....	117,081.15	53,269.64	63,811.51
<b>Total.....</b>	<b>1,307,833.23</b>	<b>687,836.77</b>	<b>619,996.46</b>
<b>Office engineer.....</b>	<b>34,184.02</b>	<b>15,605.29</b>	<b>18,578.73</b>
<b>Meteorology and hydrography.....</b>	<b>37,426.30</b>	<b>543.92</b>	<b>36,882.38</b>
<b>Surveys.....</b>	<b>39,129.51</b>	<b>3,447.75</b>	<b>35,681.76</b>
<b>Storehouses, general:</b>			
Balboa storehouse.....	323,551.62	103,235.83	220,315.79
Administration building storehouse.....	6,047.10		6,047.10
Paraiso storehouse.....	34,457.94	4,007.46	30,450.48
Cristobal storehouse.....	104,399.11	26,265.25	78,133.86
<b>Total.....</b>	<b>468,455.77</b>	<b>133,508.54</b>	<b>334,947.23</b>
<b>Public buildings and grounds:</b>			
Superintendence.....	48,163.42	41,908.70	6,254.72
Balboa.....	202,178.85	111,080.98	91,097.87
Pedro Miguel.....	44,492.45	34,121.47	10,370.98
Gatun.....	29,772.81	21,283.65	8,489.16
Cristobal.....	64,599.15	38,968.58	25,630.57
<b>Total.....</b>	<b>389,206.68</b>	<b>247,363.38</b>	<b>141,843.30</b>



TABLE NO. 24.—Statement of canal expenses, earnings, and net expenses—Continued.

	Fiscal year 1923.		Net canal expenses.
	Canal expenses.	Earnings.	
Street lighting.....	\$10,045.93	.....	\$10,045.93
Water for municipal purposes.....	69,205.86	.....	69,205.86
Roads, streets, and sidewalks.....	68,990.64	.....	68,990.64
Storm sewers.....	14,455.90	.....	14,455.90
Miscellaneous general expenses:			
Transportation tracks and maintenance.....	49,092.87	\$23,899.42	\$25,193.45
Recruiting and repatriating employees.....	31,879.79	.....	31,879.79
Transportation, employees on Isthmus.....	120,000.00	.....	120,000.00
Compensation, injured employees.....	650.00	.....	650.00
Maintenance laborers' quarters.....	50,705.29	.....	50,705.29
Total.....	252,327.95	23,899.42	228,428.53
Marine division:			
Marine superintendent.....	12,149.53	.....	12,149.53
Port captain—			
Balboa.....	110,019.80	3,705.14	106,314.66
Cristobal.....	59,071.00	2,731.41	56,339.59
Board of admeasurement.....	41,811.39	3,370.00	38,441.39
Board of local inspectors.....	3,947.44	2,913.80	1,033.64
Pilots—			
Balboa.....	131,359.23	75,821.33	55,537.90
Cristobal.....	128,872.46	151,297.00	22,424.54
Tugs and launches—			
Balboa.....	214,185.34	147,481.45	66,703.89
Cristobal.....	210,241.61	206,459.63	3,781.98
Handling lines—			
Balboa.....	63,531.57	70,161.00	6,629.43
Cristobal.....	62,783.55	69,936.00	7,152.45
Lighthouse subdivision.....	346,433.36	124,724.75	221,708.61
Total.....	1,384,406.28	858,601.51	525,804.77
Lock operation and maintenance:			
Gatun Locks—			
Superintendence.....	39,488.72	.....	.....
Operation.....	222,520.03	.....	.....
Maintenance.....	88,568.59	.....	.....
Total, Gatun Locks.....	350,577.34	1,051.68	349,525.66
Pedro Miguel Locks—			
Superintendence.....	20,402.26	.....	.....
Operation.....	201,705.94	.....	.....
Maintenance.....	187,007.27	.....	.....
Total, Pedro Miguel Locks.....	409,115.47	2,613.61	406,501.86
Miraflores Locks—			
Superintendence.....	28,563.99	.....	.....
Operation.....	247,352.18	.....	.....
Maintenance.....	96,975.66	.....	.....
Total, Miraflores Locks.....	372,891.83	102.08	372,789.75
Miraflores spillway.....	491.62	.....	491.62
Corozal store (locks).....	6,440.91	.....	6,440.91
Total, locks.....	1,139,517.17	3,767.37	1,135,749.80
Gatun Dam, maintenance.....	33,107.51	407.23	32,700.28
Gatun spillway.....	6,170.87	.....	6,170.87
Colon East Breakwater.....	5,149.48	.....	5,149.48
Damage to vessels:			
In locks.....	2,296.37	.....	2,296.37
In canal.....	4,494.92	.....	4,494.92
Channel maintenance:			
Atlantic entrance.....	598.39	.....	598.39
Gatun Lake.....	19,836.51	.....	19,836.51
Gaillard Cut.....	1,699,675.33	.....	1,699,675.33
Miraflores Lake.....	5,562.22	.....	5,562.22
Pacific entrance.....	251,813.14	.....	251,813.14
Cristobal Harbor.....	1,915.35	.....	1,915.35
Balboa Harbor.....	59,719.45	.....	59,719.45
Removal floating obstructions.....	28,686.39	.....	28,686.39
Floating derricks, maintenance.....	55,341.23	.....	55,341.23
Dredging division work.....	77,584.32	88,785.08	11,200.76
Total.....	2,200,732.33	88,785.08	2,111,947.25
Total, canal earnings, expenses, and net expenses.....	9,653,345.56	2,617,945.50	7,035,400.06
Amortization.....	350,000.00	.....	350,000.00
Depreciation.....	305,377.50	.....	305,377.50
Grand total.....	10,308,723.06	2,617,945.50	7,690,777.56

<sup>1</sup> Indicates credit.

TABLE NO. 25.—*Detail of Canal transit revenues.*

	Fiscal year 1922.	Fiscal year 1923.
Tolls.....	\$11,193,383.47	\$17,507,630.52
Taxes, fees, fines, Canal Zone.....	45,201.62	45,951.58
Postal receipts.....	116,847.24	118,260.19
Interest on bank balances.....	25,000.00	20,000.00
Proceeds of Government property.....	4,416.00	.....
Miscellaneous.....	743.99	1.77
Grand total.....	11,385,592.32	17,691,844.06

TABLE NO. 26.—*Statement of business expenses, revenues and profit and loss fiscal year 1923.*

	Fiscal year 1923.		Profit or loss.	Fixed capital charge 3 per cent per annum.
	Expenses.	Revenues.		
Electric lighting and power system.....	\$396,730.73	\$751,952.04	\$355,221.31	\$190,913.30
Electrical work.....	222,039.37	206,335.93	15,703.44	2,138.41
Telephone, telegraph, and signal system.....	182,701.07	191,557.98	8,856.91	283.82
Water system.....	552,932.49	624,235.99	71,303.50	71,303.50
Municipal engineering work.....	357,658.14	370,926.88	13,268.74	5,094.64
Public works:				
Panama.....	183,235.24	217,858.55	34,623.31	* 34,623.31
Colon.....	124,506.85	148,539.15	24,032.30	* 24,032.30
Incinerator, Colon.....	28,091.29	29,916.95	1,825.66	1,551.73
Shops and dry docks.....	2,189,768.85	2,289,953.18	100,184.33	32,122.93
Docks, wharves, and piers.....	29,860.18	76,495.35	46,635.17	91,135.60
Fuel-oil plants:				
Handling fuel oil.....	256,159.19	468,867.15	212,707.96	.....
Fuel-oil sales.....	431,128.72	473,315.90	42,187.18	.....
Tank rentals.....	20.42	12,268.44	12,248.02	.....
Total.....	687,308.33	954,451.49	267,143.16	34,698.36
Business storehouses.....	2,407,813.00	2,463,731.63	55,918.63	24,954.66
Animal and motor transportation.....	330,597.83	365,359.42	34,761.59	7,839.53
Motor-car repair shop.....	102,516.74	104,394.90	1,878.16	932.47
Building repairs and construction.....	481,750.87	492,318.06	10,567.19	3,065.10
Panama Canal Press.....	158,229.05	157,255.18	973.87	4,396.36
Quarters:				
Gold.....	320,096.06	362,301.74	42,205.68	103,370.77
Silver.....	192,355.40	192,355.40	.....	18,520.63
Garages.....	13,372.25	14,883.83	1,511.58	2,350.49
Boathouses.....	557.93	501.41	56.52	119.85
District quartermaster supplies and services.....	181,654.97	151,486.18	30,168.79	.....
Hotel Tivoli.....	214,517.58	206,328.34	8,189.24	6,850.28
Restaurants.....	10,823.99	6,847.99	3,976.00	7,421.25
Building rentals.....	7,560.82	11,376.47	3,815.65	15.86
Land rentals.....	15,457.01	23,514.14	8,057.13	.....
Equipment rentals.....	.....	962.46	962.46	.....
Market rentals.....	318.18	1,023.66	705.48	.....
Sand and gravel.....	32,304.99	36,543.30	4,238.31	7,439.87
Sale of Government property.....	75,031.29	185,869.80	110,838.51	.....
Nautical charts and publications.....	1,171.11	2,326.71	1,155.60	10.78
Fortifications division.....	231,239.25	231,239.25	.....	.....
Grand total.....	9,732,200.86	10,872,843.36	* 1,140,642.50	675,185.80

<sup>1</sup> Loss.

<sup>2</sup> Figured at 2 per cent, in accordance with contract.

\* Profits on public works, Panama and Colon, amounting to \$58,655.61, have been included in quarterly remittances to the United States Treasurer, covering interest and amortization collections from the Republic of Panama, the balance of the \$1,140,642.50 net profits above, after deducting the \$58,655.61 already remitted, which balance amounts to \$1,081,986.89 will be immediately covered into the United States Treasury as miscellaneous receipts, United States revenues, in accordance with regulations.

