

# CANAL RECORD

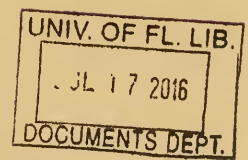
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# CANAL



# RECORD

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# CANAL



# RECORD

Volume IX.

BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, AUGUST 25, 1915.

No. 1.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published weekly. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Sent between July 1 and October 1, 50 cents; between October 1 and January 1, 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between May 1 and September 1, \$1; between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications.

THE CANAL RECORD.

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Second 250-ton Floating Crane Nearly Ready for Test.

The adjustment of the new jib on the 250-ton floating crane *Ajax* is nearing completion, and it is the expectation of the representative of the contractor to submit the completed crane for acceptance tests by September 1. The new jib is similar to the jib of the *Hercules*, the design having been modified slightly after the collapse of the original jib of the *Ajax* on December 9, 1914. The *Hercules* was used to lift the new jib from the wharf to the tower of the *Ajax*, and handled it in two pieces.

### Erection of Shed on New Balboa Pier Begun.

The erection of steel for the shed on the new reinforced concrete pier at Balboa, originally designated as Pier 1 and now named pier No. 18, was begun last week. The dredging of the slips along both sides and the outer end, and the driving of fender piles along the faces of the pier, have been nearly completed. Work is now in progress on the construction of retaining walls, resting on piles, by the use of which the area in the center of the pier, formerly intended for depressed tracks, will be made to hold fill sufficient to raise the level of the interior to that of the sides, and allow the construction of an even floor over the width of the pier.

Contract for the fabrication of the steel for the shed was let to the Riter-Conley Manufacturing Company of Pittsburgh. Erection is being done by the forces of the Division of Terminal Construction. The steel in the shed and its accessories will amount to 3,730,000 pounds, contracted for at 2.18 cents per pound, or a total price of \$81,314.

### The Handling of a Battleship Squadron through the Canal.

The commander of the United States Naval Academy practice squadron, consisting of the battleships *Missouri*, *Ohio*, and *Wisconsin*, which passed through the Canal on July 15 and 16, on the way from Annapolis to San Diego, and comprised the first large warships to make use of the Canal, has forwarded to the Navy Department a report on the passage through the Canal. The report commends the promptness with which all needs of supplies were met by the Canal facilities, and states that promptness and exactness of arrangement marked every detail in the management of every department.

With respect to locking the *Missouri* and the *Ohio* through Pedro Miguel and Miraflores Locks simultaneously in parallel, with the *Wisconsin* directly in the rear, the report states that the centering and control of the vessels by the towing locomotives were so nearly perfect that a division of four ships of the size of these, or even somewhat larger, could be handled through at the same time, two in each of the duplicate chambers. In the case of dreadnoughts, the length of the ships would prevent the handling of more than one in each chamber, or two at a time. However, the entire present main battleship fleet, made up of four divisions of five ships each and a flagship, a total of 21, could be passed through the Canal in one day.

In all the operations, and especially during lockages, the commander of the squadron reported, there was no shouting or confusion at any time, but a celerity of working, in a silent, automatic sequence which showed that the mechanical arrangements were highly efficient and in charge of a well organized and capable force.

The squadron is due to reach Balboa about September 1 on its return voyage to Annapolis. In addition to the time required for passing through the Canal it will remain in Canal waters 24 hours to allow the midshipmen to inspect the construction. Two thousand tons of coal will be taken at Cristobal.

### Reduced Rate to San Francisco on Johnson Line Vessels.

The Panama Agencies Company advises that instructions have been received to make a rate of \$85 to Canal employees for first-class passage to San Francisco from Balboa on vessels of the Johnson Line. The next sailing to San Francisco by this line will be that of the motorship *Suecia*, about September 12, and there will be sailings every 60 days thereafter.

### More Beef for Commissary Branch.

The steamship *Ancon* of the Panama Railroad Steamship Line will sail from Cristobal for Port Limon on Thursday, August 26, for about 700 head of beef cattle for the commissary branch of the Supply Department. Upon her return she will clear for Norfolk, without passengers, to bring a cargo of coal.

## Lines Through the Canal.

### Summary of Regular Services over the Principal Trade Routes.

In the period since January 1 of this year, of the laden vessels which passed through the Canal over one-half have been in the service of approximately regular lines, trading over the five great routes which the Canal serves.

Each of the five routes has its regular lines—the United States coastwise trade, the Europe-North America route, the Europe-South America route, the United States-South America route, and the United States-Far East route. A summary of the principal services over these routes is given herewith.

#### COASTWISE ROUTE.

The United States coastwise trade, between the ports of Boston, New York, Philadelphia, Baltimore, Norfolk, Charleston, New Orleans, and Galveston, principally the three first named, and San Diego, Los Angeles, San Francisco, Portland, Seattle, and Tacoma, is engaged in by the American-Hawaiian Line, which has sailings also to Hawaii, sending a ship through the Canal each way about every five days; the Luckenbach Line, with a sailing each way every week; Crowell and Thurlow, sending a vessel each way about once a month; the Panama Pacific Line, operating the passenger and freight ships *Finland* and *Kroonland*, with a sailing in each direction every three weeks; the Atlantic-Pacific Line, operated by W. R. Grace and Company, sending a vessel each way once a month; while apparently intermittent services are conducted by Sudden and Christenson, Swayne and Hoyt, and the Dollar Line. Numbers of American vessels formerly in the coastwise trade have recently been diverted to the foreign trade.

#### NORTH AMERICA AND EUROPE.

The Harrison Line operates vessels on approximately monthly sailings between Great Britain and Pacific ports of the United States and Canada, in connection with the Direct Line, and to and from Glasgow.

The East Asiatic Company has a vessel every fourth week from Copenhagen, by way of Gotenburg, Christiania, and Genoa, to Los Angeles, San Francisco, Portland, Tacoma, Seattle, and Vancouver, and a vessel returning every fourth week over the same route.

The Johnson Line sends a vessel from Scandinavian ports to approximately the same ports on the west coast, and one in return, at intervals of 60 days.

The Swedish Transatlantic Company has a service over this route with sailings each way about every 60 days.

Alfred Holt and Company have a monthly service between Great Britain and Kingston, San Francisco, Victoria, Vancouver, and Seattle.

The Maple Leaf Line has a service from New York to Vancouver, then to San Francisco, and from that port to Europe, returning to New York, with a vessel sailing

from each port about every six weeks.

#### EUROPE AND SOUTH AMERICA.

The East Asiatic Company operates vessels fortnightly each way over a route between Copenhagen, Gotenburg, Christiania, Genoa, and Barcelona and the west coast ports of Guayaquil, Callao, Mollendo, Iquique, Antofagasta, and Valparaiso.

The Pacific Steam Navigation Company and the Royal Mail Steam Packet Company operate a fortnightly service from Great Britain through the West Indies and down the west coast of South America as far as Valparaiso. This is in addition to the fortnightly service of vessels making Colon their northern terminus.

The Johnson Line operates between Scandinavian ports and the west coast of South America on an approximately 6-weeks schedule.

#### UNITED STATES TO SOUTH AMERICA.

The Merchants' Line (W. R. Grace and Company) has sailings between New York and ports of Ecuador, Peru, and Chile, and return, once a month each way.

The New York and South America Line (the United States Steel Products Company) operates approximately a fortnightly service over this route.

The West Coast Line (Wessel, Duval and Company) maintains a service over this course with sailings about once a month.

#### UNITED STATES AND FAR EAST.

On account of the distances involved in the trade between the Atlantic coast of the United States and the Far East and Australia, and the fact that vessels sometimes use the Suez Canal in connection, there is a greater element of irregularity in sailings over this route than in the other great routes using the Canal.

The Nippon Yusen Kaisha is operating a monthly service from New York to the Far East, via Panama, ending the outward voyages at Japanese ports and Vladivostok.

The American and Manchurian Line (Ellerman and Bucknall Lines) operates a line between New York and Vladivostok with sailings approximately every three weeks.

The American-Australian Line (also a branch of the Ellerman and Bucknall Lines) has a sailing approximately every three weeks from New York for Australia and New Zealand.

A joint service of the American and Oriental Line, Barber Line, Shewan Tomes and Company, and the Indra Line, sends vessels from New York direct to Vladivostok about every 10 days.

The Prince Line, from New York to the Far East, has a sailing in each direction about every five weeks.

The United States and Australia Steamship Company operates between New York and Melbourne, Sydney, Fremantle, Adelaide, Brisbane, Auckland, Wellington, Lyttelton, and Dunedin, with sailings about every six weeks.

#### LINES TERMINATING AT THE CANAL.

A service between New York and Balboa, at the Pacific end of the Canal, is maintained by the Panama Railroad Steamship Line, with a vessel each way every week.

Lines between Cristobal and the west coast are operated by the Pacific Steam Navigation Company, about every 14 days, running as far south as Valparaiso; the South American Steamship Company (Chilean Line), about every 14 days, over approximately the same course; the Peruvian Steamship Company,

every 14 days to ports in Ecuador and Peru; and a line to the northward, as far as Salina Cruz, is maintained by the Salvador Railway Company, with sailings about every 14 days.

#### Cable Messages and Mail from Ships.

Masters of vessels using the Canal may despatch mail and cablegrams through the offices of the Port Captains, the postage and cable charges to be charged against the ship's account. The office of the Port Captain will reduce cable messages to code if desired, and affix stamps to mail matter. Collections covering the actual charges will be made against the deposit previously placed with the Collector of The Panama Canal to cover the ship's expenses. Messages or mail may be given to the boarding officer or to the pilot.

#### Vessels Should Be on Even Keel for Canal Transit.

One of the steamships which arrived recently for transit through the Canal came into port with a decided list. An effort was made to correct this in the loading of the bunker coal which she took on at Cristobal before making the transit, but this was not entirely successful and it was therefore necessary for her to take tugs during her transit of the Canal, to assist in handling her.

A letter has been written to the ship's owner calling attention to her condition, and explaining the desirability that vessels going through the Canal be on at least approximately even keel. When listed a vessel presents numerous steering difficulties and is not only liable to cause damage to herself but also, under unfavorable conditions of wind and current, under a rank sheer might collide with another vessel. And in this case the vessel was put to extra expense by the necessity of using tugs.

The right of The Panama Canal to refuse passage to badly listed vessels is set forth in the Executive Order of July 9, 1914, establishing rules and regulations for the operation and navigation of the Canal, a section pertinent to this matter being as follows:

"6. In any case where the condition of the cargo, hull, or machinery is such that it is liable to endanger or obstruct the Canal, permission to pass through may be refused until steps have been taken to remedy the defect."

#### Telephones for Private Use.

By the provisions of circular No. 650-2, dated August 16, 1915, and effective September 1, no charge is to be made for the work of installation of private telephones of the Panama Railroad Company in quarters. The monthly subscription for private telephones under the new circular will be \$2.50 for use of home exchange only, with a charge of 25 cents for each call going to another exchange; unlimited service will be charged for at the rate of \$7.50 per month. Calls sent to a limited telephone from an outside exchange will be made without charge against the subscriber to the limited telephone receiving the call. In any case where a charge is made, it is against the telephone from which the call originated. A subscriber to unlimited service is entitled to call up a limited service telephone without involving an additional charge against either.

#### New Prices for Coal.

On September 1 the price of coal will be increased to \$6 per ton at Cristobal and \$7 per ton at Balboa.

## CANAL WORK IN JULY.

Monthly Report of the Acting Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., August 12, 1915.  
*The Honorable the Secretary of War,*  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of July, 1915:

#### Department of Operation and Maintenance.

**Lock operation and maintenance**—In addition to the usual maintenance and repair work at the locks, electrically operated remote-controlled arrow signals were completely installed at Pedro Miguel and Miraflores Locks, and the floating caisson was used in unwatering the west chamber of the Gatun Lock flight to permit cleaning and painting of the gates and valves. The following commercial lockages were made:

Gatun—146 lockages, 171 vessels; Pedro Miguel—164 lockages, 170 vessels; Miraflores—164 lockages, 170 vessels.

**Electrical Division**—The net output of the power plants was as follows: Gatun hydroelectric station, 2,957,000 kilowatt-hours; Miraflores steam station, 23,000 kilowatt-hours; total 2,980,000 kilowatt-hours.

The output of the Balboa air compressor plant was 157,805,925 cubic feet of air compressed to 105 pounds. In addition to the usual operation, maintenance, and repair work, construction work was carried on in connection with concrete barracks and quarters at Fort Grant, and concrete and frame quarters and other buildings for The Panama Canal.

**Municipal Engineering Division**—In addition to the work incident to maintenance, operation, and repair, the following construction work was in progress: Pipe installation in connection with the oil handling plant at Mount Hope; installation of sewers for the Army at Margarita; municipal work for the Army post at Fort Anador; municipal work for the Army stables at Corozal, and for the staff quarters at Balboa Heights, and the installation of a 10-inch main to the steel pier at Balboa; the construction of the Empire-Gamboa road; the widening and asphaltizing of the Ancon-Administration Building road; the installation of the rock crusher plant at the Ancon quarry; municipal work for the new quarters on cemetery ridge, Balboa Heights, and the work in the Balboa townsite.

**Meteorology and hydrography**—The rainfall for the month exceeded the average at all stations, except Balboa, Balboa Heights, and Gamboa. The totals ranged from 6.66 inches at Balboa to 21.24 inches at Brazos Brook. The estimated rainfall over the Chagres River basin was 30 per cent above the average, or 16.42 against a 15-year mean of 12.59. The Chagres River discharge at Alhajuela was 46 per cent above the 26-year July normal, and furnished 41 per cent and 39 per cent of the net and total Gatun Lake yields, respectively. The elevation of Gatun Lake varied from 86.62 on the 8th to 85.96 on the 1st, averaging 86.19. Miraflores Lake ranged in elevation from 54.33 on the 21st to 53.60 on the 6th, averaging 54.04. One seismic disturbance was recorded at Balboa Heights, on July 14. It was of slight duration and intensity and no damage was reported from the shock.

#### Division of Terminal Construction.

##### PACIFIC TERMINALS.

Dry dock and entrance pier—Six thousand



four hundred and fifty-two cubic yards of concrete were placed, of which 2,778 cubic yards were reinforced; 55,950 pounds of reinforcing steel and 45,311 pounds of fixed steel being embedded. Nine hundred and sixty-three cubic yards of excavation was accomplished in preparing foundations for the floor. Work was commenced on the storm sewer, and this, together with work on the crane runway tracks, progressed satisfactorily. Forty-two granite blocks were placed and aligned in the caisson sill, and 50 granite blocks in the walls for the caisson bearing. Excavation work continued for the compressor house (building No. 29) and 117 cubic yards of concrete were placed in the footings of the building. In the dry dock gates 168.47 tons of steel were erected, making a total of 734.15 tons to date, and work was started on placing the sheathing on the gates. In the crane rail supports 176.03 tons of structural steel were placed, and seven panels were erected on wharf d-e. In the entrance pier, 155 cubic yards of concrete were placed, nearly all of which was reinforced.

**Cooling plant**—The erection of the unloader towers by the contractor progressed satisfactorily. The structural steel for the two towers was practically all in place at the end of the month, and riveting and the installation of the electrical equipment were started. Excavation at the west end of the unloader wharf was continued, some slight difficulty was experienced with the wooden sheathing, and toward the end of the month there was a small slide. At the reloader wharf work was continued on excavating caissons, placing reinforcing steel, and sealing the caissons. The excavation in the caissons amounted to 1,162 cubic yards, 336 cubic yards of which were hard rock. Three caissons were set in July, making 76 under way to date, of which 21 were sunk to rock during the month, making a total of 48 sunk to rock to date.