TABLE NO. 27.—*Comparison of expenses, revenues, and surplus to date.*

## CANAL TRANSIT OPERATIONS.

	Tolls.	Taxes, licenses, fees, fines, postal receipts, etc.	Total transit revenues.	Net canal trans- it expenses.	Net revenues.
1914.....	\$14,618.68	-----	\$14,618.68	\$166,030.91	<sup>1</sup> \$151,412.23
1915.....	4,343,383.69	-----	4,343,383.69	4,123,128.09	220,255.60
1916.....	2,399,830.42	\$158,711.96	2,558,542.38	6,999,750.15	<sup>1</sup> 4,441,207.77
1917.....	5,631,781.66	176,617.04	5,808,398.70	6,788,047.60	1,979,648.90
1918.....	6,264,765.71	147,077.57	6,411,843.28	5,920,342.94	491,500.34
1919.....	6,156,118.95	197,898.03	6,354,016.98	6,112,194.77	241,822.21
1920.....	8,493,082.56	442,789.01	8,935,871.57	6,548,272.43	2,387,599.14
1921.....	11,261,919.31	778,197.39	12,040,116.70	9,328,300.14	2,711,816.56
Total.....	44,565,500.98	1,901,291.00	46,466,791.98	45,986,087.03	480,724.95
To business surplus.....		480,724.95	480,724.95	-----	480,724.95
1922.....	44,565,500.98	1,420,566.05	45,986,067.03	45,986,067.03	-----
1923.....	11,193,383.47	192,208.85	11,385,592.32	7,919,017.63	3,466,574.69
	17,507,630.52	184,213.64	17,691,844.06	7,690,777.56	10,001,066.50
Grand total.....	73,266,514.97	1,796,988.44	75,063,503.41	61,595,862.22	13,467,641.19

## CANAL BUSINESS OPERATIONS.

	Business revenues.	Business expenses.	Net revenues.
1914.....	\$690,298.32	\$695,720.71	<sup>1</sup> \$5,422.39
1915.....	2,135,074.92	2,191,475.70	<sup>1</sup> 56,400.78
1916.....	6,488,521.61	6,476,623.17	11,898.44
1917.....	7,579,588.44	7,540,160.78	39,427.66
1918.....	10,324,071.91	10,317,912.35	6,159.56
1919.....	13,684,881.18	13,623,853.92	61,027.26
1920.....	14,705,371.82	14,465,685.69	239,686.13
1921.....	15,232,317.08	14,668,105.88	564,211.20
Total.....	70,840,125.28	69,979,538.20	860,587.08
Profit carried in canal transit operations above.....			379,862.13
Net revenues carried to surplus.....			480,724.95
Interest on public works, Panama and Colon, etc., not included in net revenues in prior years.....			619,584.59
Surplus to June 30, 1921.....			1,100,309.54
1922.....	7,747,227.57	7,423,968.41	323,259.16
1923.....	10,872,843.36	9,732,200.86	1,140,642.50
Total.....	89,460,196.21	87,135,707.47	2,564,211.20

<sup>1</sup> Debit.<sup>2</sup> The loss during the fiscal years 1914 and 1915 was charged to maintenance and operation, The Panama Canal, and is included in the net canal expenses shown above.TABLE NO. 28.—*Statement of collections for rent of gold quarters and allied charges from employees on The Panama Canal and Panama R. R. rolls, July 1, 1922, to June 30, 1923.*

## PANAMA CANAL ROLLS.

Month.	Rent and janitor.	Current.	Water.	Tele- phone.	Garage.	Hos- pital.	Miscella- neous.	Total.
1922.								
July.....	\$20,970.30	\$3,359.68	\$1,415.07	\$900.46	\$961.25	\$2,156.11	\$8,487.47	\$38,250.34
August.....	20,560.02	2,931.51	1,368.81	905.99	953.89	2,107.19	8,536.39	37,363.80
September.....	20,755.97	3,004.92	1,376.56	954.13	1,055.99	1,873.45	8,208.45	37,229.47
October.....	22,465.48	3,096.33	1,453.10	1,032.99	977.67	1,986.97	8,840.87	39,853.41
November.....	21,661.64	3,173.90	1,435.70	1,036.68	1,082.79	2,021.89	8,843.46	39,456.06
December.....	21,013.08	3,772.54	1,580.09	1,048.64	975.76	2,044.50	8,849.59	39,884.20
1923.								
January.....	21,753.07	3,850.15	1,595.59	1,215.41	1,026.09	2,992.21	10,131.12	42,563.64
February.....	21,646.45	3,953.04	1,626.03	1,136.94	1,140.50	2,776.29	8,619.99	40,899.24
March.....	21,224.71	3,776.87	1,607.69	1,175.21	1,040.43	2,548.28	7,876.88	39,250.07
April.....	21,481.87	466.39	1,632.47	1,110.51	1,091.16	1,941.92	9,438.74	37,163.06
May.....	21,698.83	3,171.52	1,650.19	1,191.18	1,046.17	2,045.80	8,278.71	39,082.40
June.....	21,172.06	3,362.28	1,620.74	983.32	1,165.10	1,820.93	10,249.69	40,374.12
Total.....	256,603.48	37,919.13	18,362.04	12,691.46	12,516.80	26,915.54	106,361.36	471,369.81

TABLE No. 28.—*Statement of collections for rent of gold quarters and allied charges from employees on The Panama Canal and Panama R. R. rolls, July 1, 1922, to June 30, 1923—Continued.*

## PANAMA RAILROAD ROLLS.

Month.	Rent and janitor.	Current.	Water.	Tele-phone.	Garage.	Hos-pital.	Miscella-neous.	Total.
1922.								
July.....	\$4,770.64	\$670.88	\$299.59	\$242.14	\$143.00	\$597.66	\$1,662.88	\$8,686.79
August.....	4,729.30	643.62	308.09	254.00	161.00	430.21	1,460.06	7,986.28
September.....	4,635.88	632.92	293.99	244.13	144.35	566.99	1,270.01	7,788.27
October.....	4,812.32	635.78	292.86	267.86	144.47	388.75	1,569.80	8,111.84
November.....	4,601.21	621.89	291.45	228.97	166.33	343.55	1,848.77	8,102.17
December.....	4,425.74	802.51	336.99	220.37	160.30	411.65	1,958.36	8,315.92
1923.								
January.....	4,707.30	854.81	344.75	259.87	151.00	822.55	1,711.01	8,851.29
February.....	4,537.21	820.08	347.56	251.95	158.07	627.60	1,244.67	7,987.14
March.....	4,547.63	792.02	332.10	244.36	149.70	440.25	1,626.70	8,132.76
April.....	4,198.65	109.04	308.18	226.00	138.00	393.18	1,517.46	6,890.51
May.....	4,324.86	639.63	310.72	283.10	138.00	428.75	1,479.73	7,604.79
June.....	4,363.73	662.66	321.99	269.98	202.64	305.45	1,629.55	7,756.00
Total.....	54,654.47	7,885.84	3,788.27	2,992.73	1,856.86	6,056.59	18,979.00	96,213.76
Grand total..	311,257.95	45,804.97	22,150.31	15,684.19	14,373.66	32,972.13	125,340.36	567,583.57

TABLE No. 29.—*Detail of reserves for depreciation.*

	Fiscal year 1922.	Fiscal year 1923.
Canal transit property:		
Equipment—		
Tugs.....	\$316,086.66	\$338,325.24
Supply boats.....	32,320.92	15,531.60
Launches.....	70,896.27	84,954.95
Dredges.....	407,127.76	447,260.13
Barges.....	477,821.58	497,616.45
Crane boat.....	16,149.21	560.00
Graders.....	16,111.90	21,007.90
Drill barges.....	1,156.25	1,218.75
Air-compressor barge.....	7,507.40	7,618.52
Coal-hoist barge.....	1,653.62	1,857.62
Road rollers.....	11,930.92	12,698.56
Steam shovels.....	667.50	.....
Automobiles.....	459.13	502.53
Total equipment.....	1,359,889.12	1,429,152.25
Fixed property.....	305,377.50	610,755.00
Total canal-transit property.....	1,665,266.62	2,039,907.25
Business property:		
Equipment—		
Electric light and power system.....	.....	483.20
Automobiles.....	158,102.19	179,079.73
Shop equipment.....	21,336.72	18,328.38
Total equipment.....	179,438.91	197,891.31
Fixed property—		
Electric light and power system.....	1,037,428.18	1,131,538.42
Water system.....	25,000.00	66,439.38
Dry docks.....	.....	5,000.00
Fuel oil plants.....	229,778.54	283,862.54
Animal and motor transportation.....	.....	1,813.44
Motor car repair shop.....	.....	1,986.36
Building repairs and construction.....	.....	120.24
Gold quarters.....	.....	32,493.44
Garages.....	.....	7,654.80
Boathouses.....	.....	399.96
Hotel Tivoli.....	6,848.58	20,552.97
Restaurants.....	1,932.15	7,161.63
Silver messes.....	499.98	.....
Total fixed property.....	1,301,487.43	1,559,023.18
Total business property.....	1,480,926.34	1,756,914.49
Total.....	3,146,192.96	3,796,821.74
Theoretical interest.....	.....	94,385.79
Grand total.....	3,146,192.96	3,891,207.53



TABLE No. 30.—*Detail of reserve for repairs.*

	Fiscal year 1922.	Fiscal year 1923
Canal-transit property:		
Equipment—		
Tugs.....	\$262, 121.53	\$378, 391.92
Supply boats.....	8, 380.66	9, 119.03
Launches.....	6, 282.37	7, 711.95
Dredges.....	200, 825.39	230, 919.50
Barges.....	153, 888.54	211, 897.41
Crane boat.....	3, 822.67	1, 442.06
Graders.....	15, 592.28	16, 967.68
Drill barges.....	1, 829.33	2, 550.65
Air-compressor barge.....	.....	375.00
Coal-hoist barge.....	675.93	675.93
Road rollers.....	1, 496.64	250.04
Total equipment.....	654, 915.34	860, 301.17
Fixed property—Baseball stadium.....	179.43	220.68
Total canal-transit property.....	655, 094.77	860, 521.85
Business property—Shops and dry docks.....	63, 093.71	66, 994.10
Fixed property:		
Electric light and power system.....	12, 761.32	3, 379.65
Shops and dry docks.....	8, 119.87	79, 648.15
Fuel oil plants.....	199, 927.27	230, 689.65
Hotels.....	1, 932.19	12, 439.74
Total fixed property.....	222, 740.65	311, 277.71
Total business property.....	285, 834.36	378, 271.81
Grand total reserve for repairs.....	940, 929.13	1, 238, 793.66

<sup>1</sup> Debit.TABLE No. 31.—*Reserve for gratuity due employees.*

	Fiscal year 1922.	Fiscal year 1923.
Electrical division, electric light and power system.....	\$69, 843.00	\$70, 243.48
Municipal engineering division, water system.....	49, 702.18	52, 168.25
Mechanical division, shops and dry docks.....	251, 071.77	258, 845.42
Constructing quartermaster, building repairs and construction.....	23, 455.38	17, 115.62
Fortifications.....	37, 734.57	25, 695.91
Total.....	431, 806.90	424, 068.68

TABLE No. 32.—*Detail of cost of production and distribution of electric current.*

	Fiscal year 1922.	Fiscal year 1923.
Gatun hydroelectric power plant:		
Operation and maintenance.....	\$45, 207.30	\$32, 296.61
Reserve for depreciation.....	52, 800.00	25, 019.28
Reserve for repairs.....	2, 850.00	2, 400.00
Total cost.....	100, 857.30	59, 715.89
Kilowatt-hours.....	49, 249.471	45, 560, 996
Unit cost.....	\$0.0020	\$0.0013
Miraflores steam electric power plant: <sup>1</sup>		
Operation and maintenance.....	\$84, 656.98	\$59, 313.43
Reserve for depreciation.....	26, 400.00	4, 617.96
Reserve for repairs.....	1, 590.00	1, 320.00
Total cost.....	112, 646.98	65, 251.39
Kilowatt-hours.....	18, 394	.....
Unit cost.....	\$6.1241	.....
Total cost, both plants.....	\$213, 504.28	\$124, 967.28
Total kilowatt-hours.....	49, 267, 865	45, 560, 996
Average cost per kilowatt-hour.....	\$0.0043	\$0.0027

<sup>1</sup> Miraflores steam power plant is generally operated as a reserve generative station and for stand-by service. During fiscal year 1922 it was required to carry load on 15 occasions, while during fiscal year 1923 load was carried on 36 occasions.



TABLE No. 32.—Detail of cost of production and distribution of electric current—Con.

	Fiscal year 1922.	Fiscal year 1923.
Operation of substations:		
Balboa.....	\$18,599.03	\$13,759.33
Cristobal.....	18,286.78	14,459.98
Gatun.....	24,138.34	18,772.70
Miraflores.....	25,544.19	17,802.71
Gamboa.....	2,231.41	3,865.80
Reserve for depreciation.....	55,200.00	27,615.72
Reserve for repairs.....	1,800.00	1,500.00
Total cost.....	145,799.75	97,776.24
Transmission lines:		
Inspection and maintenance.....	36,551.75	19,699.02
Reserve for depreciation.....	27,600.00	20,336.04
Reserve for repairs.....	5,910.00	4,980.00
Total cost.....	70,061.75	45,015.06
Distribution lines:		
Inspection and maintenance.....	45,641.80	35,678.82
Reserve for depreciation.....	43,800.00	16,521.24
Total cost.....	89,441.80	52,200.06
Grand total cost of distributed power.....	518,807.58	319,958.64
Total kilowatt-hours.....	49,267,865	45,560,996
Total unit cost.....	\$0.0105	\$0.0070

TABLE No. 33.—Detailed cost of production of water per 1,000 gallons.

	Fiscal year 1922.			Fiscal year 1923.		
	Total cost.	Quantity.	Unit cost.	Total cost.	Quantity.	Unit cost.
Ancon-Balboa-Panama system:		<i>Thousand gallons.</i>			<i>Thousand gallons.</i>	
Operation, pump station, Gamboa.....	\$61,605.72	3,325,480	\$0.0185	\$71,279.05	3,468,510	\$0.0206
Operation, pump station, Balboa.....	41,654.45	2,143,772	.0194	45,347.30	2,097,481	.0216
Operation, filtration plant, Miraflores.....	81,262.65	2,786,935	.0292	67,110.72	2,717,255	.0247
Maintenance water mains and reservoirs.....	59,425.87	3,325,480	.0179	63,757.77	3,468,510	.0184
Total.....	243,948.69	3,325,480	.0850	247,494.84	3,468,510	.0853
Distribution of water:						
Panama.....		1,048,626			1,063,952	
Canal Zone, other than Army and Navy.....		1,966,249			2,138,566	
United States Army and Navy, Fort Clayton, Corozal, and Balboa.....		281,608			234,485	
Commercial shipping.....		20,264			19,877	
United States Army and Navy vessels.....		8,458			11,274	
Panama R. R. steamships.....		275			356	
Total.....		3,325,480			3,468,510	
Gatun system:						
Operation, pump station, Agua Clara.....	21,758.51	380,627	.0572	21,554.23	391,322	.0551
Operation, filtration plant, Agua Clara.....	14,204.11		.0373	20,699.83		.0529
Maintenance, reservoir, Agua Clara.....	8,032.07		.0211	9,348.24		.0239
Maintenance, water mains.....	6,671.27		.0175	4,117.06		.0105
Total.....	50,665.96	380,627	.1331	55,719.36	391,322	.1424
Distribution of water:						
Canal Zone, other than United States Army.....		181,043			197,923	
United States Army, Fort Davis, and Fort Sherman.....		199,584			193,399	
Total.....		380,627			391,322	

TABLE NO. 33.—Detailed cost of production of water per 1,000 gallons—Continued.

	Fiscal year 1922.			Fiscal year 1923.		
	Total cost.	Quantity.	Unit cost.	Total cost.	Quantity.	Unit cost.
Cristobal-Colon System:		<i>Thousand gallons.</i>			<i>Thousand gallons.</i>	
Operation, pump station, Mount Hope.....	\$32,412.59	1,552,495	\$.0209	\$34,071.79	1,484,799	\$.0229
Operation, filtration plant, Mount Hope.....	22,648.22		.0146	20,527.86		.0138
Maintenance, reservoir, Mount Hope.....	9,835.63		.0063	9,514.15		.0064
Maintenance, water mains.....	21,732.93		.0140	27,844.47		.0188
Total.....	86,629.28	1,552,495	.0558	91,958.27	1,484,799	.0619
Distribution of water:						
Colon.....		648,722			719,638	
New Cristobal.....		46,505			32,905	
Canal Zone, other than United States Army.....		521,607			387,561	
United States Army and Navy submarine base, Fort Randolph, France Field, and Cristobal....		245,704			266,929	
Commercial shipping.....		65,376			61,443	
United States Army and Navy vessels.....		5,963			5,322	
Panama R. R. steamships.....		18,618			11,001	
Total.....		1,552,495			1,484,799	
Additional raw water furnished to cold-storage plant direct from reservoir and through mains for short distance only, estimated....		730,000			720,000	
Grand total.....		2,282,495			2,204,799	

TABLE NO. 34.—Dredging operations (channel maintenance).

	Gaillard Cut. <sup>1</sup>		Pacific entrance.		Balboa inner harbor.		Total.
	Cost.	Unit cost.	Cost.	Unit cost.	Cost.	Unit cost.	
Dredging:							
Dipper dredges.....	\$524,786.95	\$0.2101	\$85,610.42	\$0.0591			\$610,397.37
Suction dredges.....	34,222.27	.0137	60,220.07	.0415	\$38,224.69	\$0.051	132,667.03
Total dredging.....	559,009.22	.2236	145,830.49	.1006	38,224.69	.0501	743,064.40
Towing:							
Tugs and scows.....	495,104.23	.1982	41,588.36	.0287	275.30	.0004	536,967.89
Miscellaneous floating equipment.....	27,088.93	.0108	10,567.48	.0073	2,495.23	.0032	40,151.64
Total towing.....	522,193.16	.2089	52,155.84	.0360	2,770.53	.0036	577,119.53
Other expenses:							
Hydraulic graders.....	35,943.25	.0144					35,943.25
Drill barges.....	69,648.30	.0279					69,648.30
Pipe lines.....	12,178.52	.0049	2,216.49	.0015	7,694.25	.0101	22,089.26
Shuicing.....	32,674.85	.0131					32,674.85
Blasting.....	74,589.16	.0298					74,589.16
Drilling.....	115,348.12	.0461					115,348.12
Surveys.....	35,844.77	.0143	5,159.64	.0036	2,017.88	.0026	43,022.29
Channel lights.....	367.45	.0001					367.45
Dikes.....	1,120.31	.0004	4,046.04	.0028	1,378.45	.0018	6,544.80
Relay pumps.....	2,047.77	.0008					2,047.77
Total other expenses.....	379,762.50	.1519	11,422.17	.0079	11,090.58	.0145	402,275.25
Division overhead.....	146,709.95	.0587	29,898.94	.0203	5,491.37	.0072	181,600.26
Total.....	1,607,674.83	.6431	238,807.44	.1648	57,577.17	.0754	1,904,059.44
Indirect charges.....	92,000.50	.0368	13,005.70	.0089	2,142.28	.0028	107,148.48
Grand total.....	1,699,675.33	.6799	251,813.14	.1737	59,719.45	.0782	2,011,207.92

<sup>1</sup> Includes removal of La Pita Point, \$774,187.98.

TABLE No. 34.—*Dredging operations (channel maintenance)*—Continued.