**Excavation**—The total excavation for the month amounted to 28,231 cubic yards, 19,369 cubic yards being classified as earth. Of this total amount 10,914 cubic yards were excavated from the Sosa Hill quarry.

**Filling and embankment**—Fill amounted to 25,658 cubic yards, of which 11,418 cubic yards were delivered to waste dump No. 9, 3,301 cubic yards were placed behind quay wall d-e-f, and 1,919 cubic yards were placed behind the dry dock walls as backfill.

**Docks**—Five panels of the floor of quay wall d-e-f (docks 13 and 14) were poured, and snubbing posts placed in the poured area. Considerable progress was made by the contractor on the quarantine boat landing, all the caps having been put in place for the support of the floor and all of the steel laid down on the caps. The mud underneath pier No. 18 having been washed away, the work of placing the pile foundations for a retaining wall for this pier was started.

#### ATLANTIC TERMINALS.

**East Breakwater**—The gap between the shore trestle and the outside trestle was closed on July 28. On the shore section, the double-track trestle was advanced from bent 288 to bent 368, a distance of 1,260 linear feet. On the sea side section of the fill, the single-track trestle was advanced from bent 464 to bent 518, a distance of 814 linear feet. A total of 65,819 linear feet of piling were driven, including 54,227 linear feet on the shore trestle and 11,592 linear feet on the outside trestle. One thousand two hundred and seventy-three

linear feet of 3-inch water main were laid on the shore section, and 1,879 linear feet of 2-inch water main were laid on the outside section of the trestle. The dumping of Sosa Hill rock was resumed on July 29, 992 cubic yards of armor and 752 cubic yards of core rock being plowed from the cars. Scows dumped 4,519 cubic yards of blue rock and 12,477 cubic yards of coral rock on the fill, and dredge No. 4 pumped 2,501 cubic yards of coral sand and 22,517 cubic yards of coral rock on the center line of the shore trestle, bringing the fill up to minus 25 at bents 258 to 278, and up to elevation minus 18 at bents 160 to 180. The Central and South American Telegraph Company laid a new cable across the center line of the breakwater trestle between bents 91 and 92, at station 16 plus 60.

**Cooling plant**—Eight of the end wharf caissons were sealed and seven caissons filled with concrete. Eighty linear feet of floor, containing 655 cubic yards, were poured for the unloader wharf, and 200 linear feet of floor, containing 1,365 cubic yards, were poured for the reloader wharf. Caisson foundations for the unloader and reloader wharves were completed. At the end of the month excavation was completed in all but six of the 31 caissons. The erection and riveting of deck steel for both unloader and reloader wharves were entirely completed, the total weight of the steel erected by the contractor for these wharves being 5,110 tons. Work continued on the coral fill under both unloader and reloader wharves and was completed during the month, a total of 1,400 cubic yards being placed under the unloader, and 12,192 cubic yards under the reloader wharf. The hard rock crown for the above fill was completed under the unloader wharf, 1,116 cubic yards of Sosa Hill rock being used for this purpose. Under W. O. 40,483, the contractor was engaged in installing hoppers and chutes on bridges Nos. 1 and 2 and on bridge diggers. The operating cabs on diggers were partially enclosed, and transformer house and controller coops completely housed with corrugated iron and siding, but no floors installed. Steel for all four towers under W. O. 40,587 is about 99 per cent completed and 98 per cent riveted. Towers Nos. 1, 2, and 3 have concrete floors installed, and boilers, water tank, and all heavy engines are in place in these towers.

**Fuel oil plants**—At the Mount Hope plant, in the manifold housing, the I-beams were bolted in place and ends riveted; the corrugated iron at the ends of the buildings was finished up and roof gutters laid over manifold headers, and, except for down spouts to drain gutters and painting, the building is completed. Gravel was laid under the manifold, and grading and leveling about the plant was about 75 per cent completed. At the Balboa plant in the manifold housing, I-beams for trolley were riveted in place. Grading and general leveling about the plant were about 95 per cent completed. A concrete blowoff sump was installed and drain pipe laid from sump to catch-basin at corner of pump house. The main ditch for draining tank farm was completed as far as possible by steamshovel, and excavation for drainage of tank lots Nos. 13 and 14 of the Roxana Petroleum Company, and tank lot No. 10 of the Panama Agencies Company, was begun.

#### Marine Division.

One hundred and seventy vessels (not including one launch) passed through the Canal in July, 77 northbound and 93 (not in-

cluding one launch) southbound. Of this total 69 were of British register and 58 were of American register. Seventeen vessels were measured, and 170 were inspected to see whether their certificates conformed to the rules.

#### Dredging Division.

The total excavation for the month, including earth, rock, and gravel, was 1,035,764 cubic yards. Of this total 64,059 cubic yards were removed from the Balboa inner harbor, 193,938 cubic yards of earth, and 498,171 cubic yards of rock from the Canal prism in Gaillard Cut, 80,927 cubic yards from the Cristobal coal station, 25,018 cubic yards from Coco Solo, and 45,461 cubic yards from the Atlantic entrance. East and West Culebra slides were quite active during the month, a general movement taking place on July 31—August 1, at which time both banks of the Canal, for a distance of over 2,000 feet, moved an average of 20 feet into the Canal. The hydraulic grader was engaged in digging drainage ditches, furnishing mud to the barge repair station, sluicing mud from under the north side of Pier 18, Balboa, and sluicing loose material from the north toe of Gold Hill. The work of exterminating water hyacinths continued and approximately 49,000 young plants were pulled up and destroyed.

#### Mechanical Division.

Shop orders authorized during the month numbered 902, a decrease of 20 as compared with June; those left over from the preceding month numbered 531; those completed during the month numbered 926; and those carried forward into August numbered 507. The output of the foundry was 101,242 pounds of iron, 81,822 pounds of steel, and 15,428 pounds of brass. Hoisting was done on 4,373 pieces of equipment, and shop and field repairs were made on 5,904 cars. In addition, 692 cars were repaired in shop, and 1,141 light and seven heavy repair jobs were done on equipment. The fuel oil handling plant at Balboa handled 107,461.43 barrels of oil, of which 33,972.03 barrels were for The Panama Canal, and the plant at Mount Hope handled 7,810.39 barrels, practically all of which were for The Panama Canal.

#### Building Division.

In addition to the usual operation, maintenance, and repair work, the following construction work was in progress for the Army at the places named: *Fort Amador*—Two field officers' quarters, two 4-family lieutenants' quarters, three 2-family captains' quarters, three noncommissioned officers' quarters, four barracks, and a storehouse. The noncommissioned officers' quarters were completed, and the field officers' quarters and captains' quarters were over 90 per cent completed at the close of the month. Work was also in progress on the construction of a storehouse at Naos Island. *Cocoal*—Work was continued on the construction of the stables, wagon-sheds, and quarters for the mobile army. The stables and sheds for the technical troops, three type-17's, and the double mess building for the engineers, were completed. Alterations were started on various Canal quarters in preparation for turning them over to the Army. *Margarita*—Work was commenced on the construction of buildings for two company posts and four type-E-2's and two type-20 quarters were in the course of erection, the work on the remainder of the authorized buildings being preparatory only. The following Canal structures were in the course of

construction at the places named: *Ancon-Balboa district*—Thirty-one frame and 12 concrete family quarters. Of the former, ten 1-family type-17, and one type-4, were completed, and of the latter, two 2-family quarters were ready for occupancy. Work was commenced on the construction of the stables for the Panama Railroad Company on the Sandoval tract, which at the end of the month was 40 per cent completed. *Corozal*—The railroad station was completed and turned over for occupancy. *Cristobal*—New Colon Hospital, slaughterhouse, and type-14 quarters at Mount Hope. The former was six per cent completed, and the latter two were completed at the end of the month.

#### Supply Department.

The force report for the half month ending July 21, 1915, showed a total of 26,539 employees of The Panama Canal and Panama Railroad Company, of whom 3,536 were white Americans, and 23,003 were laborers. Of the latter approximately 218 were Europeans and the remainder West Indian negroes. There was a decrease of 20 laborers, and an increase of 28 Americans, making a net increase of eight.

The occupants of Government quarters numbered 6,796 Americans, of whom 3,706 were men, 1,506 women, and 1,584 children; 7,729 West Indians, of whom 4,778 were men, 1,259 women, and 1,692 children.

The value of material received during the month was \$982,756.34. It came forward in 32 steamers; the total weight of cargo, exclusive of lumber and piles, was approximately 77,607 tons. Some of the principal items were 3,776,880 feet, board measure, of lumber, for stock; 192,663 linear feet of untreated piles, and 99,414 bags of Portland cement.

#### Health Department.

*General*—No case of yellow fever, smallpox, or plague originated on or was brought to the Isthmus during the month. Thirty-seven deaths occurred in the Canal Zone. The death rate for disease for the Canal Zone, based on a population of 30,057, was 11.58 per thousand, as compared with 13.15 of the preceding month, and 14.64 for the corresponding month of last year.

*Employees*—The health of employees continued good. The number of names on the payrolls for the preceding month was 35,981. On this basis the admission to hospitals and quarters, 1,167, gave a rate of 389.22 per thousand, as compared with 369.87 for the preceding month, and 366.57 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites, 460.00; blacks, 153.81; and Americans, 366.20. The admission rates for malaria to hospitals and quarters were: Whites, 262.93; blacks, 76.52; and Americans, 200.00. The total number of deaths from all causes was 17. Of these 10 died from disease, or 3.24 per thousand, as compared with 3.61 for the preceding month, and 4.12 for the corresponding month of last year. Two Americans died during the month.

#### Accounting Department.

The cash balance in Canal construction appropriations on July 31 was \$21,140,137.10, and in the fortification appropriations \$3,973,200.61. The payrolls for July, exclusive of Army quarters, storehouse, fortifications, etc., amounted to \$952,656.24, and the fortification roll amounted to \$75,185.78. Payments by the Disbursing Clerk in Washington amounted to \$610,925.78, and by the Pay

master on the Isthmus to \$1,362,899.12. Collections on the Isthmus amounted to \$1,448,361.51, of which \$601,340.74 was repaid to appropriations, \$238,328.27 was commissary collections and other trust funds, and \$608,692.50 was miscellaneous receipts to be covered into the Treasury. Of the miscellaneous receipts \$573,365.67 was collected on account of tolls, as compared with \$539,229.05 for the month of June. Deposits in the amount of \$323,178.90 were made with the Assistant Treasurer to be applied in payment of tolls and other charges against vessels using the Canal. Canal Zone revenue collections and miscellaneous funds received amounted to \$200,393.17, and the disbursements under the same heading amounted to \$223,086.80.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

Three hundred and eighty-seven licenses of all kinds were issued. Sixteen estates were received and 24 settled, the total cash received during the month amounting to \$478.65, and the total value of the estates closed being \$1,657.54. At the port of Balboa 109 vessels entered and 108 cleared, and at the port of Cristobal 169 vessels entered and 174 cleared. This establishes a new monthly record for both ports.

*Postal service*—Postmasters remitted on account of stamp sales, second-class mail collections, postage due collections, and box rent receipts, \$7,670.11. Money orders aggregated \$323,538.58. Of this total, \$107,400 represents the value of deposit money orders issued without fee, in lieu of postal savings certificates. Deposit money orders were paid to the value of \$105,695, and postal savings certificates to the value of \$20,699. The balance of postal savings deposits on hand at the close of the month, represented by the unpaid certificates and deposit money orders, aggregated \$458,197, as compared with \$477,776 at the close of the previous month.

##### POLICE AND FIRE DIVISION.

Three hundred and forty-seven arrests were made. Of this total, 331 were males and 16 females. Fifty-seven convicts were confined in the penitentiary at the close of the month. Six persons were deported, three of whom were convicts who had completed their sentences in the penitentiary, and three of whom were prisoners who had served their terms in jail.

Four fires occurred, and the damage to The Panama Canal and Panama Railroad property resulting therefrom amounted to \$10. The property of the United States Army was damaged to the extent of \$125. Private property suffered no loss.

##### COURTS.

In the District Court 29 probate cases were settled; seven civil, 30 probate, and 20 criminal cases were filed, and 117 cases of all

kinds were pending at the close of the month.

In the magistrates' courts 31 civil and 329 criminal cases were disposed of.

##### DIVISION OF SCHOOLS.

The schools were closed on June 30, 1915, for the summer vacation.

##### Panama Railroad.

The cargo handled at the Colon and Balboa agencies aggregated 132,344 tons, of which 15,891 tons were handled through the Canal on steamers of the Panama Railroad Steamship Line, as follows:

	Tons.
From New York to Balboa.....	5,481
From Colon to Balboa.....	2,688
Total.....	8,169
From Balboa to New York.....	6,629
From Balboa to Colon.....	1,093
Total.....	7,722

Grand total..... 15,891

During the month the following coal was delivered and trimmed in bunkers: Colon agency, 29,500 tons; Balboa agency, 4,979 tons; total, 34,479 tons.

The work on the terminal docks at Cristobal continued satisfactorily. Contract was let for the structural steel for the shed of pier No. 7. During the month 1,535 linear feet of steel cylinders were set, making a total of 21,760 linear feet set to date, completing this class of work. One thousand four hundred eighty-one and one-tenth cubic yards of spoil were removed from the cylinders, making the total removed to date 13,577.8 cubic yards, or 93 per cent of the amount required. Two thousand eight hundred and seven cubic yards of concrete were placed in cylinders, making the total to date 19,925.7 cubic yards, or 87 per cent of the total required. Twenty-eight caissons were completed, making the total to date 189, or 88 per cent of the total required. For the floor system, 95,239 pounds of steel have been erected.

Respectfully,

CHESTER HARDING, Acting Governor.

##### Produce from the Philippine Islands.

The British steamship *Clan Campbell*, passing through the Canal on August 21, was on the way from the Far East to the United States with a cargo of sugar, cotton, and hemp from the Philippine Islands. Seven thousand tons of sugar, loaded at Iloilo, were consigned to Delaware Breakwater, for delivery at Baltimore, Philadelphia, New York, or Boston; 409 tons (3,275 bales) of cotton were shipped from Manila to New York, and 244 tons (1,950 bales) of hemp were shipped from Manila to Boston.

##### Deceased Employees.

Name	Check No.	Native of	Isthmian Residence.	Employed by	Date of death
Richards, Augustus.....	79843	St. Kitts.....	Cristobal.....	P. R. R. ....	Aug. 14, 1915.
Samson, Francis.....	20930	Guadeloupe.....	Colon.....	Health Dept..	Aug. 15, 1915.
Knight, Robert.....	36397	Jamaica.....	Gatun.....	Oper. & Main..	July 30, 1915.

The estates of the abovementioned deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published

JOHN K. BAXTER,

Administrator of Estates.



## PANAMA CANAL ABATTOIR.

## For Slaughtering Native Cattle for Fresh Beef to Meet Local Demand.

The new abattoir of The Panama Canal, in which the slaughtering of beef cattle will begin this week, will considerably increase the facilities for supplying fresh meat to ships. Until recently practically all of the beef sold by the commissary branch of the Supply Department has been imported in cold storage from the United States but with the increase of traffic through the Canal there has developed a demand for the cheaper carcasses of locally slaughtered beeves. The Supply Department has been using to date the municipal abattoir of Colon, which is neither convenient nor adequate to the recently increased service. About the maximum output which has been obtained from the Colon slaughterhouse has been around 20 carcasses a day; the new abattoir will make possible the slaughtering and dressing of between 100 and 150 cattle in a day of eight hours, and this rate can be increased to about 200 per day by the employment of additional butchers.