	Gaillard Cut.		Pacific entrance.		Balboa inner harbor.		Total.
	Cost.	Unit cost.	Cost.	Unit cost.	Cost.	Unit cost.	
Quantities excavated:	<i>Cubic yards.</i>		<i>Cubic yards.</i>		<i>Cubic yards.</i>		<i>Cubic yards.</i>
Dipper dredging—							
Earth.....		646,600		44,800			691,400
Rock.....		1,428,350		87,100			1,515,450
Suction dredges—							
Earth.....		421,950		1,318,150		767,450	2,507,550
Total.....		2,496,900		1,450,050		767,450	4,714,400

TABLE No. 36.—*Postal service—Statement showing the monthly money-order business of the Canal Zone postal service during the fiscal year ended June 30, 1923.*

Month.	Money orders issued, including deposit money orders.		Interest paid on deposit money orders.	Money orders paid by Canal Zone post offices.			Canal Zone money orders paid by—		
	Number.	Amount.		United States.	Costa Rica.	Canal Zone. <sup>1</sup>	Martini-que.	Costa Rica.	United States.
1922.									
July.....	9,084	\$231,351.93	\$832.95	\$14,712.50	\$101.25	\$98,005.73	\$5.00	.....	\$117,988.47
August.....	8,670	204,245.15	780.25	17,470.27	40.00	94,526.52	5.00	.....	174,591.94
September.....	8,646	202,134.47	523.56	16,630.17	4.90	72,359.42	.....	\$555.10	89,238.49
October.....	8,604	190,055.88	426.99	14,736.28	2.40	67,960.93	3.00	.....	137,747.90
November.....	9,986	209,299.82	581.99	14,670.67	8.00	73,333.86	9.00	.....	89,968.22
December.....	11,111	215,195.39	574.48	19,771.59	58.00	76,795.08	14.00	665.12	92,383.33
1923.									
January.....	10,034	226,879.52	635.23	15,819.90	.60	64,489.14	50.00	.....	190,976.50
February.....	10,477	247,758.46	446.78	16,519.14	.....	58,494.19	14.00	.....	132,829.73
March.....	14,003	337,637.41	532.19	19,421.33	4.50	63,228.29	.....	472.00	135,245.03
April.....	9,894	221,936.91	706.09	19,421.17	.....	84,486.07	10.00	.....	241,365.07
May.....	10,081	212,381.91	1,198.74	24,053.92	.....	106,459.16	2.00	.....	187,329.71
June.....	9,035	208,733.70	1,032.87	22,785.12	13.36	92,566.67	2.50	540.29	142,701.61
Total.....	119,575	2,707,610.55	8,362.12	216,012.06	233.01	954,705.06	114.50	2,232.51	1,732,366.00

<sup>1</sup>Including deposit money orders.TABLE No. 37.—*Postal Service—Statement of audited revenues, fiscal years 1907 to 1923, inclusive.*

Year.	Receipts.						Interest on money-order funds.
	Miscellaneous.	Money-order fees.	Stamp sales.	Box rent.	Newspaper postage.	Total revenue.	
1907.....		\$9,832.65	\$54,803.79	.....	.....	\$64,636.44	
1908.....		19,309.14	72,708.67	.....	\$0.87	92,018.68	
1909.....		21,720.93	74,241.87	.....	85.53	96,048.33	
1910.....		22,980.96	83,765.60	.....	81.50	106,828.06	
1911.....		23,457.98	82,585.21	.....	28.51	106,071.70	
1912.....		22,889.93	87,497.21	.....	144.24	110,531.38	
1913.....		23,366.31	100,599.15	.....	318.84	124,284.30	
1914.....		19,408.44	90,792.63	.....	463.67	110,664.74	
1915.....		13,169.55	75,202.29	\$2,973.65	988.50	92,333.99	
1916.....		12,878.29	76,337.08	5,029.50	1,410.39	95,655.26	
1917.....	\$1,207.59	12,371.28	74,474.98	8,100.00	1,703.89	97,857.74	\$12,884.57
1918.....	1,344.75	11,918.35	83,939.74	8,147.30	1,825.38	107,175.52	32,940.22
1919.....	2,313.25	10,424.16	81,723.76	8,268.20	2,553.88	105,283.25	25,746.20
1920.....	1,951.64	10,207.59	87,096.72	8,776.55	1,782.53	109,815.03	22,141.38
1921.....	2,522.35	11,606.28	102,354.76	11,605.20	1,268.77	129,357.36	25,803.10
1922.....	2,152.09	9,153.56	93,683.24	10,637.50	1,525.87	117,152.26	32,696.81
1923.....	2,211.64	9,889.70	93,532.29	10,733.55	1,834.07	118,201.25	25,173.21
Total....	13,703.31	264,585.10	1,415,338.99	74,271.45	16,016.44	1,783,915.29	177,385.49

TABLE NO. 38.—*Postal Service—Statement of postal revenues, fiscal year ended June 30, 1923.*

Month.	Receipts.						Interest on money-order funds.
	Miscellaneous.	Money-order fees.	Stamp sales.	Box rent.	Newspaper postage.	Total revenue.	
1922.							
July.....	\$174.68	\$719.18	\$6,154.21	\$983.55	\$96.90	\$8,128.52	\$2,903.83
August.....	368.12	733.16	7,336.50	92.95	98.60	8,629.33	1,326.98
September.....	149.26	709.64	6,186.06	1,423.15	284.27	8,752.38	1,119.27
October.....	170.96	698.59	6,697.68	1,101.05	221.97	8,890.25	6,005.86
November.....	158.74	797.49	7,875.43	78.35	133.48	9,043.49	1,052.78
December.....	183.97	892.86	10,597.05	1,483.60	155.98	13,313.46	942.42
1923.							
January.....	165.01	784.25	7,511.21	1,128.20	144.70	9,733.37	2,434.44
February.....	171.43	916.20	8,455.19	76.25	125.93	9,745.00	938.79
March.....	188.03	1,296.13	10,381.07	1,781.65	140.62	13,787.50	4,940.54
April.....	174.85	777.73	7,417.73	880.85	147.92	9,399.08	1,129.22
May.....	136.15	768.70	7,318.25	83.85	142.49	8,449.44	1,244.10
June.....	170.44	795.77	7,601.91	1,620.10	141.21	10,329.43	1,134.98
Total.....	2,211.64	9,889.70	93,532.29	10,733.55	1,834.07	118,201.25	25,173.21

TABLE NO. 39.—*Postal Service—Statement of postal-savings payments and deposit money-order transactions (in lieu of Postal Savings System) for fiscal year ended June 30, 1923.*

Month.	Postal-savings certificates.		Deposit money orders.		
	Balance July 1, 1922.	Paid.	Balance July 1, 1922.	Issued.	Paid.
1922.					
July.....	\$208		\$437,200	\$91,980	\$81,530
August.....				60,025	77,195
September.....				64,825	59,495
October.....				56,305	55,310
November.....				62,060	61,915
December.....				53,575	63,725
1923.					
January.....				81,460	50,395
February.....		\$27		64,780	45,290
March.....				72,565	48,710
April.....				74,525	70,755
May.....				71,090	89,995
June.....				60,575	76,100
Balance unpaid, June 30, 1923.		181			470,550
Total.....	208	208	437,200	813,765	1,250,965

TABLE NO. 42.—*Summary of income and expenses, bureau of clubs and playgrounds, fiscal year 1923.*

## EXPENDITURES.

	Ancon.	La Boca.	Balboa.	Pedro Miguel.	Paraiso.	Gatun.	Gatun Silver.
Soda fountain inventory, July 1, 1922.....	\$345.87	\$151.43	\$995.71	\$222.16	\$152.03	\$360.35	\$206.34
Cigars and candy inventory, July 1, 1922.....	1,216.43	495.26	3,119.24	240.05	562.01	795.85	284.44
Salable merchandise inventory, July 1, 1922.....	1,549.03		5,198.10	188.04		807.70	
Bureau of clubs and playgrounds' stock inventory, July 1, 1922.....							
Total expenditures, fiscal year 1923.....	54,653.86	25,916.80	147,665.00	10,453.81	19,261.02	23,249.60	13,985.37
Earnings, fiscal year 1923.....	3,465.10	6,268.93	10,327.33	197.65	4,982.73	298.94	2,456.66
Total.....	61,230.29	32,832.42	167,305.38	11,301.71	24,957.79	25,512.44	16,932.81



TABLE No. 42.—*Summary of income and expenses, bureau of clubs and playgrounds, fiscal year 1923—Continued.*

## EXPENDITURES—Continued.

	Cristobal.	Cristobal Silver.	Red Tank.	Balboa boat-house.	Bureau of clubs and playgrounds' stock.	General secretary.	Total.
Soda fountain inventory, July 1, 1922.....	\$366.75	\$128.58	\$125.38	\$23.91	.....	.....	\$3,078.51
Cigars and candy inventory, July 1, 1922.....	969.06	984.80	378.75	57.85	.....	.....	9,103.74
Salable merchandise inventory, July 1, 1922.....	747.00	.....	.....	297.10	.....	.....	8,786.97
Bureau of clubs and playgrounds' stock inventory, July 1, 1922.....	.....	.....	.....	.....	\$14,126.35	.....	14,126.35
Total expenditures, fiscal year 1923.....	44,432.16	35,988.29	12,571.83	6,216.22	23,252.12	\$497.67	418,143.75
Earnings, fiscal year 1923.....	7,097.97	9,219.26	1,276.11	153.65	1,974.23	2,493.07	47,050.87
Total.....	53,612.94	46,320.93	14,352.07	6,536.43	36,404.24	2,990.74	500,290.19