The abattoir is situated on the east bank of the French canal, approximately opposite the center of the new coaling plant, and close to the cold storage and other warehouses of the commissary branch. The cattle will be delivered at the building in cattle cars from the pasturage on the Mount Hope-Gatun road, and the quartered carcasses will be delivered into refrigerator cars for conveyance to cold storage. Hides will be cured in brine vats along the wall of the main butchering room.

With the use of the slaughterhouse, the Canal will be able to meet all present demands for freshly slaughtered beef. The limit of supply will not be set by the facilities for slaughtering, but by the available supply of cattle. Up to this time most of the "native" (i. e., Central American) cattle have been imported from Costa Rica, as those raised in Panama have averaged a small stature which makes the cost of slaughtering and dressing disproportionately large for the quantity of salable meat obtained from them.

The native beef has been found to be of very fair quality, and the department, in conformity with the principle of selling at slightly above cost, has been able to place it on the market at prices which are approximately a third less than those for similar cuts of the imported beef. The rangy native cattle, reared on free pasture, show in some cuts toughness not usually found in the same parts of the solidly bred, grain fed cattle of the temperate zones, but there is no objection to the native beef on the grounds of taste or wholesomeness.

All of the cattle which are slaughtered by the Supply Department are subject to three inspections, under the jurisdiction of the quarantine service of the Health Department. They are subject first to a quarantine inspection, to prevent the admission of contagious disease to the Canal Zone; an ante-mortem inspection directly before slaughtering; and a post-mortem inspection of the dissected carcass, including a careful examination of the head, liver, glands, lungs, etc., to guard against latent internal infections. The examinations are made by a veterinary recommended to The Panama Canal by the Bureau of Animal Industry of the United States Department of Agriculture who has had eight years of experience in work of this sort.

## OFFICIAL CIRCULARS.

## Assistant to the Engineer of Maintenance.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 21, 1915.  
To all concerned—Effective this date, Lieut.-Col. Jay J. Morrow, U. S. Army, will, during the time the Engineer of Maintenance is acting as Governor, perform the duties and exercise the authority of the Engineer of Maintenance, under the title of Assistant to the Engineer of Maintenance.

CHESTER HARDING,  
Acting Governor.

## Acting Health Officer of Panama.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 21, 1915.  
HEADS OF DEPARTMENTS AND DIVISIONS:  
Lieut. Douglas W. McEnery will act as Health Officer, Panama, during the absence on leave of Capt. H. P. Carter, effective August 23, 1915.

CHESTER HARDING,  
Acting Governor.

## Appointment.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., August 10, 1915.  
CIRCULAR No. 661-22:  
Lieut. A. B. Reed, U. S. N., is appointed Captain of the Port, Balboa, effective August 1, 1915.

CHESTER HARDING,  
Acting Governor.

## Classification of Material.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 10, 1915.

## BULLETIN No. 19:

To all concerned—Effective at once, the following material will be carried in the classes as indicated. All storehouses will check up stock cards and make the necessary corrections. A report will also be rendered to the Auditor of the money value of all material which it is necessary to reclassify, showing classes in which material was formerly carried, and the class to which debit is to be made.

Material.	Class No.
Barrels, wooden, empty.....	26
Brushes, card and file.....	28
Forges, portable.....	9-A
Litharge.....	29-B
Rakes, garden.....	9-C
WM. R. GROVE, Chief Quartermaster.	

## JOINT LAND COMMISSION.

## Rule of Dismissal

In the matter of sundry claims, rule of dismissal No. 190, docket numbers as shown, August 16, 1915—With reference to the following claims, the evidence before the Commission is that settlement therefor has been made by the United States:

Dkt. No.	Claimant	Tax No.	Date of Payment
275	José Guillén.....	618	1-30-15
825	Margarita Cook.....	5-20-15	
826	Maria Bargo.....	5-10-15	
964	Abraham Brown.....	5-1-15	
971	David Brooks.....	5-15-15	
983	Jacob Malette.....	12-7-14	
1108	Prudencio Ceballos (Cevallo).....	12-7-14	
1109	José F. Romero.....	610	1-16-15
1159	Anival García.....	6-14-15	
1266	Samuel Walker.....	6-19-15	
1269	Alexander Myers.....	6-26-15	
1286	Antony Carr.....	6-16-15	
1273 & 1273A	Aaron Scott.....	6-12-15	
1274	Manuela de Sepulveda (Manuela O. de Sepulveda).....	6-26-15	
1276	Henry Nicholas.....	7-14-15	
1278	Nathan Plummer.....	6-19-15	
1279	Peter Jones.....	6-12-15	
1286 & 1287	Nathaniel Butler.....	6-19-15	
3507	Samuel Cunningham.....	6-19-15	
1292	John Henry (Henry).....	6-19-15	
1303	Robert Beckford.....	6-12-15	
1305	Henry G. Davis.....	6-12-15	
1306	Nathan Birchell.....	6-12-15	
1384	Alfred Bissett.....	7-7-15	
1385	James Romley.....	665	4-17-15
1386	David Smith.....	3-20-15	
1387	Robert Graham.....	2-20-15	
1388	Samuel Horton (Haughton).....	7-7-15	
1389	Daniel Daley.....	6-5-15	
1392	James Lawrence.....	3-10-15	
1393	James Brown.....	976	2-13-15

1394	Jacob Johnson.....	4-10-15	
1396	Peter Morgan.....	564	5-8-15
1398	Henry Campbell.....	5-15-15	
1404	Moses Hyllon.....	3-20-15	
1533	Claudio Gutiérrez.....	632, 643	1-30-15
1568	Ruben A. Blake.....	604	2-13-15
1574	Syriaco (Cliraco) Cota.....	652	4-21-15
1575	Caroline (Carolina) Bramwell.....	3-20-15	
1577	William Hinds.....	1-30-15	
1578	Richard Crum.....	597	1-30-15
1579	William Wait (Waite).....	837	2-6-15
1584	Charles Brown.....	601	1-30-15
1586	Thomas Hardy.....	608	1-30-15
1587	Samuel S. A. Hendricks.....	604	1-15-15
1587	Samuel Bachman.....	7-3-15	
1588	Joseph Powell.....	3-24-15	
1590	Antonio (Antonia) Parilla.....	840	1-30-15
1664	Manilita Castillo and Rito Barran (Rito Barrangan, Juan Ricardo).....	6-30-15	
1701	Antonia Cabeza (Jacob Hastings).....	51	6-14-15
1907 & 3102	Santiago Ayala.....	7-3-15	
2458	D. Pinell.....	11-9-14	
2465	Antanador Cruzal (Antanador).....	2-20-15	
2527	José Antonio Alvarez.....	1780	2-2-15
2534	Domingo Munon (Munoz).....	1784	7-10-15
2535	Miguel Gonzales (Gonzalez).....	1779	3-20-15
2566	Juan B. Arias.....	955	1-11-15
2574	Pastor Perez.....	11-28-14	
2603 & 1168	Fermin (Fermina) Hall.....	11-28-14	
2646	George Aresell.....	118	3-20-15
2677	Eliza Jacks.....	1-23-15	
2678	Thomas Bailey.....	510	1-9-15
2680	Thomas Pugh (Puch).....	1-1-15	
2684	Amanda Drugg.....	6-15-15	
2686	Pedro Flores.....	910	3-26-15
2753, 3042 & 3043	E. Z. Goldson, Susan Goldson.....	346	7-14-15
2818	Rosalba Ramos.....	6-16-15	
2828	Ebenezer Webster (E. W.) Morris.....	6-14-15	
2855	Agustin Francis.....	6-12-15	
2860	Edith (and Joseph) Ballentine.....	441	7-3-15
2887, 2888 & 2889	Dolores Campos de Ruiz.....	1302, 1282, 1269	6-28-15
2897	Mrs. Francis Bailey (Francis Bailey, guardian of Charles Alexander Barrett).....	315	6-19-15
2914	Masdeiro Guerrero (Guero).....	217	2-27-15
2918	Enrique Lopez.....	1-9-15	
2920	Joseph Williams.....	271	7-10-15
2926	William Walters.....	3-20-15	
2977	Mary Coltrane.....	4-14-15	
2983	Juana Tobar (B.).....	842	4-10-15
2984	Sivaton (Sirivaton) Gaston.....	678	3-30-15
2991	Pascual (Sidorio) Olivero (Keyes).....	459, 492, 502	6-30-15
2993	William Harrison.....	3-27-15	
2994	John Lumley (Lumley).....	844	4-10-15
3010	Henry Baker.....	7-3-15	
3018	Alexander Anderson.....	560, 569	7-10-15
3030	Nathaniel Wyckham (Wyckham).....	459, 492, 502	6-30-15
3038	Thomas Johnson.....	482	7-10-15
3052 & 3054	Fermin Dominguez and Amelia Morales.....	7-3-15	
3085 & 3086	Richard E. (Catherine Campbell) Dorsey.....	2-26-15	
3103	Ismael Ayala.....	724	6-26-15
3117	Ruth Morris.....	554, 555	6-23-15
3119	Thomas Spence.....	417	7-15
3121	Moses Cross.....	402	7-7-15
3126	Samuel Henry.....	2-27-15	
3298	Cephas Knight.....	7-3-15	
3343	Antonia Valencia.....	712	7-3-15
3345	José Camp.....	6-26-15	
3345	Carmen (José del Carmen) A-tensio.....	7-3-15	
3347	Abraham Orsini.....	726	6-26-15
3349	Cebertio (Sclerino) Arocha.....	7-3-15	
3350	Roberto Lili (Robert Lilly).....	6-26-15	
3377	Catalino Chifundo, Pio Chifundo.....	7-10-15	
3381	Thomas Brisset.....	563	6-14-15
3383	George Edwards.....	328	7-3-15
3384	Frances (Francis) Allen.....	563	6-23-15
3388	Charles Thomas.....	6-26-15	
3390	George Fedson (Fedson).....	572	6-22-15
3391 & 3392	James Stephen (Stephens).....	561	6-12-15
3409	Rafael Lierin.....	717, 721, 725, 995	6-28-15
3410	Damaso Torres (Damaso Torres).....	6-26-15	
3412	Fernando Torres.....	720	7-3-15
3414	Pedro Quintano.....	716, 717	7-3-15
3415	Severino Aguilar.....	7-3-15	
3491	Stein Alstead (Alsted).....	7-3-15	
3508	Carmen Martinez.....	4-14-15	
3509	Eusebio Alencio.....	12-9-15	
3511	George Rynne.....	978	7-9-15
3512	Marcelino Cortes.....	4-14-15	
3566	Thomas Wood.....	970	6-23-15
4568	George Fegitt.....	585, 573	6-16-15
3576	James Herbert McKenzie.....	7-3-15	

In view of the above settlements, no further action is necessary by this Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective August 26 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts.

The following is a list of retail prices of cold storage provisions which will be effective August 26, 1915:

## FRESH MEATS.

	Price.
Mutton—Stewing, per pound.....	9
Shoulder, dressed (4 to 5 pounds) per pound.....	12
Leg (8 to 10 pounds), per pound.....	19
Short cut, chops, per pound.....	23
Shoulder, chops, per pound.....	17
Lamb—Stewing, per pound.....	12
Shoulder, trimmed, per pound.....	15
Leg (5 to 8 pounds), per pound.....	24
Chops, per pound.....	29
Chops, shoulder, per pound.....	20
Veal—Stewing, per pound.....	12
Shoulder, for roasting (not under 5 lbs.), per pound.....	15
Chops, shoulder, per pound.....	20
Chops, per pound.....	30
Loin, for roasting, per pound.....	30
Cutlets, per pound.....	36
Beef—Suet, special, per pound.....	31
Soup, special, per pound.....	7
Native, per pound.....	5
Soup, bones, special, per pound.....	24
Suet, special, per pound.....	11
Native, per pound.....	8
Plate, special, per pound.....	12
Native, per pound.....	8
Chuck roast, special (3 lbs. and over), per pound.....	12
Chuck roast, native (3 lbs. and over), per pound.....	12
Rib roast, second cut (not under 3 1/2 pounds), special, per pound.....	16
Rib roast, second cut, native (3 1/2 pounds and over), per pound.....	9
Rib roast, first cut (not under 3 pounds), special, per pound.....	19
Rib roast, first cut, native (3 pounds and over), per pound.....	11
Pot roast, special, per pound.....	20
Native, per pound.....	12
Rump roast, special, per pound.....	20
Native, per pound.....	12
Porterhouse roast, special, per pound.....	31
Native, per pound.....	16
Steak, chuck, special, per pound.....	13
Native, per pound.....	9
Round, bottom, special, per lb.....	9
Native, per lb.....	9
Round, top, special, per pound.....	15
Native, per pound.....	10
Sirloin, special, per pound.....	20
Native, per pound.....	12
Sirloin, choice cut, special, per pound.....	23
Native, per pound.....	16
Sirloin, choice cut, native, per lb.....	16
Rump, special, per pound.....	20
Native, per pound.....	12
Porterhouse (not less than 1 1/2 pounds), special, per pound.....	23
Porterhouse (not less than 1 1/2 pounds), choice, per pound.....	34
Porterhouse (1 1/2 pounds and over), native, per pound.....	17
Porterhouse, short, special, per pound.....	20
Porterhouse, short, choice, per pound.....	28
Porterhouse, short, native, per lb.....	12
Tenderloin, Western, special, per pound.....	35
NOTE—"Choice beef" is kept on hand in the cold storage plant at Cristobal. Orders placed with commissary storekeepers before 11 a. m. will be shipped for delivery on the following morning.	
Pork—Hams, fresh, per pound.....	23
Shoulders, fresh, per pound.....	19
Loin, chop, or roast, per pound.....	18
Spare ribs, per pound.....	13
Pigs' feet, fresh, per pound.....	14

Pigs' heads, fresh, whole.....	83
Sausages, home made, per pound.....	42
Ox tails, per pound.....	23
Beef tongue, native, whole, per pound.....	20
MISCELLANEOUS.	
Brains, calves, per pound.....	8
Calves' heads, each.....	80
Kidneys, beef, per pound.....	11
Livers—Beef, per pound.....	9
Calf, per pound.....	9
Steak—Hamburger, package.....	17
Hamburger, 20-pound containers, per pound.....	14
Sausage—Bologna, per pound.....	12
Frankfurter, per pound.....	12
Frankfurter, imported, tin.....	11
Liebkervurst, per pound.....	18
Pork, per pound.....	14
Sweetbread, beef, per pound.....	17
Eggs, fresh, per dozen.....	28
per 1 dozen.....	14
Bloaters, fancy, each.....	14
Bluefish, per pound.....	14
Codfish, dried, per pound.....	11
Hadlock, smoked, per pound.....	12
Halibut, fresh, per pound.....	11
Salmon, per pound.....	11
Whitefish, smoked, per pound.....	20
Yeast, per pound.....	31
Pates de foies gras, per jar.....	67

## CURED AND PICKLED MEATS.

Beef—Corned, No. 1, per pound.....	115
No. 2, per pound.....	112
Ham—Real York and Cumberland, per pound.....	43
Genuine Westphalia, per pound.....	50
Shoulders, sugar cured, boneless, whole, per pound.....	112
Sugar cured, boneless, whole, per pound.....	120
Sliced, per pound.....	112
Whole, boiled, per pound.....	27
Half, boiled, per pound.....	29
Sliced, boiled, per pound.....	35
Bacon—Breakfast, sliced, per pound.....	28
Whole, piece, per pound.....	28
Strips, whole, per pound.....	30
Sliced, jar.....	27
Sliced, tin.....	40
Squares, whole, per pound.....	12
Ham, lunch, per pound.....	14
Pork, clear, per pound.....	14
Pork, standard mess, per pound.....	14
Ox tongues, whole, 3 to 5 lbs., per pound.....	24
Pigs' feet, pickled, per pound.....	7
Pigs' feet, corned, per pound.....	22
Tongues, per pound.....	22

## DAIRY PRODUCTS.

Butter—Creamery, special, per pound.....	137
Creamery, 60-62 lb. tub, whole tub, per pound.....	146
Sheffield Farms, extra fancy, per lb.....	29
Broilers, per pound, carton.....	29
Cheese—Philadelphia cream, cake.....	9
Roquefort, per pound.....	43
Young America, per pound.....	34
Swiss, per pound.....	9
Edam, each.....	1.15
Edam, tin.....	29
Parmesan, per pound.....	26
Gouda, per pound.....	38
Snappy, per cake.....	9
Milk, Sheffield Farms, per quart.....	115
Fernallia, bottle.....	115
Ice cream, quart.....	125
1-gallon.....	150
Cream, 30 per cent, quart.....	145
per pint.....	125
1-pint.....	115

## POULTRY AND GAME.

Chickens—Fancy, roasting, milk fed, per pound.....	30
Chickens—Fancy, roasting, corn fed, per pound.....	127
Fowls, per pound.....	22
Fowls, light, per pound.....	22
Ducks, Western, per pound.....	24
Capons, per pound.....	30
Broilers, milk fed, per pound.....	31
Broilers, corn fed, per pound.....	28
Turkeys, per pound.....	28
Squabs, each.....	17
Geese, per pound.....	33
Grouse, each.....	1.00
Mallard ducks, 2 to 2 1/2 pounds, each.....	2.35
Pheasants, each.....	1.35

## VEGETABLES.

Beets, per pound.....	1 1/2
Cabbage, per pound.....	1 1/2
Carrots, per pound.....	2
Cauliflower, per pound.....	17
Celery, per head.....	13
Cucumbers, per pound.....	13
Egg plant, per pound.....	4
Lettuce, per pound.....	9
Onions, per pound.....	13
Peppers, green, per pound.....	13
Plantains, per dozen.....	12
Potatoes, white, per pound.....	1 1/2
Potatoes, sweet, per pound.....	2 1/2
Squash, per pound.....	2 1/2
Turnips, per pound.....	1 1/2
Tomatoes, per pound.....	6
Yams, per pound.....	3

## FRUITS.

Apples, per pound.....	18
Grape fruit, tropic, each.....	38
Oranges, per dozen.....	13
Limes, per 100.....	32
Oranges—Select, each.....	4
Tropical, per dozen.....	16
Coconuts, each.....	4
Bananas, per bunch.....	38
Bananas, each.....	11
Apples, evaporated, per pound.....	111
Apricots, evaporated, per pound.....	111
Pears, evaporated, per pound.....	23
Peaches, evaporated, per pound.....	7
Pineapples, each.....	10
Figs, dried, 12-oz. packages.....	14
Figs, dried, 5-oz. packages.....	5
Raisins, seedless, package.....	11
table, cluster, per pound.....	18
Currants, cleaned, package.....	12
Prunes, stewing, per pound.....	10
Watermelons, each.....	38
Plums, per pound.....	14
Peaches, fresh, per pound.....	6
Pears, fresh, per pound.....	6
Cantaloupes, each.....	15

\* Indicates advance from preceding list.

\*\* Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1 ham of 1/2 shoulder of fresh pork will be sold.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Colebra, and Torc Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m. and 3 p. m. to 5 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and other sailing days of Panama Railroad vessels.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective August 21, 1915:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Powder, sachet, bot.....	\$0.40	\$0.25
Straps, razor, ea.....	1.20	1.20
Knickerbockers, pr.....	1.20	.88
Hooks and eyes, doz.....	.01	.02
Shields, dress, ea.....	.10	.14
Shields, dress, ea.....	.11	.13
Shields, dress, ea.....	.12	.16
Ties, bat wing, ea.....	.43	.34
Ties, bat wing, ea.....	.36	.33
Under-shirts, ea.....	.29	.34
Spoons, basting, ea.....	.08	.05
Brooms, corn, ea.....	.30	.34
Mops, O-Cedar, ea.....	1.00	.95
Pears, poached egg, ea.....	.45	.40
Washboards, ea.....	.33	.77
Sponges, rubber, ea.....	.53	.43
Sheeting, rubber, yd.....	.73	.63
Sheeting, rubber, yd.....	.58	.55
Vests, ladies', ea.....	28	23
Pants, work, pr.....	81	85
Suit cases, ea.....	18.10	22.00
Knives, butcher's, ea.....	29	34
Hooks, cup, brass, doz.....	20	26
Candies.		
Pascals Sweets, jar.....	.21	.23
Honey, qt. bot.....	.24	.29

## Additions to stock.

Towels, huck, H. S. & embroidered, ea.....	\$0.36
Towels, diaper, scalloped edge and embroidered, ea.....	.41
Drill, olive drab, khaki, yd.....	.30
Mattresses, double, hair, ea.....	18.20
Clocks, alarm, "Bingo," ea.....	32
Towels, huck, H. S. & embroidered, ea.....	.39
Towels, huck, H. S. & embroidered, ea.....	.29
Milk, evaporated, Globe, tin.....	.08
Powder, baking, Rumford, tin.....	1.08
Powder, baking, Rumford, tin.....	.04
Soap, white naphtha, cake.....	.04
Cases, pillow, H. S. plain linen, pr.....	1.15
Cases, pillow, H. S. plain linen, pr.....	1.35
Blouses, milky, Palm Beach, ea.....	1.30
Shirts, negligee, with collar, ea.....	1.30
Shirts, negligee, without collar, ea.....	1.30
Shirts, negligee, without collar, ea.....	1.55
Extract of coffee, P. C., bot.....	.15
Hominy, prepared, Kurtz, tin.....	.14
Biscuits, cream wafers, N. B. Co., tin.....	.20

## Taboga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p. m.: Monday, Thursday, Saturday, and Sunday, at 9.40 a. m.

Return Taboga—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier); Monday, Thursday, and Saturday at 1.30 p. m.; Sunday at 7.15 p. m. The 9.40 a. m. trip from Balboa await the arrival of Panama Railroad trains.



## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next five weeks are given in this table:

## AUGUST.

DATE.	Time and height of high and low water.			
Wed., Aug. 25....	3:52	9:55	16:08	22:15
Thurs., Aug. 26....	15.5	0.4	15.5	-0.4
4:45	10:39	16:51	22:57	
Fri., Aug. 27.....	16.0	-0.1	15.6	-0.4
5:13	11:21	17:31	23:38	
Sat., Aug. 28.....	16.0	-0.1	15.4	0.0
5:51	12:01	18:09	0.0	
Sun., Aug. 29.....	15.7	0.2	14.9	
0:17	6:27	12:41	18:47	
Mon., Aug. 30.....	0.6	15.9	0.8	14.1
0:57	7:02	13:21	19:24	
Tues., Aug. 31.....	1.5	14.2	1.6	13.2
1:37	7:38	14:04	20:04	
2.6	13.3	2.6	12.2	

## SEPTEMBER.

DATE.	Time and height of high and low water.			
Wed., Sept. 1.....	2:21	8:17	14:51	20:52
Thurs., Sept. 2.....	3.6	12.3	3.5	11.7
4:45	11:12	15:42	21:55	
Fri., Sept. 3.....	4.6	11.4	4.3	10.5
4:13	10:15	16:55	23:21	
Sat., Sept. 4.....	5.3	10.9	4.6	10.3
5.4	10.8	4.4		
Sun., Sept. 5.....	0:39	6:30	12:52	19:06
10.7	5.0	11.3	8.7	
Mon., Sept. 6.....	1:37	7:30	13:48	19:54
11.5	4.2	12.1	2.9	
Tues., Sept. 7.....	2:20	8:17	14:30	20:38
12.6	3.1	13.0	1.9	
Wed., Sept. 8.....	3:08	9:08	15:08	21:16
13.7	2.0	14.0	1.0	
Thurs., Sept. 9.....	3:31	9:38	15:45	21:54
14.7	0.9	14.8	0.2	
Fri., Sept. 10.....	4:10	10:16	16:21	22:32
15.6	0.0	15.5	-0.3	
Sat., Sept. 11.....	4:34	10:54	16:58	23:10
16.3	-0.6	15.8	-0.5	
Sun., Sept. 12.....	5:12	11:35	17:36	23:48
16.6	-0.9	15.9	-0.4	
Mon., Sept. 13.....	5:51	12:16	18:15	
16.6	-0.8	15.6		
Tues., Sept. 14.....	6:31	13:00	18:59	19:00
Wed., Sept. 15.....	0.1	16.2	-0.2	14.9
1:18	7:16	13:49	19:49	
Thurs., Sept. 16.....	0.9	15.4	0.6	14.0
2:09	8:00	14:36	20:43	
Fri., Sept. 17.....	1.9	14.3	1.6	13.0
3:12	9:13	15:53	22:04	
Sat., Sept. 18.....	2.9	13.3	2.4	12.3
4:26	10:32	17:09	23:25	
Sun., Sept. 19.....	3.6	12.3	2.8	12.2
5:46	11:56	18:24	24:45	
Mon., Sept. 20.....	3.6	12.5	2.5	
0:55	6:58	13:22	19:29	
Tues., Sept. 21.....	12.8	2.9	13.9	1.9
1:59	8:00	14:21	20:23	
Wed., Sept. 22.....	13.8	2.0	13.9	1.2
2:48	8:50	15:09	21:10	
Thurs., Sept. 23.....	14.7	1.1	14.6	0.6
3:31	9:36	15:52	21:53	
Fri., Sept. 24.....	15.3	0.4	15.0	0.3
4:10	10:16	16:31	22:33	
Sat., Sept. 25.....	15.7	0.0	15.2	0.3
4:46	10:53	17:07	23:10	
Sun., Sept. 26.....	15.7	-0.1	15.1	0.5
5:21	11:32	17:42	23:48	
Mon., Sept. 27.....	15.7	0.2	14.7	
5:53	12:09	18:17		
Tues., Sept. 28.....	14.8	0.8	14.0	
0:23	6:26	12:48	18:55	
Wed., Sept. 29.....	1:04	6:59	13:28	19:30
2.8	13.2	2.5	12.3	
Thurs., Sept. 30.....	1:46	7:37	14:14	20:13
3.6	12.3	3.4	11.4	

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0 (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Cristobal post-office:

Every Thursday to New Orleans, for all States. Due at New Orleans on the following Tuesday.

Every Saturday to New York, for all States. Due at New York the following Friday, with the exception of the *Advance*, which is due there on Saturday.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE.—The sailings on Monday, September 20 and October 18, will not land mail in New York on Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday boat to New Orleans. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, August 21, 1915:

DAY AND DATE.	STATIONS.				
	Vigia.	Alhajuela.	Gatun Lake.	Miraflores Lake.	
Sun., Aug. 15.....	127.30	93.45	86.12	53.94	
Mon., Aug. 16.....	131.75	96.37	86.14	54.00	
Tues., Aug. 17.....	129.65	96.47	86.16	53.97	
Wed., Aug. 18.....	127.60	93.56	86.15	54.01	
Thurs., Aug. 19.....	127.75	93.56	86.16	54.05	
Fri., Aug. 20.....	128.00	93.57	86.16	54.05	
Sat., Aug. 21.....	129.60	95.10	86.16	54.30	
Heights of low water to nearest foot.....	125.0	92.0			

## Rainfall from August 1 to 21, 1915, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.	
<i>Pacific Section—</i>	<i>Ings.</i>	<i>Ins.</i>		
Balboa.....	3.71	20	7.92	
Balboa Heights.....	3.13	20	9.03	
Miraflores.....	2.20	20	6.63	
Pedro Miguel.....	3.38	20	6.38	
Rio Grande.....	2.02	20	6.38	
<i>Central Section—</i>				
*Culebra.....	1.42	20	5.97	
*Cimachio.....	1.69	21	6.57	
Embarcadero.....	1.36	18	7.09	
Gatun.....	.79	18	2.98	
*Juan Mina.....	2.70	21	6.65	
Alhajuela.....	3.84	21	8.59	
Vigia.....	3.87	21	10.25	
Frijoles.....	2.44	21	6.12	
*Trinidad.....				
*Monte Lirio.....	2.30	19	9.10	
<i>Atlantic Section—</i>				
Gatun.....	2.62	18	8.94	
*Brazos Brook.....	2.10	19	6.84	
Colon.....	2.69	18	7.84	
*Boca del Toro.....				

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

## Customs Sale.

Sealed bids will be received at the office of the Chief of the Division of Civil Affairs, Balboa Heights, until noon of September 4, 1915, and then opened, for the purchase of the following merchandise:

Eight quart bottles of Slayters V. O. blended whiskey, ex steamship *San Juan*, remaining unclaimed at Balboa since October 1, 1913.

Three Panama hats, ex steamship *Carloaga*, seized at Cristobal, July 3, 1915.

Three packages of Italian cigars, 50 cigars to the package, ex steamship *Sargis*, seized at Cristobal, June 6, 1915.

Twenty packages of Ivanhoe long cut tobacco, seized at Cristobal, August, 1915.

Nineteen packages of Martin long cut French tobacco, ex steamer *Niagara*, seized at Cristobal, August 1, 1915.

Sixteen Panama hats ex steamship *Aysen*, seized at Cristobal, August 20, 1915.

Merchandise may be inspected upon application at

Room 320, Administration Building, Balboa Heights. Bids should be marked, "Bid for the purchase of seized or unclaimed merchandise" and addressed to the Chief of the Division of Civil Affairs, Balboa Heights, C. Z. Purchasers will be required to pay the import duties prescribed in the customs tariff of the Republic of Panama. The right to reject any or all bids is reserved.

## Misdirected Letters.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon request of the addressees:

Acckstrom, M. Long, T. A., Jr.  
 Arnold, Lieut. A. V. \* Moore, Mrs. Mrs. Mrs. Williams  
 Bailey, W. H. Williams  
 Blackburn, R. L. McGinness, Daniel  
 Bowerson, Oliver Mason, C. W.  
 Bray, Mrs. Walter Matthews, Frank  
 Coleman, Lee Moore, Frank H.  
 Conway, Mrs. John P. Neilson, Charles  
 Couch, Chas. F. Peterson, Edward (2)  
 Deere, James Schindhamer, Miss Louise  
 DeShon, Lieut. Percy \* Schram, M. (3)  
 Earles, Sergt. John Sealey, John  
 Elliott, Mrs. S. S. Senenbach, Mrs. Gertie  
 Geiger, Henry Slaton, Paul  
 Hendricks, Ed. Stenstrup, P. S.  
 Irwin, Gordon Stumm, Charles A.  
 Kiernan, Joseph M. Williams, Mrs. Mary  
 \*Paper. Zinn, A.