## INCOME.

	Ancon.	La Boca.	Balboa.	Pedro Miguel.	Paraiso.	Gatun.	Gatun Silver.
Soda fountain inventory, June 30, 1923.....	\$544.80	\$388.10	\$1,606.72	\$166.86	\$205.04	\$336.26	\$249.27
Cigars and candy inventory, June 30, 1923.....	1,047.99	385.53	2,381.59	171.84	448.51	400.77	433.90
Salable merchandise inventory, June 30, 1923.....	1,372.58	.....	6,187.56	70.67	.....	786.04	.....
Bureau of clubs and playgrounds' stock inventory, June 30, 1923.....	.....	.....	.....	.....	.....	.....	.....
Total income, fiscal year 1923.....	58,264.92	32,058.79	157,129.51	10,892.34	24,304.24	23,989.87	16,249.64
Total.....	61,230.29	32,832.42	167,305.38	11,301.71	24,957.79	25,512.44	16,932.81

	Cristobal.	Cristobal Silver.	Red Tank.	Balboa boat-house.	Bureau of clubs and playgrounds' stock.	General secretary.	Total.
Soda fountain inventory, June 30, 1923.....	\$373.70	\$161.14	\$187.18	.....	.....	.....	\$4,219.07
Cigars and candy inventory, June 30, 1923.....	676.59	611.75	284.04	\$383.01	.....	.....	7,225.52
Salable merchandise inventory, June 30, 1923.....	1,016.92	.....	.....	66.33	.....	.....	9,500.10
Bureau of clubs and playgrounds' stock inventory, June 30, 1923.....	.....	.....	.....	.....	\$10,282.96	.....	10,282.96
Total income, fiscal year 1923.....	51,545.73	45,548.04	13,880.85	6,087.09	26,121.28	\$2,990.74	469,062.54
Total.....	53,612.94	46,320.93	14,352.07	6,536.43	36,404.24	2,990.74	500,290.19

<sup>1</sup> Losses.TABLE No. 43.—*Bureau of clubs and playgrounds, balance sheet June 30, 1923.*

ASSETS.		LIABILITIES.	
Cash on hand:		Surplus:	
Secretaries' balances...	\$6,440.06	To June 30, 1922.....	\$114,521.56
Deposited with collector.....	137,327.38	Profit, current fiscal year.....	47,050.87
	\$143,767.44		\$161,572.43
Inventories:		Accounts payable: Audited vouchers.....	24,374.25
Soda fountain.....	4,219.07		
Cigars and candy.....	7,225.52		
Salable merchandise.....	9,500.10		
Bureau of clubs and playgrounds' stock.....	10,282.96		
	31,227.65		
Accounts receivable: Registered bills.....	10,951.59		
Total.....	185,946.68	Total.....	185,946.68



TABLE NO. 44.—*Commissary coupons issued, sold, and honored during the fiscal year 1923.*

## COUPON BOOKS ISSUED ON PAY ROLL DEDUCTION.

Month.	\$2.50 silver.		\$5 silver.		\$7.50 silver.		\$5 gold.		\$15 gold.		Total value.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
July.....	1,957	\$4,892.50	17,582	\$87,910.00	5,286	\$39,645.00	717	\$3,585.00	5,247	\$78,705.00	\$214,737.50
August.....	994	2,485.00	18,213	91,065.00	5,875	44,062.50	738	3,690.00	5,257	78,855.00	220,157.50
September.....	1,980	4,950.00	17,674	88,370.00	5,481	41,107.50	710	3,550.00	5,407	81,105.00	219,082.50
October.....	1,596	3,990.00	18,495	92,475.00	5,717	42,877.50	769	3,845.00	5,736	86,040.00	229,227.50
November.....	1,507	3,767.50	18,522	92,610.00	5,508	41,310.00	791	3,955.00	6,134	92,010.00	233,652.50
December.....	1,659	4,147.50	21,239	106,195.00	7,238	54,285.00	881	4,405.00	7,226	108,390.00	277,422.50
January.....	1,515	3,787.50	19,085	95,425.00	5,865	43,987.50	827	4,135.00	6,270	94,050.00	241,385.00
February.....	1,741	4,352.50	18,807	94,035.00	5,678	42,585.00	784	3,920.00	6,039	90,585.00	235,477.50
March.....	1,859	4,647.50	20,004	100,020.00	6,213	46,597.50	839	4,195.00	6,123	91,845.00	247,305.00
April.....	1,732	4,330.00	20,197	100,985.00	6,079	45,592.50	860	4,300.00	6,162	92,430.00	247,637.50
May.....	1,582	3,955.00	20,313	101,565.00	6,741	50,557.50	880	4,400.00	6,235	93,525.00	254,002.50
June.....	1,730	4,325.00	20,035	100,175.00	6,471	48,532.50	797	3,985.00	6,045	90,675.00	247,692.50
Total.....	19,852	49,630.00	230,166	1,150,830.00	72,152	541,140.00	9,593	47,965.00	71,881	1,078,215.00	2,887,780.00

## COUPON BOOKS SOLD FOR CASH.

July.....	984	\$2,460.00	905	\$4,525.00	72	\$540.00	7,683	\$38,415.00	3,311	\$49,665.00	\$95,605.00
August.....	1,794	4,485.00	719	3,595.00	80	600.00	7,302	36,510.00	3,152	47,280.00	92,470.00
September.....	2,069	5,172.50	602	3,010.00	112	840.00	7,117	35,585.00	3,343	50,145.00	94,752.50
October.....	1,841	4,602.50	534	2,670.00	103	772.50	6,857	34,285.00	3,298	49,470.00	91,800.00
November.....	2,063	5,157.50	620	3,100.00	82	615.00	7,627	38,135.00	3,391	50,865.00	97,872.50
December.....	2,212	5,350.00	790	3,950.00	73	547.50	8,653	43,265.00	3,997	59,955.00	113,247.50
January.....	1,931	4,827.50	524	2,620.00	59	442.50	6,768	33,840.00	3,177	47,655.00	89,385.00
February.....	2,257	5,642.50	625	3,125.00	80	600.00	7,578	37,890.00	3,621	54,315.00	101,572.50
March.....	3,933	9,832.50	770	3,850.00	114	855.00	11,269	56,345.00	4,640	69,600.00	140,482.50
April.....	2,038	5,095.00	667	3,335.00	112	840.00	7,062	35,310.00	3,397	50,955.00	95,535.00
May.....	2,224	5,560.00	683	3,415.00	82	615.00	7,741	38,705.00	3,469	52,035.00	100,330.00
June.....	2,254	5,635.00	698	3,490.00	102	765.00	7,872	39,360.00	3,504	52,560.00	101,810.00
Total.....	25,600	64,000.00	8,137	40,685.00	1,071	8,032.50	93,529	467,645.00	42,300	634,500.00	1,214,882.50

TABLE NO. 44.—*Commissary coupons issued, sold, and honored during the fiscal year 1923—Continued.*

## COUPON BOOKS SOLD ON CREDIT.

Month.	\$2.50 silver.		\$5 silver.		\$7.50 silver.		\$5 gold.		\$15 gold.		Total value.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	
July.....							232	\$1,160.00	162	\$2,430.00	\$3,590.00
August.....							206	1,030.00	164	2,460.00	3,490.00
September.....							193	965.00	176	2,640.00	3,605.00
October.....							203	1,015.00	213	3,195.00	4,210.00
November.....							240	1,200.00	229	3,435.00	4,635.00
December.....							201	1,005.00	251	3,765.00	4,770.00
January.....							195	975.00	192	2,880.00	3,855.00
February.....							229	1,145.00	218	3,270.00	4,415.00
March.....							227	1,135.00	253	3,795.00	4,930.00
April.....							172	860.00	223	3,345.00	4,205.00
May.....	150	\$375.00	250	\$1,250.00			292	1,460.00	224	3,360.00	6,445.00
June.....							161	805.60	250	3,750.00	4,555.00
Total.....	150	375.00	250	1,250.00			2,551	12,755.00	2,555	38,325.00	52,705.00

## COMMISSARY COUPONS HONORED.

Month.	Commissaries.	Tivoli.	Marine equipment.	Panama Canal club-houses.	Balboa community house.	Army and Navy Y. M. C. A.	Y. W. C. A.	Balboa boathouse.	Restaurant under contract.	Total value.
July.....	\$298,707.04	\$117.94	\$11.50	\$8,766.37	\$19.61	\$210.43	\$16.75	\$26.14	\$18,251.41	\$326,127.19
August.....	288,574.53	136.84	28.94	8,848.50	43.39	148.08	.....	28.95	17,680.96	315,490.19
September.....	291,118.37	170.25	19.01	8,901.39	33.37	131.89	.....	28.42	16,576.79	316,979.49
October.....	293,000.89	125.42	27.51	9,540.67	28.27	121.09	56.82	38.33	20,011.22	322,948.22
November.....	306,582.71	217.53	17.65	8,976.16	51.21	124.80	173.04	29.97	19,471.59	335,644.66
December.....	375,674.76	242.93	8.05	9,507.66	49.62	178.42	104.84	47.01	19,643.18	405,456.47
January.....	291,216.32	262.90	10.00	9,827.50	71.87	178.31	134.41	76.42	20,914.36	322,692.09
February.....	304,737.23	225.25	38.30	9,811.46	170.31	150.77	80.89	71.52	18,480.28	333,766.01
March.....	377,145.53	114.67	30.99	11,006.88	155.23	199.18	118.84	73.72	20,071.48	408,916.52
April.....	304,007.41	71.56	27.50	10,518.86	142.58	184.15	171.26	40.70	19,213.00	334,377.02
May.....	328,555.92	215.46	24.00	11,483.06	89.08	186.68	163.56	51.02	19,319.05	360,087.83
June.....	306,269.09	123.31	17.85	10,896.99	106.09	140.50	79.82	54.60	19,391.71	337,079.96
Total.....	3,765,589.80	2,024.06	261.30	118,085.50	960.63	1,954.30	1,100.23	564.80	229,025.03	4,119,565.65

TABLE NO. 59.—Summary of commercial traffic through The Panama Canal during the fiscal year 1923 and since its opening to commercial traffic.