## Fuel.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 400 and 650 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$5.40; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery. On and after September 1, the basic prices will be advanced to \$6 per ton at Cristobal and \$7 per ton at Balboa.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 45 shillings per ton of seven barrels.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

	Sails.	Arrives.
Zacapa.....	U. F. C. Aug. 18.....	Aug. 25
Alliance.....	P. R. R. Aug. 19.....	Aug. 25
Calamares.....	U. F. C. Aug. 21.....	Aug. 29
Carillo.....	U. F. C. Aug. 25.....	Sept. 1
Colon.....	P. R. R. Aug. 26.....	Sept. 1
Tenadores.....	U. F. C. Aug. 28.....	Sept. 5
Santa Marta.....	U. F. C. Sept. 1.....	Sept. 8
Advance.....	P. R. R. Sept. 2.....	Sept. 9
Colon.....	U. F. C. Sept. 4.....	Sept. 13
Almirante.....	U. F. C. Sept. 8.....	Sept. 15
Panama.....	P. R. R. Sept. 9.....	Sept. 15

## CRISTOBAL-COLON TO NEW YORK.

Almirante.....	U. F. C. Aug. 26.....	Sept. 2
Panama.....	P. R. R. Aug. 28.....	Sept. 3
Pastores.....	U. F. C. Aug. 30.....	Sept. 7
Zacapa.....	U. F. C. Sept. 2.....	Sept. 9
Alliance.....	P. R. R. Sept. 4.....	Sept. 10
Calamares.....	U. F. C. Sept. 6.....	Sept. 13
Carillo.....	U. F. C. Sept. 9.....	Sept. 16
Colon.....	P. R. R. Sept. 11.....	Sept. 17
Tenadores.....	U. F. C. Sept. 13.....	Sept. 20
Santa Marta.....	U. F. C. Sept. 16.....	Sept. 23
Advance.....	P. R. R. Sept. 18.....	Sept. 24

## NEW ORLEANS TO CRISTOBAL-COLON.

Abangarez.....	U. F. C. Aug. 18.....	Aug. 25
Parismina.....	U. F. C. Aug. 21.....	Aug. 26
Atenas.....	U. F. C. Aug. 25.....	Sept. 1
Cartago.....	U. F. C. Aug. 28.....	Sept. 2
Heredia.....	U. F. C. Sept. 4.....	Sept. 8
Abangarez.....	U. F. C. Sept. 8.....	Sept. 15
Parismina.....	U. F. C. Sept. 11.....	Sept. 16
Atenas.....	U. F. C. Sept. 15.....	Sept. 22

## CRISTOBAL-COLON TO NEW ORLEANS.

Abangarez.....	U. F. C. Aug. 26.....	Aug. 31
Parismina.....	U. F. C. Aug. 28.....	Sept. 2
Atenas.....	U. F. C. Sept. 2.....	Sept. 7
Cartago.....	U. F. C. Sept. 4.....	Sept. 9
Turrialba.....	U. F. C. Sept. 9.....	Sept. 14
Heredia.....	U. F. C. Sept. 16.....	Sept. 21
Abangarez.....	U. F. C. Sept. 16.....	Sept. 23

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., August 22, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Aug. 16.	Cauca	British	Pacific Steam Navigation Co.	Cristobal	Guayaquil	General	1,092	1,557	993
Aug. 16.	Amisla	Italian	Soc. Anon. Lloyd del Pacifico	Genoa	Calica Colusa	Ballast		5,356	3,861
Aug. 16.	Advance	American	Panama Railroad S. S. Line	New York	Balboa	General	1,040	2,965	2,161
Aug. 16.	Polena	Chilean	South American Steamship Co.	Cristobal	Valparaiso	General	1,692	3,628	2,547
Aug. 16.	Ucayali	Peruvian	Peruvian Steamship Co.	Cristobal	Guayaquil	General	1,120	4,278	2,766
Aug. 17.	Hesperos	Norwegian	Brugsdard Klosterdal Damp. A.	Norfolk	Antofagasta	Ballast		5,678	4,214
Aug. 17.	Salvador	British	Salvador Railroad Co.	Cristobal	Salina Cruz	General	634	1,190	692
Aug. 17.	Navajo	American	Western Steam Nav. Co.	New York	Los Angeles	General indse.	2,000	2,705	1,119
Aug. 17.	Indradeo	British	Indra Line	New York	Melbourne	Gen., blasting caps	8,267	4,816	3,474
Aug. 17.	Whitegift	British	American-Hawaiian Line	New York	Los Angeles	General	5,774	6,857	4,706
Aug. 18.	De Soto	American	Standard Oil Co.	Philadelphia	Balboa	Ballast		7,145	4,477
Aug. 18.	Montezuma	American	American-Hawaiian Line	London	Wellington	General	8,000	5,133	3,812
Aug. 19.	Luz Blanca	British	London & Pacific Pet. Co.	Baltimore	Guayaquil	Coal	6,090	4,655	3,277
Aug. 19.	Naruga	British	Royal Mail S. P. Co.	Cristobal	Buenaventura	General	454	1,170	620
Aug. 19.	Rivardale	British	Borderdale Shipping Co. Ltd.	Cristobal	Balboa	Ballast		15	15
Aug. 20.	Jamaica	Panamanian	Manuel Burillo Alonzo	Cristobal	Eten, Peru	Ballast		3,692	2,483
Aug. 21.	Benedict	British	Pacific Steam Navigation Co.	Cristobal	Guayaquil	General	1,214	4,040	2,628
Aug. 22.	Chile	British	Booth S. S. Co. Ltd.	Cristobal	Balboa	General	2,795	2,495	1,536
Aug. 22.	John A. Hooper	American	Sudden & Christenson	Baltimore	San Diego	Coal, oyster shells	5,065	4,396	3,178
Aug. 22.	Kumi Maru	Japanese	Denrui Goshi Kaisha	Philadelphia	Portland	Ballast		4,005	3,751
Aug. 22.	Lady Carrington	British	Carrington S. S. Co. Ltd.	Barry					

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Aug. 16.	Tallac	American	Tallac S. S. Co.	Geneva Bay	New York	Lumber	2,800	1,584	1,125
Aug. 16.	Santa Catalina	American	W. R. Grace & Co.	Punta Arenas	Colon, for orders	Nitrates, general	8,600	6,657	4,409
Aug. 16.	Chipana	British	American-Hawaiian Line	Honolulu	Del. Bkwt.	Sugar, general	12,043	8,989	6,864
Aug. 17.	Arizona	American	W. R. Grace & Co.	San Francisco	New York	Lumber	7,620	6,748	4,476
Aug. 17.	Santa Cecilia	American	Strath Line	Calita Buena	Colon, for orders	Nitrates	6,800	4,642	3,392
Aug. 17.	Strahendrick	British	Strath Line	Balboa	New York	General		2,965	2,611
Aug. 17.	Advance	American	Panama Railroad S. S. Line	Valparaiso	Cristobal	General	1,379	453	3,042
Aug. 18.	Aysen	Chilean	South American Steamship Co.	Junin	New York	Nitrates, ore	4,334	3,221	2,206
Aug. 19.	Capac	British	New York & Pacific Line	Toconilla	Newport News	Nitrates	2,452	2,421	1,726
Aug. 19.	Flor. Luckenbach	American	Luckenbach Line	Seattle	New York	Nitrates	5,620	5,903	4,149
Aug. 19.	Hawaiian	American	Tank Storage & Carriage Co.	San Francisco	Liverpool	Oil		1,736	1,545
Aug. 20.	Calcutta	British	World S. S. Co.	Iquique	New York	Nitrates	5,885	3,722	2,697
Aug. 21.	Good Hope	British	Pacific Coast Co.	Wauana	New York	Lumber	2,452	2,421	1,726
Aug. 21.	Eureka	American	Sudden & Christenson	Havana	Lumber		1,000	847	441
Aug. 21.	Guatemala	British	Pacific Steam Navigation Co.	Talcahuano	Cristobal	General	1,642	4,249	2,772
Aug. 21.	Claw Campbell	British	Cayzer, Irvine Co.	Iloilo	Colon, for orders	Sugar, hemp	7,653	6,392	4,456
Aug. 21.	Potosi	British	Pacific Steam Navigation Co.	Antofagasta	Liverpool	General	5,420	5,542	4,316
Aug. 21.	J. L. Luckenbach	American	Luckenbach Line	New York	General		3,579	5,114	3,258
Aug. 21.	Queen Elisabeth	American	Merito Shipping Co.	Mejillones	Savona	Nitrates	6,700	4,631	3,381
Aug. 22.	Isanan	American	American-Hawaiian Line	Los Angeles	N. Y. and Boston	General	7,400	6,819	4,668

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC.

Date	Vessel	Line	From	Date	Vessel	Line	From
Aug. 21.	Olson & Mahony	Olson & Mahony	New Orleans	Aug. 25.	Berwick Low	T. Law & Co.	S. Pacific ports.
				Aug. 27.	Alvarado	Cai. Maritima	San Francisco.
				Aug. 28.	Crown of Seville		San Francisco.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	To
Aug. 19.	Nickerie	Royal Dutch West India M'l	Amsterdam	Aug. 17.	Danube	Royal Mail S. P. Co.	London.
Aug. 20.	Rosalie Mahony	Olson & Mahony	New Orleans	Aug. 18.	Tyne	Royal Mail S. P. Co.	St. Lucia.
Aug. 22.	Dramatist	Harrison Line	Liverpool	Aug. 19.	Frances Hyde	Copley Cement Mfg. Co.	Bluefields.
Aug. 22.	Peron	French Line	St. Nazaire	Aug. 19.	Sarm Line	Earn Line	Daiquiri.
Aug. 22.	Zela	Robert Wilcox	Gulfport.	Aug. 21.	Nickerie	Royal Dutch West India M'l	Curacao.
				Aug. 22.	Tabor	Earn Line	Daiquiri.
				Aug. 22.	Rosalie Mahony	Olson & Mahony	Bluefields.

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Aug. 28.	Covina	Elders & Fyffes	Port Limon.	Aug. 27.	Peron	French Line	St. Nazaire.
				Aug. 25.	Dramatist	Harrison Line	Unknown.
				Aug. 28.	Covina	Elders & Fyffes	Bristol via way pts.

\*Other than vessels which passed through the Canal. United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

## DEPARTURES.

Aug. 19.	J. A. Moffet	Standard Oil Co.	San Francisco.	Aug. 19.	Peru	Pacific Mail S. S. Co.	San Francisco.
Aug. 22.	O. M. Clark	C. H. Huggins	Portland.	Aug. 21.	J. A. Moffet	Standard Oil Co.	La Union.
Aug. 22.	Wilmington	Chas. Nelson Co.	Port Angele.				
Aug. 22.	San Jase	Pacific Mail Co.	San Francisco.				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

				Aug. 27.	San Jase	Pacific Mail S. S. Co.	San Francisco.
					O. M. Clark	C. H. Huggins	
					Wilmington	Chas. Nelson	

\*Other than vessels passing through the Canal.



# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, SEPTEMBER 1, 1915.

No. 2.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published weekly. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Sent between July 1 and October 1, 50 cents; between October 1 and January 1, 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Weather Forecasts.

For the benefit of shipping in the Caribbean, the radio station at Colon sends broadcast each day, just after noon, a weather forecast received from Key West, covering the Caribbean and south Atlantic and Gulf regions. The forecast is sent out on 1,400-meter wave length. It is also given to the offices of the Captain of the Port at Balboa and Cristobal. As the forecast is only for 24 hours in advance, its service is of more value as an indication of the possible development of storms than as a warning of conditions immediately to be experienced; for a vessel putting out of Colon would hardly reach a point likely to be affected by changes covered in the forecast before the lapse of the period for which the forecast was made. However, the information is sent out for whatever it is worth, and in conjunction with the broadcasts of hydrographic information at 8 a. m., noon, 4 p. m., and 8 p. m., may prove to be a valuable aid in some instances. At this time of the year, during the West Indian hurricane season, it may be of special service; it has already served to give warning to vessels approaching the recent hurricane which swept out of the Windward Islands, struck parts of Jamaica and Cuba, traveled over the Gulf of Mexico, caused the flooding of Galveston, and proceeded northeasterly over the United States. An article on the hurricanes of the West Indies is published elsewhere in this issue.

### Operation of Vessels of Panama Railroad Steamship Line.

Hereafter all the vessels of the Panama Railroad Steamship Line which do not make the transit of the Canal after arrival from New York will sail from Cristobal for New

York direct on Friday instead of Saturday. This means the Friday of the week following their arrival from New York. Vessels which make the transit of the Canal will sail from Cristobal for New York on Saturday of the week following arrival from New York, as scheduled. The vessels affected by this arrangement are the *Advance*, *Alliance*, *Colon*, and *Panama*. The *Cristobal* is being operated on an independent schedule, carrying cement and passengers from the United States and general cargo and passengers on her return voyages. The *Aucon* is being operated in the coal service, and is not carrying passengers.

The operation of the vessels of the line through the Canal will be controlled by the necessity of lifting cargo at Balboa for transport to New York. The Pacific Mail Steamship Company is now practically the only carrier delivering cargo at Balboa for transshipment through the Canal, since the Pacific Steam Navigation Company, the Salvador Railroad Company, the South American Steamship Company (Chilean Line), and the Peruvian Line are all sending their vessels through the Canal from the Pacific to Cristobal. Occasional deliveries are made by vessels of other lines, but the bulk of the cargo discharged at Balboa is that from ships of the Pacific Mail. The Panama Railroad vessels will be run through the Canal on a "horse and mule" schedule, dependent on the deliveries of transfer cargo for the line.

### Return of Naval Academy Practice Squadron.

The United States battleships *Missouri*, *Ohio*, and *Wisconsin*, comprising the Naval Academy practice squadron, arrived at Balboa in the morning of Tuesday, August 31, and started immediately on the transit of the Canal. They reached Pedro Miguel Lock in the forenoon, but were held there until 3 p. m., the hour at which the dredging equipment at work in the Cut was moved aside to allow the passage of vessels. The squadron passed through the Cut in the afternoon and the first vessel reached Gatun at half-past six in the evening. It had been expected that the squadron would anchor for the night in the anchorage basin to the south and east of the locks, proceeding to Cristobal in the morning of Wednesday, September 1, but it was decided to put all the vessels through as they arrived. The last completed the passage of the locks after 10 o'clock. The squadron will remain a day at Cristobal, while the vessels take on coal and the midshipmen are allowed to visit the Canal. The squadron is returning to Annapolis after a cruise to San Diego and San Francisco. On the outward voyage the vessels passed through the Canal on July 15 and 16.

### Second 350-ton Floating Crane Being Tested.

The tests of the floating crane *Ajax*, on which a new jib was erected recently, are to begin in the morning of Thursday, September 2.

## WEST INDIAN HURRICANES.

Phenomena of the "Severest Type of Storm Known to the Mariner."

The United States Weather Bureau has published a comprehensive report on "Hurricanes of the West Indies," prepared by Dr. Oliver L. Fassig, professor of meteorology in the Bureau, who spent three years in the hurricane belt, making observations, and compiled the essential data recorded with regard to all the hurricanes occurring in the area during the 35 preceding years.

In the introduction to his report, Dr. Fassig stated:

"The opening of the Panama Canal will bring about a radical change in the sailing routes established during centuries of international traffic. \* \* \* The convergence of new routes to the Caribbean Sea and the Gulf of Mexico will necessitate the crossing of a wide area swept at intervals during several months of the year by the severest type of storm known to the mariner, namely, the West Indian hurricane.

"The increase in the size and speed of vessels has removed many of the hardships of ocean travel, while the steady improvement of wireless communication is eliminating additional terrors of the sea. But with all our modern improvements in the mode of travel, and with our increased knowledge of the law of storms, there will always remain sufficient menace to life and property in a storm at sea to make the hurricane an object to be dreaded and to be avoided if possible."

The hurricane, the report states, is the same type of storm as the "typhoon" and the "cyclone," and the word "cyclone" has been adopted as the technical term covering all so called "revolving" storms. In all of these, the fundamental action is the blowing of surface winds inward, more or less spirally, toward an area of minimum atmospheric pressure, then upward and outward at elevations varying with the extent and intensity of the storm. The term "hurricane" is restricted to cyclones which have their origin and field of action within well defined limits embracing the West Indies and neighboring waters of the north Atlantic. The "tornado" of the United States is a concentrated cyclone, in which with a diameter of only a few hundred feet, the difference in atmospheric pressure at the outer edge and the center may be as great as in a larger cyclonic storm covering hundred's of square miles. The tornado, the thunderstorm, the waterspout, and the squall are usually secondary developments within portions of larger cyclonic storms.