	Atlantic to Pacific.				Pacific to Atlantic.				Total.			
	Vessels.	Tonnage.		Tons of cargo.	Vessels.	Tonnage.		Tons of cargo.	Vessels.	Tonnage.		Tons of cargo.
		Registered gross.	Registered net.			Registered gross.	Registered net.			Registered gross.	Registered net.	
1922.												
July.....	128	722,758	453,528	542,412	123	696,996	446,871	668,688	251	1,419,754	900,399	1,211,100
August.....	141	765,642	478,744	556,761	116	593,275	374,468	609,189	257	1,358,917	853,312	1,165,950
September.....	126	725,894	453,209	467,836	114	607,207	384,726	670,352	240	1,333,101	837,935	1,138,188
October.....	159	899,040	565,986	555,075	135	753,395	476,980	880,788	294	1,652,435	1,042,966	1,445,863
November.....	148	863,193	539,277	501,378	146	806,293	505,556	925,482	294	1,669,486	1,044,833	1,426,860
December.....	161	907,121	564,475	560,418	143	827,557	526,957	974,684	304	1,734,678	1,091,432	1,535,102
Total.....	863	4,883,648	3,055,219	3,193,880	777	4,284,723	2,715,558	4,729,183	1,640	9,168,371	5,770,777	7,923,063
1923.												
January.....	194	1,167,899	725,623	598,743	158	862,347	541,358	993,189	352	2,030,246	1,266,981	1,591,932
February.....	175	1,070,890	680,637	563,439	151	872,804	551,092	999,839	326	1,943,694	1,231,729	1,563,278
March.....	233	1,444,048	911,594	678,488	176	1,088,109	690,625	1,262,440	409	2,532,157	1,602,219	1,940,928
April.....	204	1,306,995	823,665	653,369	200	1,272,556	803,668	1,533,776	404	2,579,551	1,627,333	1,927,145
May.....	229	1,467,094	929,315	742,351	190	1,272,944	801,474	1,522,732	419	2,740,038	1,730,789	2,265,083
June.....	227	1,433,594	900,817	655,989	190	1,202,290	759,049	1,440,457	417	2,635,884	1,659,866	2,096,446
Total.....	1,262	7,893,520	4,971,651	3,892,379	1,065	6,571,050	4,147,266	7,752,433	2,327	14,464,570	9,118,917	11,644,812
Total for fiscal year.....	2,125	12,777,168	8,026,870	7,086,259	1,842	10,855,773	6,862,824	12,481,616	3,967	23,632,941	14,889,694	19,567,875
Fiscal year ending June 30—												
1915.....	522	2,657,865	1,860,276	2,070,993	553	2,758,922	1,932,296	2,817,461	1,075	5,416,787	3,792,572	4,888,454
1916.....	396	1,912,846	1,277,728	1,369,019	362	1,683,683	1,118,434	1,725,095	758	3,596,529	2,396,162	3,094,114
1917.....	874	4,170,733	2,819,848	2,929,260	929	4,360,088	2,978,700	4,129,303	1,803	8,530,821	5,798,557	7,058,563
1918.....	915	3,938,042	2,736,542	2,639,300	1,154	5,433,297	3,837,531	4,892,731	2,069	9,371,439	6,574,073	7,532,031
1919.....	857	3,458,417	2,673,958	2,740,254	1,167	4,418,186	3,451,032	4,176,367	2,024	7,876,603	6,124,990	6,916,621
1920.....	1,180	5,391,567	4,168,873	4,092,516	1,298	5,668,252	4,377,171	5,281,983	2,478	11,059,819	8,545,044	9,374,490
1921.....	1,471	7,287,556	5,740,902	5,892,078	1,421	7,234,859	5,674,974	5,707,136	2,892	14,522,415	11,415,876	11,599,214
1922.....	1,509	8,006,781	6,404,172	5,495,934	1,227	6,354,302	5,013,287	5,388,976	2,736	14,361,083	11,417,459	10,884,910
1923.....	2,125	12,777,168	8,026,870	7,086,259	1,842	10,855,773	6,862,824	12,481,616	3,967	23,632,941	14,889,694	19,567,875
Total.....	9,849	49,600,975	35,709,169	34,315,613	9,953	48,767,362	35,246,258	46,600,668	19,802	98,368,337	70,955,427	80,916,281

TABLE NO. 60.—Number of commercial vessels of various nationalities passing through The Panama Canal.

	Argentinian.	Belgian.	Brazilian.	British.	Canadian.	Chilean.	Chinese.	Colombian.	Costa Rican.	Cuban.	Danish.	Dutch.	Ecuadorian.	Finnish.	French.	German.	Greek.	Honduran.	Italian.	Japanese.	Yugo-Slav.	Mexican.	Nicaraguan.	Norwegian.	Panaman.	Peruvian.	Portuguese.	Russian.	Spanish.	Swedish.	United States.	Uruguayan.	Total.	
ATLANTIC TO PACIFIC.																																		
1922.																																		
July.....	1			48		3			1		3	2			1	3			1	6				6	1	2				2	52		128	
August.....				46		3					3	3			3	2				8				7		4			1	2	58		141	
September.....				42		3					2	4			4	3			2	8				1		2				1	54		126	
October.....				57		1					1	4			3	3				7				6		5			1	1	70		159	
November.....				43		2					3	4			1	5			1	10				5	5	3				1	65		148	
December.....				52		1					5	4			1	4			1	4		1		5	2	3					78		161	
1923.																																		
January.....				56		5		2			4	7			4	6	1		2	4				5	3	4			2	1	88		194	
February.....				41		1		2			11				6	5			2	6				3	1	3			1	2	97		175	
March.....				58		4		1			3	7			3	4	1		2	10				14	4	2				1	119		233	
April.....				48		3		2			4	2			4	4			2	4				4	1	3					123		204	
May.....				54		3		1			2	4			3	5			2	9				6	1	4		1		1	133		229	
June.....				54		3		1			1	4			5	5			1	9				6	1	4			1	1	131		227	
Total fiscal year:																																		
1923.....	1			599		32		9	1		29	56			32	49	2		15	85		1		69	19	39			6	13	1,068		2,125	
1922.....				533		27			1		25	34			28	20	3		11	122		6		68	3	30			4	21	573		1,509	
1921.....		1		502		40	2		8		28	26			26	3			13	86	1	4		76	5	32		1	22	15	579		1,471	
1920.....			2	393		38	2				4	17			9	5			13	84				46	3	37	1	2	20	10	493	1	1,180	
1919.....				306	2	48	2	1	6		37	6			29		1			47				56		33		3	2	10	267	1	857	
1918.....				305		50			10		44	30			19		1		2	33				145	4	41			5	12	218		915	
1917.....				371		50			11	3	26	36			4				1	54		6	1	70	4	43		1	10	7	176		874	
1916.....				193		16					10	11						1	1	19				18	2	16				5	103		396	
1915.....				226	1	16					11	5			2			2	1	4				16		2		5		7	223		522	
Total.....	1	1	3	3,428	3	317	6	10	37	3	214	221			149	77	7	3	57	534	1	17	2	564	36	273	1	13	69	100	3,700	2	9,849	
PACIFIC TO ATLANTIC.																																		
1922.																																		
July.....				37		3						2			1	3			1	14				2		3			1	3	55		123	
August.....				34		1					2	4			4	2				9				7		3					48		116	
September.....				34		3					4	2			3	2			1	3				4	1	3				1	3	53		114
October.....				38		2					4	3			4	3				11				12		5					51		135	
November.....		2		43		2					5	5			2	5	2		2	4				11		4				1	3	55		146
December.....		1		49		1					2	2			2	1			1	6				5	1	3				1	68		143	

[illegible]



TABLE NO. 61-A.—Origin and destination of all commercial cargo passing through The Panama Canal from the Atlantic to the Pacific, fiscal year 1923.

[Figures represent tons of 2,240 pounds.]

Month.	From—								Total from Atlantic ports.	To—										Total to Pacific ports.	
	West Indies.	South America, east coast.	Canada, east coast.	Mexico, east coast.	Cristobal, Canal Zone.	British Isles.	Other European.	United States, east coast.		South America, west coast.	United States, west coast.	Far East.	Australasia.	Canada, west coast.	Central America, west coast.	Balboa, Canal Zone.	Mexico, west coast.	North America, west coast, unidentified.	Hawaii.		Miscellaneous.
1922.																					
July.....	6,314	212	8,388	42,097	8,532	60,207	26,076	390,586	542,412	78,622	200,938	175,853	52,177	12,629	3,773	6,058	380	8,477	3,505	542,412	
August.....	11,797	10,228	42,800	6,563	80,067	37,485	367,821	556,761	122,111	214,929	139,821	70,194	883	3,161	90	1,675	3,897	556,761		556,761	
September..	40	8,853	3,782	7,823	6,035	46,163	50,360	344,780	467,836	56,081	210,263	118,580	64,937	782	1,803	42	1,225	11,720	2,403	467,836	
October.....	3,218	8,550	11,490	33,885	6,656	98,984	48,938	353,354	565,075	112,284	219,216	110,518	86,316	4,909	3,544	749	22,702	4,837		565,075	
November...	375	4,655	2,060	22,005	7,264	74,547	51,140	339,332	501,378	84,285	215,785	97,232	69,165	10,053	3,984	3,795	600	6,340	4,308	501,378	
December..	6,000	8,827	9,385	9,443	6,898	55,636	34,678	429,551	560,418	82,687	281,598	90,791	78,675	8,159	5,681	4,975		5,039	2,813	560,418	
1923.																					
January.....	2,914	8,236	6,882	20,427	8,362	105,117	61,935	384,870	598,743	100,462	288,612	87,398	75,253	20,395	9,107	7,044		8,417	2,055	598,743	
February.....	1,230	5,500	21,466	7,378	65,636	55,925	406,304	563,439	72,087	303,742	86,447	80,772	854	4,560	9			13,049	1,919	563,439	
March.....	3,000	8,238	16,467	14,045	8,321	84,515	59,729	484,173	678,488	86,862	288,424	146,167	114,735	5,222	8,144	5,014	421	13,400	10,099	678,488	
April.....	7,592	13,986	4,209	34,033	9,303	66,152	47,328	470,766	653,369	98,883	283,117	134,528	92,547	9,849	4,775	10,060	293	15,781	3,536	653,369	
May.....	6,576	6,317	2,998	18,318	5,102	77,407	55,612	570,021	742,351	83,285	368,520	162,475	91,562	16,770	6,072	496	37	3,960	8,092	742,351	
June.....	567	1,483	11,550	20,220	9,061	80,063	45,478	487,567	655,989	85,458	326,970	120,161	86,318	11,083	4,123	8,380	3,538		6,370	655,989	
Total..	36,596	82,384	92,939	286,562	89,475	894,494	574,684	5,029,125	7,086,259	1,063,107	3,202,114	1,469,971	962,651	101,588	58,727	45,873	7,333	105,521	56,060	13,314	7,086,259

TABLE No. 61-B.—*Origin and destination of all commercial cargo passing through The Panama Canal from the Pacific to the Atlantic, fiscal year 1923.*

[Figures represent tons of 2,240 pounds.]

Month.	From—									Total from Pacific ports.	To—										Total to Atlantic ports.
	Miscellaneous.	North America, west coast, unidentified.	Hawaiian Islands.	Central America, west coast.	Canada, west coast.	Australasia.	Far East.	United States, west coast.	South America, west coast.		United States, east coast.	British Isles.	Other European.	Cristobal, Canal Zone.	Canada, east coast.	West Indies.	South America, east coast.	Mexico, east coast.	Miscellaneous.		
1922.																					
July.....	7,704			4,122	29,199	52,631	57,846	340,241	176,945	668,688	334,549	149,392	163,831	9,522	701	2,693	1,657		6,343	668,688	
August.....	5,905		6,000	5,647	17,580	35,074	46,758	286,728	205,497	609,189	343,330	116,950	119,572	7,183	11,253	8,690	2,211			609,189	
September.....		6,626	11,893	2,752	12,007	29,123	46,056	356,608	205,287	670,352	364,177	105,391	136,400	15,606	275	37,304	93	956	10,150	670,352	
October.....	1,050	15,556		2,493	27,609	7,374	29,594	498,828	298,284	880,788	438,733	166,126	201,871	11,282	14,553	18,809	674		28,740	880,788	
November.....	6,761	5,228	3,712	1,545	41,516	20,000	35,815	453,901	357,004	925,482	504,745	156,408	216,398	8,547	3	18,794	5,827	1,826	12,934	925,482	
December.....	10,505	6,670		2,311	98,544	29,358	39,035	465,087	323,174	974,684	615,021	175,167	148,755	12,975	27	21,739	1,000			974,684	
1923.																					
January.....		8,443	1,326	4,194	111,559	33,017	34,508	459,277	340,865	993,189	541,309	137,446	275,467	17,394		18,622	2,951			993,189	
February.....	4,289	27,391		10,561	61,322	39,141	23,289	525,443	308,403	999,839	669,855	139,340	129,297	7,914	15,044	32,928	3,115	2,346		999,839	
March.....	56	15,959		15,034	44,854	32,287	21,500	769,903	362,847	1,262,440	890,620	128,057	194,281	22,873	398	7,132	1,382	17,697		1,262,440	
April.....	3,127	11,886		17,182	35,250	43,572	31,644	1,036,144	354,971	1,533,776	1,172,232	100,256	126,364	17,806	29,033	15,696	4,955	60,208	7,226	1,533,776	
May.....	24,128	14,898		15,074	70,951	40,203	23,782	1,117,430	216,266	1,522,732	1,128,759	126,159	104,583	18,509	30,097	17,902	25	96,698		1,522,732	
June.....	12,313	9,405		4,751	54,155	36,405	19,474	1,145,992	157,962	1,440,457	1,050,596	127,151	61,752	29,986	23,899	22,399	3,760	120,914		1,440,457	
Total..	75,838	122,062	22,931	85,666	604,546	398,185	409,301	7,455,582	3,307,505	12,481,616	8,053,926	1,627,843	1,878,571	179,597	125,283	222,708	27,650	300,645	65,393	12,481,616	

TABLE NO. 62-A.—Tons of cargo carried by commercial vessels passing through The Panama Canal from its opening to June 30, 1923, by fiscal years.

Nationality.	1915	1916	1917	1918	1919	1920	1921	1922	1923	Total.
Belgian.....					464	406	12,700		23,952	37,522
Brazilian.....						8,916	6,700			15,616
British.....	2,200,514	1,570,660	3,393,750	2,615,675	1,876,939	2,830,268	3,738,257	3,329,861	4,929,317	26,485,241
Chilean.....	50,879	53,573	184,446	153,259	161,340	104,738	61,737	46,182	76,670	892,824
Chinese.....				13,417	13,421	13,700	14,400			54,938
Colombian.....						27			7,054	7,081
Costa Rican.....			3,069	2,091	1,137		2,112		5	8,414
Cuban.....			7,370				1,200			8,570
Danish.....	116,603	94,950	242,567	420,063	325,277	42,533	322,059	272,779	307,876	2,144,707
Dutch.....	26,402	61,959	314,203	233,063	119,297	128,442	216,488	290,573	487,957	1,878,384
Ecuadorian.....					72					72
Finnish.....							7,101			7,101
French.....	13,600	7,176	36,680	159,859	286,812	125,249	132,836	139,463	230,175	1,131,850
German.....						59,239	73,837	121,888	330,134	585,098
Greek.....				5,741	8,301			11,956	30,533	56,531
Honduran.....		321								321
Italian.....	900		5,700	13,793		63,441	47,988	38,851	75,258	245,931
Japanese.....	42,600	117,780	446,358	407,399	503,427	726,338	758,617	1,044,515	943,400	4,990,434
Yugoslavian.....							8,325			8,325
Mexican.....			22,545	253	142		3,785	10		26,735
Nicaraguan.....	6									6
Norwegian.....	166,522	229,368	597,581	1,090,823	577,679	404,323	637,887	408,268	704,292	4,816,743
Panamanian.....			135				872	526	40,589	43,622
Peruvian.....	8,202	62,210	159,609	143,344	121,524	119,418	105,322	64,370	111,519	895,518
Portuguese.....						10,775				10,775
Russian.....	21,030	24	3,230	7,059	8,340	12,867	11,343			63,893
Spanish.....			71,080	35,394	10,047	101,563	143,076	23,701	32,178	417,039
Swedish.....	53,292	47,236	94,515	132,521	143,516	74,244	128,919	141,448	181,810	997,501
United States.....	2,187,904	848,857	1,475,725	2,098,277	2,758,886	4,547,140	5,163,025	4,950,519	11,055,156	35,085,489
Total.....	4,888,454	3,094,114	7,058,563	7,532,031	6,916,621	9,374,499	11,599,214	10,884,910	19,567,875	80,916,281

TABLE NO. 62-B.—*The Panama Canal net tonnage of commercial vessels, by nationality, passing through The Panama Canal from its opening to June 30, 1923, by fiscal years.*

Nationality.	1915	1916	1917	1918	1919	1920	1921	1922	1923	Total.
Argentinian.....		2,335		(1)						2,335
Belgian.....					265	266	8,092		13,524	22,147
Brazilian.....						19,164	4,566			23,730
British.....	1,630,833	1,161,097	2,663,250	2,529,203	1,915,744	2,760,188	3,978,329	3,795,526	4,892,338	25,326,508
Chilean.....	94,638	91,243	265,210	254,841	253,561	212,000	159,727	150,398	201,411	1,683,029
Chinese.....				7,799	15,204	7,799	12,098			42,900
Colombian.....					66				6,030	6,191
Costa Rican.....			1,909	1,577	995	25	2,784	18	45	7,353
Cuban.....			9,292				702			9,994
Danish.....	92,537	68,011	163,882	272,946	213,534	32,221	236,512	227,473	240,053	1,547,169
Dutch.....	21,075	39,642	260,500	197,627	88,299	152,535	248,801	293,428	510,970	1,812,877
Ecuadorian.....					66					66
Finnish.....							4,281			4,281
French.....	10,703	4,343	38,889	147,805	253,774	114,664	155,889	190,171	252,333	1,168,571
German.....						52,755	67,334	122,893	336,149	579,131
Greek.....			6,572		8,003			18,618	23,526	56,719
Honduran.....	122	484								606
Italian.....	4,158	3,861	6,430	17,218		98,692	102,783	73,393	117,782	424,317
Japanese.....	24,897	81,818	291,500	238,814	341,064	515,243	613,245	872,466	753,219	3,732,266
Yugoslavakian.....							4,508			4,508
Mexican.....			24,446	229	113		5,032	2,219	2,292	34,331
Nicaraguan.....	46		1,598							1,644
Norwegian.....	130,776	172,429	490,534	876,024	497,555	397,632	548,227	385,007	597,359	4,095,573
Panamanian.....	15	439	160	60		1,007	1,370	700	61,828	65,579
Peruvian.....	9,403	74,429	218,593	208,958	166,956	191,689	157,495	161,930	216,829	1,406,282
Portuguese.....						9,002				9,002
Russian.....	22,400	1,475	4,546	5,700	5,699	6,093	11,279			57,192
Spanish.....			49,124	24,469	11,066	106,651	117,400	27,264	41,201	377,175
Swedish.....	50,824	41,537	69,202	80,191	95,684	76,825	113,661	124,446	130,361	782,731
United States.....	1,700,145	652,989	1,239,492	1,704,040	2,257,342	3,791,088	4,861,761	4,971,509	10,208,536	31,386,902
Uruguayan.....					(2)	410				410
Total.....	3,792,572	2,396,162	5,798,557	6,574,073	6,124,990	8,546,044	11,415,876	11,417,459	18,605,786	74,671,519

<sup>1</sup> Argentinian navy school ship of 2,187 tons displacement.