### HURRICANE AREAS AND TRACKS.

The hurricanes originate almost entirely within a well defined area and, after taking a west to northwest course, recurve and enter the eastward drift of the middle latitudes. The hurricane belt may be defined as extending from longitude 56° west to 90° west and

from latitude 12° to 26° north; or, roughly, the area embracing the Caribbean Sea, the Gulf of Mexico, and the West India islands. The Atlantic end of the Canal is approximately 9° 25' north, and is below the belt. The more severe storms which are felt in Limon Bay, and the heavy seas sometimes rolling in, are the secondary, transmitted effects of violent disturbances several degrees to the northward. The hurricane season is from May to November. The normal track for an entire season, as determined from the paths of 135 storms occurring during the 35 years between 1876 and 1910, resembles a parabola in form. The first branch extends west by north, then northward and north; receding over central Florida, the trend is northeastward over the Atlantic along the second branch of the parabola.

#### FREQUENCY OF HURRICANES.

Conditions favorable for the formation of hurricanes in the West Indies begin in the month of June, but do not become well developed until the month of August. From August to the close of October is the principal period for these storms. Of 134 hurricanes occurring during a period of 35 years, the distribution by months was as follows:

	Num-ber	Per Cent.
May.....	1	1
June.....	8	6
July.....	5	4
August.....	33	25
September.....	43	32
October.....	42	31
November.....	2	1
Total.....	134	100

It is seen that 88 per cent occurred during the months of August, September, and October, leaving 12 per cent for the remainder of the season.

#### MOVEMENTS OF HURRICANES.

Tropical storms move more slowly than storms of the middle and higher latitudes. This is a distinct advantage to those in the tropical storm area, as it enables warnings to be sent out. The average rate of travel of the hurricanes is about 12.5 miles per hour, compared with about 30 miles an hour for the cyclones of the temperate regions. In the tropics, the storm center frequently remains nearly stationary for several days. The average duration of the storm is six days, though durations have varied from one to 19 days. The force of the wind, or intensity of the storm will vary greatly, but at the center of disturbance the wind may blow as high as 72 miles per hour for a period of five minutes, or reach 120 miles an hour for one minute. The hurricanes are usually accompanied by a heavy fall of rain, and by lightning and thunder.

On account of the relatively slow progressive movement of the storm center, the warnings which are sent out by the weather observatories, or the indications in the sky and wind, or by the barometer, of the approach of a storm afford fair warning and there is little chance of an experienced mariner's being overtaken by a hurricane unawares.

#### SEPTEMBER HURRICANES.

As a matter of timely interest to mariners making the Canal ports, and for illustration of the general course of the hurricanes of the West Indies, there is published herewith a chart showing the paths of the hurricanes occurring in the month of September, from 1876 to 1911. Dr. Fassig states with respect

to the storms in September that they have their origins very largely well toward the eastern end of the hurricane area, but that there is fair distribution of origins over the entire area. They have a comparatively long sweep along the first branch of the parabolic course, before reaching the recurve, and take a west-northwest course. The average point of recurve is along the eastern coast of Florida in latitude 28° north. Only a small percentage fail to recurve, but many enter the Southern States before recurving. The August and September hurricanes extend farther across the Gulf of Mexico than those of June, July, and October.

#### REPORTS ON MOST RECENT HURRICANE.

Something of the manner in which the hurricanes are reported by the Weather Bureau is shown by the following daily reports sent out in connection with the weather map, and covering the storm which recently blew up out of the Windward Islands, swept across the Gulf of Mexico, and caused great damage at Galveston. The weather map notations by days, at 8 a. m. each day, were as follows:

*Tuesday, August 10*—The first West Indian disturbance of the present season has appeared near the central portion of the Windward Islands, but reports thus far received do not indicate its intensity. Cautionary advice has been issued.

*Wednesday, August 11*—The tropical disturbance of Monday morning is now apparently central near the Island of St. Croix with increased intensity, and with a west-northwest movement of about 18 or 20 miles an hour, which should bring it over Santo Domingo and Haiti during Thursday and Thursday night, probably reaching southeastern Cuba Thursday night or Friday. Thus far a wind velocity of 60 miles an hour from the northeast was observed at San Juan.

*Thursday, August 12*—The tropical disturbance is apparently central this morning south of and near the Island of Haiti, moving in a direction a little north of west. Reports from that vicinity are missing, with the exception of that from Kingston, Jamaica, which reported northerly gales east of the island.

*Friday, August 13*—The tropical storm passed northward over the Island of Jamaica during Thursday night. While Cuban reports have not been received, it appears probable that the storm will follow the course outlined a few days ago. During Thursday the storm was attended by gales over western Haiti, and this morning a whole gale from the southeast was blowing at Kingston, Jamaica.

*Saturday, August 14*—The tropical storm is apparently central this morning near extreme western Cuba. Havana reports an easterly wind of 56 miles an hour. The storm appears to have turned a little more to the north of west, but missing reports prevent a more definite determination at present. It will probably enter the Gulf of Mexico Saturday night.

The weather map for Sunday, August 15, was not received by the Section of Meteorology and Hydrography of The Panama Canal. On that day the hurricane was traveling across the Gulf of Mexico.

*Monday, August 16*—The tropical disturbance is now approaching the coast, apparently near the Texas-Louisiana line. During the last 24 hours easterly gales were reported throughout the east Gulf and along the middle Gulf coast, and strong northeast winds are now setting in on the west coast. The necessary storm and hurricane warnings were ordered Sunday.

*Tuesday, August 17*—The tropical storm has evidently passed into the interior of southeastern Texas. Reports from that section are missing this morning, but press reports indicate that the center is passing over, near Galveston early Monday evening, with a barometer reading of about 29.00 inches, and a wind of over 70 miles an hour.

*Wednesday, August 18*—Reports from southeastern Texas are still missing, but a report 24 hours old from Houston, by mail and telegraph via Taylor, Tex., states that the storm center apparently passed south of Houston early Tuesday morning. The lowest barometer reading at Houston was 28.21 inches at 5.30 a. m., and the highest wind velocity 80 miles an hour from the northeast. The total rainfall in 24 hours was 7.18 inches. The damage was enormous. Neither wires nor trains have led out of Galveston since Monday evening.

*Thursday, August 19*—The great storm still persists over northeastern Texas, but with greatly diminished

intensity. Its northward movement has been effectually retarded by the cool, high area to the northeastward, and it now apparently has a very slow east-northeast movement. There were no high winds during the last 24 hours in the vicinity of the storm, but heavy rainfall continued, and extended into Arkansas and western Tennessee. Delayed reports from Galveston show a wind velocity of 90 miles an hour during Monday night, and the hurricane lasted 15 hours.

*Friday, August 20*—The tropical storm has taken a new lease of life, after recovering over eastern Texas, and it is central this morning over southeastern Missouri with increased intensity, attended by heavy rains and local high winds.

The report of 8 a. m., Friday, August 20, is the latest at hand. It is probable, however, that the storm has followed the usual course to the northeastward and passed out to the Atlantic somewhere off the northeast coast of the United States.

#### SIGNS OF AN APPROACHING TROPICAL CYCLONE.

The diurnal changes in pressure, wind direction, and cloud conditions in the tropics are so uniform that any departure from the normal is a sign for greater caution in noting the atmospheric conditions, especially during the period from July to October. In general, the atmospheric changes preceding a storm in the tropics do not differ greatly from those in more northern latitudes. The feeling of personal discomfort arising from increased humidity and diminished wind movement, the falling barometer, increasing cloudiness, formation of halos, and changes in wind and cloud direction and velocity are common to all parts of the world upon the approach of a general cyclonic disturbance. However, in the tropics the cirrus clouds, the white, fleecy cloud-forms which float at great elevations above the earth's surface, take on forms and motions over an atmospheric disturbance distinctly different from those observed at times of normal conditions of atmosphere. Dr. Fassig quotes on this point from the observations of Padre Benito Viñes of Havana. The latter observed that in a hurricane:

"The rotation and the cyclonic circulation take place in such a manner that the inferior currents, as a rule, converge more or less toward the vortex; at a certain altitude the currents follow a nearly circular course, and higher still their course is divergent. It is particularly to be noticed that this divergence is all the greater as the currents occupy higher altitudes, until a point is reached where the highest cirrus clouds are seen to move in completely divergent radial direction. Thus, if the vortex lie due south the wind will blow more or less from the east-northeast, the lowest clouds will move from the east, the alto-cumulus clouds from the east-southeast, the dense cirro-stratus from the southeast, the cirro-cumulus from the south-southeast, and the light cirrus from the south. \* \* \* The cyclonic currents which exhibit the greatest regularity and point out best the bearing of the vortex are those of the cirrus and the low clouds. The current of the cirrus clouds is that which should be selected when the first indications of the approach of a cyclone are seen and the vortex is still far distant. In the interior of the storm the observer must be guided principally by the movements of the low clouds."

The Rev. F. Faura of Manila made similar observations on the cirrus clouds, stating:

"The best means for determining the center (of a storm) and for following up its movements are the cirri, little clouds of a very fine structure and clear optical color, which appear as elongated feathers, and which are known among sailors as 'cocktails.' Long before the least sign of bad weather is noticeable \* \* \* the small isolated clouds appear in the upper regions of the atmosphere. They seem \* \* \* to be drawn out in the direction of some point on the horizon toward which they converge. Their visibility is lost before they reach the point of radiation. We often had an opportunity to watch them at Manila when the center was still 600 miles distant. Later on the delicacy of form is lost and the clouds appear in more confused and tangled forms, with central nuclei which still maintain the direction."

It can be seen from this that if, in observations on succeeding days from a stationary



observatory, the clouds indicate the center to be on the same point of the horizon, the hurricane is advancing toward the observatory.

Squalls and showers are nearly always experienced within from 24 to 48 hours in advance of a hurricane. The squalls increase in frequency and violence with the development of the storm.

Thunderstorms can not be considered as precursory signs, as the storm is well under way before thunder is heard. They are regarded by some observers as evidences of the breaking away of the storm.

Ocean swells, Dr. Fassig states, often an-

The signs noted above are generally observed at distances varying from 500 to 1,000 miles in advance of the center of the hurricane. Within the radius of a day's movement of the storm, or about 300 to 400 miles from the



PATHS OF WEST INDIAN HURRICANES DURING SEPTEMBER, FROM 1876 TO 1911.

Labor Day at Taboga.

To take care of the Labor Day visitors to the Aspinwall Hotel the Supply Department will run the regular schedule of launches to and from Taboga, printed elsewhere in this issue, and in addition thereto a trip will be made, leaving the dredge landing at 8 p. m. on Saturday, to accommodate persons arriving on the evening train. On Saturday night and Sunday morning the launch *Og* will stand by to supplement the service of the launch *Aspinwall*. On Monday evening a tug will be secured, to insure the comfortable return of all guests." From Saturday evening to Monday evening two musicians will be on hand to add to the entertainment of the patrons of the hotel.

**Week-end and Holiday Rates at the Hotel Wash-  
ington for Employees.**

The following week-end and holiday rates have been approved for the Hotel Washington. They are on the European plan, and are rates for room only:

*First grade*—One in room, \$2.25; two in room, \$2.50.

*Second grade*—One in room, \$1.75; two in room, \$2.

Third grade—One in room, \$1.50; two in room, \$1.75.

These room rates are for employees and those entitled to employees' rates only. They will be granted on rooms taken any time Saturday or Sunday and released prior to noon Monday, and on rooms taken any time on a day preceding a Canal Zone holiday or on a holiday and released prior to noon on the day following the holiday.

### Public Concerts by Military Bands.

The following is a tentative schedule of public concerts to be given by the bands of the infantry regiments stationed on the Isthmus. In addition, the band of the Twenty-ninth Infantry will give concerts at Gatun, at intervals not now determined. The schedule is subject to change with respect to the band designated for each date.

September 1.....	Balboa clubhouse.....	5th Infantry
Labor Day, Sept. 6.....	Cristobal clubhouse.....	10th Infantry
September 8.....	De Lesseps Park.....	29th Infantry
September 15.....	Corozal.....	5th Infantry
September 22.....	De Lesseps Park.....	10th Infantry
September 29.....	Balboa clubhouse.....	29th Infantry
October 6.....	De Lesseps Park.....	5th Infantry

### Transportation of Children Under 16 Years of Age on Steamship Line.

The Panama Railroad Steamship Line has

adopted a ruling that it will not furnish transportation on its vessels to any child under 16 years of age who is not accompanied by a parent, guardian, or some other adult passenger who will be responsible for the care of the child during the voyage. In addition, it has been ruled that employees of the line will not assume any responsibility for such a child, and will not be permitted to offer suggestions as to the selection of the adult passenger to take care of a child in the event it is not accompanied by a parent or guardian.

### New Prices for Coal.

Effective September 1, the price of coal for ships has been increased to \$6 per ton at Cristobal and \$7 per ton at Balboa.

## OFFICIAL CIRCULARS.

**"Alliance" to Sail Friday.**

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., August 30, 1915.

CIRCULAR NO. 135:

To all concerned—The steamship *Alliance*, scheduled to sail from Cristobal on Saturday, September 4, will, on account of not making the trip through the Canal, sail from Pier No. 11, Cristobal, on Friday, September 3.

S. W. HEALD,  
Acting Superintendent.

**Sailings of Panama Railroad Vessels.**

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., August 30, 1915.

CIRCULAR NO. 134:

All concerned—Hereafter all Panama Railroad steamers not passing through the Canal, will sail from New York on Fridays instead of Saturdays, as scheduled. Due notice will be given before or just after the arrival of each ship when the schedule is to be changed.

S. W. HEALD,  
Acting Superintendent.

**Telephones.**

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., August 16, 1915.

CIRCULAR NO. 650-2:

1. Telephones will be installed in offices and private residences for the transaction of official business on work requests submitted on the Electrical Division by the head of the department or division concerned, and approved by the Governor. Changes and removals may be requested under general blanket requests. The expense of installations, charges, and removals, where the cost exceeds \$5 will be borne by the department or division making the request.

2. The telephone instrument and its accessories are to remain the property of the Panama Railroad Company.

3. Telephones for private use will be installed upon written application of the subscriber, approved by the Electrical Engineer, and will be classed as "A" and "B" telephones.

4. No charge will be made against the subscriber for the installation of these telephones, and applications will not be approved if the cost of installation is considered by the Electrical Engineer to be excessive. No charge will be made for removals or change of location of private telephones, unless changes of location are requested within six months of the date of original installation, in which case the cost of the change will be charged against the subscriber.

5. A monthly charge of \$1.50 U. S. currency will be made for class "A" telephones, and this service will cover local calls that pass through the home exchange only. An additional charge of 25 cents U. S. currency will be made for each call going to another exchange.

6. A monthly charge of \$7.50 U. S. currency will be made for class "B" telephones, and this service will cover calls to any exchange on the Panama Railroad telephone system.

7. Additional instruments as extensions to class "A" or class "B" telephones will be furnished at an additional charge of \$1.50 per month for each extension.

8. Charges will begin upon the day of installation and the charge for a fractional part of a month will be 1/30 of the regular rate for each day. After the first fractional part of a month bills will be payable by calendar months and no reduction will be made when service is discontinued unless the service has continued for more than six calendar months, in which case payment will be required only to the date of discontinuance.

9. Bills are due and payable within the first half of the month for which the service is rendered. If not paid by the close of business on the 15th of the month an additional charge of \$1 will be made. Subscribers who have telephones will be expected to pay their bills promptly after the initial notice whether or not they receive an additional monthly notice.

10. Conversations between private telephones, either class "A" or "B", will be limited to five minutes between 5 p. m. and 5 p. m., except on Sundays and holidays.

11. Telephones at the Hotel Tivoli, Hotel Washington, and at railroad stations will be maintained in a strictly pay-station basis, except that holders of telephone franks may use such telephones on official business by giving the operator on duty their name and the number of their frank. Such franks will also permit the holder to call subscribers on the Panama Railroad telephone system from the telephones of the Isthmian Telephone Company and the Compañía de Teléfonos de Panamá, provided he gives the operator his name and frank number.

12. This circular is effective September 1, 1915. Circulars Nos. 650 and 650-1 are hereby revoked, effective on the same date.

CHESTER HARDING,  
Acting Governor.

**Surplus Typewriter Covers.**

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 19, 1915.

HEADS OF DEPARTMENTS AND DIVISIONS:

It is requested that you return any surplus typewriter covers, either metal or rubber, and typewriter baseboards that you may have on hand to the storehouse at Balboa.

WM. R. GROVE,  
Chief Quartermaster.

**Acting Local Agent at Panama.**

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., August 26, 1915.

CIRCULAR NO. 133:

To all concerned—Effective August 26, 1915, Mr. O. A. Vallarino will act as local agent at Panama during the absence of Mr. A. B. Goodnow on leave.

S. W. HEALD,  
Acting Superintendent.

**Supplies for Concrete Block Contractors.**

For the information of all concerned, there is published herewith a letter from the Acting Governor to the contractors for 10,000 concrete blocks for the Atlantic breakwaters, setting forth conditions governing requests for materials, supplies, etc.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., August 26, 1915.  
MESSRS. J. A. WALKER AND W. A. TORBERT,  
Balboa, C. Z.

SIRS: All requests for material and supplies, tools and equipment, or for the rendition of services by any department or division of The Panama Canal in connection with your contract, whether the items are to be paid for by you or to be without charge, must be made through the inspector in charge of the work, Mr. Roger A. Wilson.

This is necessary in order that proper record may be made of all transactions and to insure that the contract provisions are complied with.

In making requisitions for material or services, one copy in excess of the number otherwise required should be sent for retention by Inspector Wilson, except where material is ordered on the contractor's orders, in which case no copy will be retained by him.

All foreman's orders and requisitions for supplies from the storehouse will be OK'd by the inspector before forwarding. The inspector will also approve all requisitions for old and second-hand material that may be available before same is turned over to you. He will keep a record of such material, and you will be expected to receipt to him for same.

All equipment received by you will be receipted for by you and charged directly against you on the books of the Auditor's office until returned, instead of being covered by memorandum receipt issued by an accountable official of The Panama Canal.

All small tools required by you will be invoiced to you at current prices in accordance with the contract. If their return is accepted upon termination of the contract, it will be at prices fixed by the Surveying Officer under the provisions of article 8 of the contract.

The Dredging Division will be authorized to deliver to and charge against you such gravel as may be required for ballast of tracks. You will report to the inspector the amount of gravel used for this purpose.

Inspector Wilson will be instructed to indicate on each requisition whether the material is to be billed against you or whether you are to receive it without charge.

Respectfully,  
CHESTER HARDING,  
Acting Governor.

**Examination by Board of Local Inspectors.**

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 304, on Wednesday, September 8, 1915, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for licenses must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In providing themselves with automobiles with which to demonstrate their ability to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding

the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the signal station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, September 10, 1915, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board.

F. M. NIXON,  
Recorder, Board of Local Inspectors.

**JOINT LAND COMMISSION.****Notice.**

The following is a calendar of claims set for hearing during the week ending September 4:

Monday, August 30—Docket 890, Francisca de la Barrera, et al.

Tuesday, August 31—Docket 892, Ramón M. Valdes.

Wednesday, September 1—Docket 943, Margarita Rodriguez; docket 954, John Smith; docket 955, Samuel Lawrence; docket 958, Joseph King.

Thursday, September 2—Docket 960, W. A. Burke; docket 961, W. Barnes; docket 969, Santa Carvas.

Friday, September 3—Rev. Dr. Guillermo Rojas, Bishop of Panama, (for Exaltacion Church), docket 974.

The following is a calendar of claims set for hearing during the week ending September 11, 1915:

Tuesday, September 7—Docket 749, Carlos Delgado; docket 1662, Juana Miranda.

Wednesday, September 8—Docket 978, Isaac Lowe; docket 982, Maria Jim Roanes; docket 984, Joseph Malabre; docket 987, Jos. L. Arias.

Thursday, September 9—Docket 988, Dionisio Alveo; docket 939, Juan Bautista Rodriguez; docket 992, José Gregorio Rodriguez; docket 993, Encarnacion Magina.

Friday, September 10—Docket 996, Jesus Moran; docket 997, José Altamir; docket 998, Joaquin Garcia; docket 1005, Antonio Avilla.

J. A. LANGSTON, Acting Secretary.

**Notice of Award.**

In the matter of the claim of *Gumerinda Iglesias*, for property located in Las Cascazas, award No. 93, docket No. 866, August 20, 1915—An award is hereby made against the United States, in favor of the person herein named, in the sum of \$400 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 20th day of September, 1915, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

*Gumerinda Iglesias*, docket No. 866—For all rights, claims, and other interests which the said *Gumerinda Iglesias* may possess or may have possessed in and to houses, tax Nos. 1658 and 1670, in Las Cascazas, Canal Zone, the sum of \$400 United States currency.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

**Rules of Dismissal.**

In the matter of the claim of *George Monrose (Monrose)*, for property located at Caimito, rule of dismissal No. 193, docket No. 913, August 24, 1915.—In the matter of the claim of *George Monrose (Monrose)*, docket No. 915, for property located at Caimito, this claim came on for hearing August 24, 1915, and the evidence before the Commission is that payment for the property covered in this claim was made on June 19, 1913, in the sum of \$39. In view of this payment, and upon motion of counsel for the claimant, this claim is hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

In the matter of the claim of *Mercedes Romero*, for property located at Ballamano, rule of dismissal No. 194, docket No. 927, August 24, 1915.—In the matter of the claim of *Mercedes Romero*, docket No. 927, for property located at Ballamano, this claim came on for hearing on August 24, 1915, and the evidence before the commission is that payment for the property cover-



ed in this claim was made on January 10, 1914, in the sum of \$75. In view of this payment, and upon motion of counsel for the claimant, this claim is hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

In the matter of the claim of Juan Apericio (Aparicio), rule of dismissal No. 192, docket Nos. 980 and 1594, August 24, 1915—With reference to the claims of Juan Apericio (Aparicio), docket Nos. 880 and 1535, at the public session of the Commission held on August 24, 1915, counsel for the claimant announced in open session that settlement of these claims had been arrived at with counsel for the Government and moved that

these cases be dismissed. The motion was allowed and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

In the matter of the claim of William Morris (Charlotte Morris), rule of dismissal No. 187, docket No. 840, June 23, 1915—With reference to the claim of William Morris (Charlotte Morris), docket No. 840, the evidence before the Commission is that they have made settlement with the United States, payment having been made to claimants on the 18th day of May, 1915, under voucher No. 5963.

In view of such settlement no further action is necessary by this Commission, and the claim of William

Morris (Charlotte Morris), docket No. 840, is therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

#### Taboga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p. m.; Monday, Thursday, Saturday, and Sunday, at 9.40 a. m.

Leave Taboga—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier); Monday, Thursday, and Saturday at 1.30 p. m.; Sunday at 7.15 p. m. The 9.40 a. m. trips from Balboa await the arrival of Panama Railroad trains.

### RETAIL BOOT AND SHOE PRICE LIST.

#### Commissary Branch of Supply Department.

The following is the retail price list of boots and shoes, and miscellaneous leather goods, sold in the Canal commissary stores. It is designated as price list No. 1, in effect September 1, 1915. The following prices will be increased by 10 per cent in cases of sales to commercial ships and foreign naval vessels, and by 20 per cent in cases of sales to yachts.

S. N.	Article.	Unit.	Price	S. N.	Article.	Unit.	Price.
<i>Sandals.</i>				<i>Shoes, Girls'—Continued.</i>			
23161	Child's Barefoot.....	Pair	\$1.40	23273	White canvas pumps.....	Pair	\$1.80
23171	Child's Barefoot.....	Pair	1.20	23282	Tan vici Blucher Oxford.....	Pair	2.20
23172	Women's Barefoot.....	Pair	1.65	23283	Black vici Blucher Oxford.....	Pair	2.10
<i>Shoes, Boys' and Youths'.</i>				23291	Tan play, Oxford.....	Pair	1.60
23242	Glazed calf Blucher, Oxford.....	Pair	3.10	<i>Shoes, Men's.</i>			
23243	Glazed calf Blucher.....	Pair	3.10	24112	High tan Blucher.....	Pair	4.65
23252	Tennis, rubber sole.....	Pair	1.10	24114	Tan calf Blucher, Army.....	Pair	3.90
23253	Tennis, rubber sole.....	Pair	1.05	24128	White canvas Blucher Oxford.....	Pair	2.30
23258	Boy Scout.....	Pair	2.60	24134	White canvas Blucher.....	Pair	2.35
23259	Youth's Scout.....	Pair	2.40	24144	Black kid.....	Pair	4.25
23261	Tennis Oxford.....	Pair	1.40	24164	Tan chrome calf.....	Pair	4.00
23266	Chocolate tan Blucher.....	Pair	2.70	24189	White canvas Oxford, rubber sole.....	Pair	1.25
23276	Gun metal Blucher Oxford.....	Pair	2.20	24213	Vici Blucher.....	Pair	4.25
23277	Tan Blucher Oxford.....	Pair	2.20	24214	Gun metal Blucher Oxford.....	Pair	4.00
23278	Gun metal Blucher Oxford.....	Pair	2.40	24228	Russia Blucher Oxford.....	Pair	4.55
23279	Tan calf Blucher Oxford.....	Pair	2.40	24229	Willow calf Blucher.....	Pair	4.25
23286	Tan Oxford.....	Pair	2.70	24241	Tan willow calf.....	Pair	4.70
23292	Dull calf Oxford.....	Pair	2.65	24242	Vici box kid Blucher Oxford.....	Pair	4.30
23293	Dull calf Blucher Oxford.....	Pair	2.70	24244	Glazed kid Oxford.....	Pair	5.20
23294	Tan grain Blucher.....	Pair	2.70	24245	Gun metal Blucher Oxford.....	Pair	4.95
23295	Tan grain Blucher Oxford.....	Pair	2.65	24251	Box calf Blucher, Army.....	Pair	3.75
23296	Dull calf Blucher.....	Pair	2.40	24264	Gun metal Blucher Oxford.....	Pair	4.95
23297	Tan calf Blucher.....	Pair	2.40	24271	Gun metal Oxford.....	Pair	3.55
<i>Shoes, Children's.</i>				24273	Black vici Blucher.....	Pair	3.85
23217	Pumps, pat., ankle strap.....	Pair	1.90	24279	Black gun metal Blucher Oxford.....	Pair	4.55
23222	Pumps, pat., ankle strap.....	Pair	1.60	24285	Tan Blucher Oxford.....	Pair	5.25
23225	Pumps, pat., ankle strap.....	Pair	1.10	24286	Gun metal Blucher.....	Pair	5.55
23241	Button.....	Pair	1.10	24287	White buck Blucher Oxford.....	Pair	4.95
23245	Dongola Blucher.....	Pair	2.00	24288	Tan ventilated Blucher.....	Pair	3.15
23246	Dongola Blucher.....	Pair	2.35	24291	Tan vici Blucher Oxford.....	Pair	5.25
23262	White buck, button.....	Pair	1.30	24311	Tennis, white canvas, bal.....	Pair	1.40
23263	White, Nubuck, button.....	Pair	2.05	24312	Gun Metal Blucher Oxford.....	Pair	4.15
23269	White canvas pumps.....	Pair	.90	24313	Vici Blucher Oxford.....	Pair	4.30
23271	White canvas pumps.....	Pair	1.20	24314	Tan Russia Oxford.....	Pair	4.15
23272	White canvas pumps.....	Pair	1.45	24315	White canvas Blucher Oxford.....	Pair	4.65
23274	Black kid, button.....	Pair	1.20	24316	Glazed kid Blucher.....	Pair	5.35
23275	Tan kid, button.....	Pair	1.20	24323	Tan Russia Blucher.....	Pair	4.30
23281	Tan vici, Blucher, Oxford.....	Pair	1.80	24324	Gun metal Blucher.....	Pair	4.30
23287	Black vici, Blucher, Oxford.....	Pair	1.80	24327	Tan Russia Blucher Oxford.....	Pair	4.00
23288	Tan play, Oxford.....	Pair	1.20	24329	Gun metal Oxford.....	Pair	3.70
23289	Tan play, Oxford.....	Pair	1.45	24331	Tan Russia Oxford, rubber sole.....	Pair	3.80
<i>Shoes, Girls'.</i>				24334	Gun metal Blucher Oxford.....	Pair	4.95
22245	Black vici, Blucher, Oxford.....	Pair	2.50	24335	Tan Blucher Oxford.....	Pair	5.35
23215	Pumps, patent, ankle strap.....	Pair	2.20	24336	Tan Blucher.....	Pair	6.16
23229	Black Russia Oxfords.....	Pair	2.50	24337	Tan Blucher Oxford.....	Pair	5.80
23247	Dongola Blucher.....	Pair	2.65	24339	Tan calf Blucher, Army.....	Pair	3.90
23264	White Nubuck, button.....	Pair	2.35	24341	White buck Blucher Oxford.....	Pair	5.25
23267	Gun metal, button.....	Pair	2.20	24344	Gun metal Blucher Oxford.....	Pair	4.25
23268	Tan vici, button.....	Pair	2.20	24346	Gun metal Blucher.....	Pair	4.25
				24347	Tan Blucher.....	Pair	6.15
				24348	Moulder's.....	Pair	1.65
				24349	White canvas Oxford, red rubber sole.....	Pair	1.50
				24351	Chocolate tan Blucher.....	Pair	3.15