<sup>2</sup> Uruguayan cruiser of 3,100 tons displacement.

TABLE No. 63.—Statement showing, by nationality, the number of vessels, the Panama Canal net tonnage, tolls assessed, and tons of cargo carried through The Panama Canal during the first nine years of operation.

Nationality and year.	Number of ships.	Panama Canal net tonnage.	Tolls.	Tons of cargo.
<b>United States:</b>				
1915.....	459	1,700,145	\$2,002,845.77	2,187,904
1916.....	213	652,989	724,219.01	848,857
1917.....	404	1,239,492	1,238,322.63	1,475,725
1918.....	567	1,704,040	1,713,827.23	2,098,277
1919.....	784	2,257,342	2,327,261.48	2,758,886
1920.....	1,129	3,791,088	3,805,924.77	4,547,140
1921.....	1,210	4,861,761	4,784,577.35	5,163,025
1922.....	1,095	4,971,509	4,867,495.81	4,950,519
1923.....	1,994	10,203,536	9,473,819.65	11,055,156
Total.....	7,855	31,386,902	30,938,293.70	35,085,489
<b>British:</b>				
1915.....	465	1,630,833	1,847,341.10	2,200,514
1916.....	358	1,161,097	1,140,395.07	1,570,660
1917.....	780	2,663,250	2,595,158.60	3,393,750
1918.....	702	2,529,203	2,498,596.49	2,615,675
1919.....	607	1,915,744	1,954,715.87	1,876,939
1920.....	753	2,760,183	2,805,018.50	2,830,268
1921.....	972	3,978,329	3,989,281.58	3,738,257
1922.....	935	3,795,526	3,728,007.80	3,329,861
1923.....	1,065	4,892,338	4,736,221.04	4,929,317
Total.....	6,637	25,326,508	25,294,736.05	26,485,241
<b>Norwegian:</b>				
1915.....	42	130,776	141,066.91	166,522
1916.....	44	172,459	149,357.56	229,368
1917.....	145	490,534	448,948.53	597,581
1918.....	296	876,024	823,748.57	1,090,823
1919.....	128	497,555	460,057.68	577,679
1920.....	106	397,632	371,408.79	404,323
1921.....	140	548,227	523,311.94	637,887
1922.....	113	385,007	374,870.62	408,268
1923.....	147	597,359	558,839.74	704,292
Total.....	1,161	4,095,573	3,851,610.34	4,816,743
<b>Japanese:</b>				
1915.....	6	24,897	30,260.40	42,600
1916.....	24	81,818	88,229.68	117,780
1917.....	72	291,500	305,702.63	446,358
1918.....	54	238,814	248,063.30	407,399
1919.....	87	341,064	364,622.57	503,427
1920.....	118	515,243	543,936.93	726,338
1921.....	136	613,245	655,176.51	758,617
1922.....	189	872,466	953,049.00	1,044,515
1923.....	163	753,219	815,638.48	943,400
Total.....	849	3,732,266	4,005,579.50	4,990,434
<b>Chilean:</b>				
1915.....	35	94,638	101,275.95	50,879
1916.....	33	91,243	80,192.25	53,573
1917.....	99	265,210	236,588.20	184,446
1918.....	96	254,841	223,146.30	153,259
1919.....	93	253,561	212,511.90	161,340
1920.....	79	212,000	169,472.55	104,738
1921.....	63	159,727	147,023.75	61,737
1922.....	53	150,398	115,757.90	46,182
1923.....	62	201,411	158,182.50	76,670
Total.....	613	1,683,029	1,444,151.30	892,824
<b>Danish:</b>				
1915.....	24	92,537	110,680.30	116,603
1916.....	18	68,011	66,938.80	94,950
1917.....	43	163,882	141,461.44	242,567
1918.....	100	272,946	249,761.14	420,063
1919.....	79	213,534	207,404.47	325,277
1920.....	9	32,221	43,528.35	42,533
1921.....	60	236,512	241,411.86	322,059
1922.....	53	227,473	222,146.65	272,779
1923.....	65	240,053	221,569.36	307,876
Total.....	451	1,547,169	1,504,902.87	2,144,707



TABLE NO. 63.—Statement showing, by nationality, the number of vessels, the Panama Canal net tonnage, tolls assessed, and tons of cargo carried through The Panama Canal during the first nine years of operation—Continued.

Nationality and year.	Number of ships.	Panama Canal net tonnage.	Tolls.	Tons of cargo.
<b>Dutch:</b>				
1915.....	7	21,075	\$24,103.58	26,402
1916.....	15	39,642	43,910.44	61,959
1917.....	74	260,500	270,321.78	314,203
1918.....	48	197,627	214,211.46	233,063
1919.....	19	88,299	97,467.75	119,297
1920.....	29	152,535	126,868.98	128,442
1921.....	50	248,801	229,248.94	216,488
1922.....	66	293,428	260,138.38	290,573
1923.....	109	510,970	450,356.36	487,957
<b>Total.....</b>	<b>417</b>	<b>1,812,877</b>	<b>1,716,627.67</b>	<b>1,878,384</b>
<b>Peruvian:</b>				
1915.....	4	9,403	10,034.30	8,202
1916.....	30	74,429	67,691.30	62,210
1917.....	86	218,593	199,860.25	159,609
1918.....	83	208,958	177,732.30	143,344
1919.....	64	166,956	133,243.12	121,524
1920.....	75	191,689	161,964.75	119,418
1921.....	60	157,495	107,160.64	105,322
1922.....	60	161,930	103,035.30	64,370
1923.....	80	216,829	152,620.10	111,519
<b>Total.....</b>	<b>542</b>	<b>1,406,282</b>	<b>1,113,842.06</b>	<b>895,518</b>
<b>French:</b>				
1915.....	3	10,703	12,843.60	13,600
1916.....	1	4,343	4,782.50	7,176
1917.....	9	38,889	39,446.42	36,680
1918.....	52	147,905	152,028.03	159,859
1919.....	104	253,774	283,971.06	286,812
1920.....	60	114,664	127,818.17	125,249
1921.....	44	155,889	164,575.94	132,836
1922.....	51	190,171	216,475.40	139,463
1923.....	56	252,333	258,360.69	230,175
<b>Total.....</b>	<b>380</b>	<b>1,168,571</b>	<b>1,260,301.81</b>	<b>1,131,850</b>
<b>Swedish:</b>				
1915.....	17	50,824	58,174.76	53,292
1916.....	13	41,537	35,892.70	47,236
1917.....	18	69,202	56,793.78	94,515
1918.....	26	80,191	74,621.25	132,521
1919.....	27	95,684	88,572.73	143,516
1920.....	19	76,825	62,268.74	74,244
1921.....	25	113,661	93,331.25	128,919
1922.....	35	124,446	105,939.90	141,448
1923.....	31	130,361	108,151.33	151,810
<b>Total.....</b>	<b>211</b>	<b>782,731</b>	<b>683,746.44</b>	<b>997,501</b>
<b>Spanish:</b>				
1917.....	20	49,124	47,731.15	71,080
1918.....	11	24,469	24,032.78	35,394
1919.....	5	11,066	11,092.29	10,047
1920.....	41	106,056	98,228.02	101,563
1921.....	44	117,400	118,548.41	143,076
1922.....	9	27,264	32,712.88	23,701
1923.....	14	41,201	38,102.75	32,178
<b>Total.....</b>	<b>144</b>	<b>376,580</b>	<b>370,448.28</b>	<b>417,039</b>
<b>Italian:</b>				
1915.....	2	4,158	3,992.40	900
1916.....	1	3,861	2,779.92	0
1917.....	2	6,430	6,029.80	5,700
1918.....	4	13,218	16,875.70	11,450
1920.....	26	98,692	98,959.79	63,441
1921.....	25	102,783	103,206.60	47,988
1922.....	20	73,393	75,511.30	38,851
1923.....	29	117,782	119,329.58	75,258
<b>Total.....</b>	<b>109</b>	<b>420,317</b>	<b>426,685.09</b>	<b>243,588</b>

TABLE NO. 63.—*Statement showing, by nationality, the number of vessels, the Panama Canal net tonnage, tolls assessed, and tons of cargo carried through The Panama Canal during the first nine years of operation—Continued.*

Nationality and year.	Number of ships.	Panama Canal net tonnage.	Tolls.	Tons of cargo.
German:				
1922.....	37	122,893	\$120,087.25	121,888
1923.....	90	336,149	312,395.35	330,134
Total.....	127	459,042	432,482.60	452,022
Miscellaneous:				
1915.....	11	22,583	24,931.12	21,036
1916.....	8	4,733	3,700.39	345
1917.....	51	41,951	41,097.84	36,349
1918.....	30	25,937	22,208.60	30,904
1919.....	27	30,411	31,907.67	31,877
1920.....	34	97,211	98,534.81	106,802
1921.....	63	122,046	120,035.14	143,003
1922.....	20	21,555	21,704.22	12,492
1923.....	62	107,245	104,612.64	102,133
Total.....	306	473,672	468,732.43	484,941
Total traffic:				
1915.....	1,075	3,792,572	4,367,550.19	4,888,454
1916.....	758	2,396,162	2,408,089.62	3,094,114
1917.....	1,803	5,798,557	5,627,463.05	7,058,563
1918.....	2,069	6,574,073	6,438,853.15	7,532,031
1919.....	2,024	6,124,990	6,172,828.59	6,916,621
1920.....	2,478	8,546,044	8,513,933.15	9,374,499
1921.....	2,892	11,415,876	11,276,889.91	11,599,214
1922.....	2,736	11,417,459	11,197,832.41	10,884,910
1923.....	3,967	18,605,786	17,508,199.57	19,567,875
Grand total.....	19,802	74,671,519	73,511,639.64	80,916,281

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