S. N.	Article.	Unit	Price.	S. N.	Article.	Unit	Price.
<i>Shoes, Men's—Continued.</i>				<i>Brushes.</i>			
24353	Russia Blucher.....	Pair	\$3. 30	21158	Brushes and daubers, Shinola.....	Set	\$0. 29
24354	Black Blucher.....	Pair	3. 30	<i>Buttons, Shoe.</i>			
24355	Black Blucher.....	Pair	3. 15				
24356	Russia Blucher.....	Pair	2. 35	21166	Buttons, shoe, black or tan.....	Doz.	.01
24357	Pumps, gun metal, Tango.....	Pair	3. 80	21172	Buttons, shoe, white.....	Doz.	.18
24358	Black vici Blucher Oxford.....	Pair	5. 15	21178	Buttons, shoe, black.....	Doz.	.01
24359	Blucher Oxford.....	Pair	5. 35	<i>Calks.</i>			
<i>Shoes, Women's.</i>							
22175	Vici kid Blucher Oxford.....	Pair	3. 45	21186	Calks, wing, screw.....	Box	.37
22184	Pumps, white canvas.....	Pair	2. 35	<i>Cases, Brush.</i>			
22186	Ties, white canvas.....	Pair	2. 00				
22198	Vici Blucher Oxford.....	Pair	2. 85	9479	Cases, brush, fitted.....	Each	1. 95
22199	Vici Blucher.....	Pair	3. 05	<i>Cases, Cigarette.</i>			
22211	Tan Russia Oxford.....	Pair	3. 25				
22215	Tan Russia Blucher.....	Pair	3. 35	11235	Cases, Cigarette, Morocco, telescope.....	Each	.84
22216	Vici Blucher Oxford.....	Pair	3. 10	<i>Cases, Dressing.</i>			
22219	Pumps, satin, black.....	Pair	2. 90				
22221	Black kid Oxford.....	Pair	1. 50	9485	Cases, dressing, leather.....	Each	8. 10
22224	Gun metal Blucher Oxford.....	Pair	3. 45	21189	Cases, dressing, men's.....	Each	3. 70
22225	Pumps, dull calf.....	Pair	3. 45	<i>Cases, Letter.</i>			
22226	Tan Russia Blucher Oxford.....	Pair	3. 45				
22228	Pumps, patent colt.....	Pair	3. 45	11227	Cases, letter, pigskin.....	Each	.38
22229	Tan Russia Blucher, rubber sole.....	Pair	3. 75	11228	Cases, letter, Morocco.....	Each	.83
22231	Blucher Oxford.....	Pair	3. 75	<i>Cases, Suit.</i>			
22232	White Nubuck Blucher Oxford, rubber sole.....	Pair	4. 00				
22233	Dongola Blucher Oxford.....	Pair	4. 00	5895	Cases, suit, leather, 24".....	Each	9. 95
22234	White canvas Blucher Oxford, rubber sole.....	Pair	3. 45	8939	Cases, suit, leather, 24".....	Each	4. 30
22236	Pumps, opera satin, black and white.....	Pair	2. 60	9477	Cases, suit, nut hide, 24".....	Each	10. 20
22237	Pumps, gun metal, Col welt.....	Pair	3. 75	9642	Cases, suit, fiber, 24".....	Each	.90
22238	Pumps, patent colt, Col.....	Pair	3. 75	9652	Cases, suit, leather, 24".....	Each	16. 65
22242	Pumps, white Nubuck opera.....	Pair	2. 90	9657	Cases, suit, hide, 24".....	Each	22. 00
22243	White Nubuck Blucher Oxford.....	Pair	3. 75	<i>Heels, Rubber.</i>			
22244	Patent pumps.....	Pair	2. 40				
22247	Dull calf pumps.....	Pair	3. 75	21142	Heels, rubber, men's, black.....	Pair	.27
22248	Patent colt pumps, Col.....	Pair	3. 75	21191	Heels, rubber, men's, tan.....	Pair	.27
22249	Patent pumps, Col.....	Pair	2. 65	21192	Heels, rubber, women's, black, Cuban.....	Pair	.23
22251	Gun metal pumps.....	Pair	2. 65	21193	Heels, rubber, women's, tan, Cuban.....	Pair	.23
22252	White canvas pumps.....	Pair	2. 15	<i>Hooks.</i>			
22253	Gun metal Blucher Oxford.....	Pair	2. 65				
22254	White Nubuck pumps.....	Pair	3. 75	21171	Hooks, button, 6".....	Each	.09
22255	Pumps, 2-inch heel.....	Pair	3. 45	<i>Labels, Leather.</i>			
22256	Pumps, Dongola Saxon.....	Pair	3. 80				
22257	Pumps, white canvas, Saxon.....	Pair	3. 30	9484	Labels, luggage.....	Each	.08
<i>Slippers.</i>				<i>Laces, Shoe.</i>			
24165	Alpargatos.....	Pair	.16	21112	Laces, mercerized, black, tan, and white.....	Pair	.05
24246	Women's bath.....	Pair	.50	21117	Laces, tubular, white.....	Pair	.01
24259	Men's kid (in case).....	Pair	2. 50	21144	Laces, Nufashund, black or tan.....	Pair	.06
24281	Men's black vici.....	Pair	1. 65	21156	Laces, silk, Nufashund, black, tan, and white, 30".....	Pair	.17
24282	Men's tan vici.....	Pair	1. 65	21168	Laces, silk, 30", black, tan, and white.....	Pair	.13
24352	Men's bath.....	Pair	.50	21188	Laces, white, cotton, Oxford.....	Pair	.02½
<i>Shoe Findings and Leather Goods.</i>				<i>Leggins.</i>			
<i>Bags.</i>							
9644	Bags, hand, walrus, 18".....	Each	9. 65	5791	Leggins, khaki, canvas.....	Pair	.71
9654	Bags, kit, hide, 18".....	Each	15. 75	8811	Leggins, leather, motor.....	Pair	3. 65
9822	Bags, hand, walrus, 16".....	Each	7. 25	9366	Puttees, dark olive drab.....	Pair	1. 00
11438	Bags, hand, walrus, 18".....	Each	8. 20				
11439	Bags, hand, cowhide, 18".....	Each	10. 70				
11441	Bags, hand, cowhide, 16".....	Each	6. 50				
11442	Bags, hand, cowhide, 18".....	Each	10. 00				
21187	Bags, women's, fitted, 16".....	Each	16. 65				
21188	Bags, women's, unfitted, 16".....	Each	6. 85				
<i>Boxes.</i>							
9487	Boxes, collar, leather.....	Each	1. 15				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
	<i>Lifts, Shoe.</i>				<i>Purses.</i>		
21118	Lifts, cow horn.....	Each	\$0.13	2272	Purses, pigskin.....	Each	\$0.20
	<i>Polishes.</i>			8452	Purses, velvet, calf.....	Each	.39
				8453	Purses, velvet, calf.....	Each	.46
				9483	Purses, leather.....	Each	.30
21121	Polish, Blanco.....	Tin	.12		<i>Sols, Leather.</i>		
21124	Viscol shoe and leather dressing.....	Tin	.19				
21147	Sterling dressing, black or tan.....	Bot.	.12				
21154	Dressing, white canvas.....	Bot.	.06	21173	Half soles, Hemlock.....	Pair	.40
21164	Polish, 2 in 1, black or tan.....	Tin	.06		<i>Trees, Shoe.</i>		
21194	Polish, liquid, black.....	Bot.	.07				
21195	Polish, liquid, tan.....	Bot.	.07				
23265	Polish, white, Albo.....	Tin	.06	21143	Trees, shoe, men's and women's.....	Pair	.86

## SHIPPING INFORMATION

## Tide Predictions.

Panama (Balboa) tide predictions for the next five weeks are given in this table:

## SEPTEMBER.

DATE.	Time and height of high and low water.			
Wed., Sept. 1.....	2:21	8:17	14:51	20:52
	3.6	12.3	3.5	11.2
Thurs., Sept. 2.....	3:12	9:06	15:49	21:55
	4.5	11.2	4.3	10.5
Fri., Sept. 3.....	4:13	10:15	16:55	23:21
	5.3	10.9	4.6	10.3
Sat., Sept. 4.....	5:24	11:40	18:05	24:48
	6.1	10.7	5.4	11.0
Sun., Sept. 5.....	0:39	6:30	12:53	19:00
	7.7	5.0	11.2	3.8
Mon., Sept. 6.....	1:37	7:30	13:48	19:54
	11.5	7.2	12.1	2.9
Tues., Sept. 7.....	2:20	8:17	14:30	20:38
	12.6	3.1	13.0	1.9
Wed., Sept. 8.....	2:56	8:58	15:08	21:16
	13.7	2.0	14.0	1.0
Thurs., Sept. 9.....	3:31	9:38	15:31	21:54
	14.7	0.9	14.8	0.2
Fri., Sept. 10.....	4:04	10:16	16:21	22:31
	15.6	0.0	15.5	-0.3
Sat., Sept. 11.....	4:34	10:58	16:38	23:10
	16.3	-0.6	15.8	-0.5
Sun., Sept. 12.....	5:12	11:35	17:36	23:48
	16.6	-0.9	15.9	-0.4
Mon., Sept. 13.....	5:51	12:16	18:15	24:23
	16.6	-0.8	15.6	-0.3
Tues., Sept. 14.....	0:32	6:31	13:00	19:00
	0.1	16.2	-0.2	14.9
Wed., Sept. 15.....	1:18	7:19	13:49	19:39
	0.9	15.4	0.6	14.0
Thurs., Sept. 16.....	2:09	8:09	14:46	20:48
	1.2	14.3	1.6	13.0
Fri., Sept. 17.....	3:12	9:15	15:53	21:54
	2.9	13.3	2.4	12.3
Sat., Sept. 18.....	4:26	10:36	17:09	23:25
	3.6	12.5	2.8	12.2
Sun., Sept. 19.....	5:46	12:06	18:24	24:50
	3.6	12.5	2.5	11.0
Mon., Sept. 20.....	0:55	6:58	13:22	19:29
	12.8	2.9	13.1	1.9
Tues., Sept. 21.....	1:39	7:40	14:21	20:23
	13.8	2.0	13.9	1.2
Wed., Sept. 22.....	2:48	8:50	15:09	21:10
	14.7	1.1	14.6	0.6
Thurs., Sept. 23.....	3:41	9:36	15:52	21:53
	15.3	0.4	15.0	0.3
Fri., Sept. 24.....	4:10	10:16	16:31	22:33
	15.7	0.0	15.2	0.3
Sat., Sept. 25.....	4:36	10:55	17:07	23:10
	15.7	-0.1	15.1	0.5
Sun., Sept. 26.....	5:21	11:32	17:42	23:48
	15.3	0.2	14.7	1.1
Mon., Sept. 27.....	5:53	12:09	18:17	24:23
	14.8	0.8	14.0	0.0
Tues., Sept. 28.....	0:25	6:26	12:48	18:52
	1.9	14.0	1.6	13.2
Wed., Sept. 29.....	1:04	6:59	13:28	19:30
	2.8	13.2	2.5	12.3
Thurs., Sept. 30.....	1:46	7:37	14:14	20:13
	3.7	12.3	3.4	11.4

## OCTOBER.

DATE.	Time and height of high and low water.			
Fri., October 1.....	2:36	8:23	15:09	21:13
	1.5	11.4	4.1	10.7
Sat., October 2.....	3:34	9:28	16:14	22:31
	5.2	10.8	4.5	10.5
Sun., October 3.....	4:48	10:53	17:22	23:51
	6.4	10.6	4.4	10.9
Mon., October 4.....	5:58	12:10	18:24	24:50
	4.9	11.1	3.9	9.9
Tues., October 5.....	0:51	6:55	13:09	19:15
	1.7	4.0	11.9	3.0
Wed., October 6.....	1:37	7:43	13:55	20:00
	12.8	2.7	12.9	2.0
Thurs., October 7.....	2:16	8:26	14:37	20:41
	14.0	1.5	14.0	1.0

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Cristobal post-office.

Every Thursday to New Orleans, for all States. Due at New Orleans on the following Tuesday.

Every Saturday to New York, for all States. Due at New York the following Friday, with the exception of the *Advance*, which is due there on Saturday.

Every Monday to New York, for all States except Louisiana, Arkansas, and Texas. Due at New York the following Monday.

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE.—The sailings on Monday, September 20 and October 18, will not load mail in New York until Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday following. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the two sailings mentioned above.

## Rainfall from August 1 to 28, 1915, Inclusive.

STATIONS.	Maximum one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>
Balboa.....	3.71	20	11.04
Balboa Heights.....	3.13	20	11.97
Miraflores.....	2.20	20	8.50
Colon.....	2.02	20	9.50
<i>Central Section—</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>
*Culebra.....	1.90	28	9.52
*Gamacino.....	1.60	21	8.26
Empire.....	1.36	18	8.58
Gamboa.....	.83	24	4.23
*Juan Mina.....	2.70	21	8.49
Alajuela.....	3.84	21	9.61
*Vigia.....	3.37	21	11.77
Prijoles.....	2.44	21	7.51
*Trinidad.....	2.30	19	10.97
*Monte Rio.....	2.62	18	11.87
<i>Atlantic Section—</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>
Gatun.....	2.10	19	10.34
*Brazos Brook.....	2.69	18	11.34
*Bocas del Toro.....	2.69	18	11.34

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, August 28, 1915:

DAY AND DATE.	STATIONS.				
	Vigia.	Alajuela.	Gamboa.	Gatun Lake.	Miraflores Lake.
Sun., Aug. 22.....	127.50	94.12	86.02	86.00	54.28
Mon., Aug. 23.....	126.45	92.87	85.99	85.91	54.20
Tues., Aug. 24.....	127.85	92.95	86.05	86.01	54.33
Wed., Aug. 25.....	127.80	92.77	86.18	86.06	54.20
Thurs., Aug. 26.....	126.10	93.90	86.04	86.03	54.22
Fri., Aug. 27.....	127.40	93.68	86.07	86.11	54.25
Sat., Aug. 28.....	128.05	93.95	86.17	86.10	54.20
Heights of low water to nearest foot.....	125.0	92.0			

## Misdirected Letters.

BALBOA HEIGHTS C. Z., August 30, 1915.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon request of the addressees:

*Baquie, Mrs. Sallie	Gregg, Eugene
Barneby, Walter	Hensley, Sanford (C.A.C.)
Barnes, Louis Lee (2)	Hollis, Gene
†Baterbaugh, F.	Hollist, S. W.
Casson, H.	Howe, Herbert Harlow
Castro, Miss M.	Hulsbusch, Mr. & Mrs. Peter
O'Clins, C. P.	†Hamatus, R. L.
Ferguson, J. L.	Lockey, Mrs. J.
Ferrer, Mrs. John	Parton, Harrison
Forde, Christopher T.	†Ryan, Jas.
Friedman, Miss L. A.	Vanvander, Fred
Gallagher, P.	†Whelan, Wm.
Greely, Mrs. H. L.	

\*Special delivery. †Paper.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective August 30:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Tobacco, Velvet, tin.....	\$0.10	\$0.12
Perfumes, Hudnot, box.....	.45	.66
Shoes, men's, pr.....	5.25	5.65
Beds, iron, double, ea.....	3.85	3.35
Scissors, pr.....	.41	.45
Sticks, mop, ea.....	.19	.16

## Additions to Stock.

Tooth powder, carbolic, box.....	.18
Ribbon, taffeta, No. 60, yd.....	.13
Ribbon, taffeta, No. 80, yd.....	.14
Springs for baby cribs, ea.....	1.40
Forks, table, Grecian, ea.....	.41

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.			
	Sails.		Arrives.
Carrillo.....	U. F. C.	Aug. 25.....	Sept. 1
Colon.....	P. R. R.	Aug. 26.....	Sept. 1
Tenadores.....	U. F. C.	Aug. 28.....	Sept. 5
Santa Marta.....	U. F. C.	Sept. 1.....	Sept. 8
Advance.....	P. R. R.	Sept. 2.....	Sept. 9
Metapan.....	U. F. C.	Sept. 4.....	Sept. 13
Almirante.....	U. F. C.	Sept. 8.....	Sept. 15
Panama.....	P. R. R.	Sept. 9.....	Sept. 15
Pastores.....	U. F. C.	Sept. 11.....	Sept. 19

(Continued on page 16.)

(Continued on page 16.)

(Week ending at 6 p. m., August 29, 1915.)

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

\*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC.

\*Other than vessels which passed through the Canal.

## PORT OF CRISTOBAL.

\*EXPECTED DEPARTURES

\*Other than vessels which passed through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

DEPARTURES.

\*EXPECTED DEPARTURES.

\*Other than vessels passing through the Canal.

(Continued from page 15.)					Santa Marta.....	U. F. C. Sept.	16.....	Sept.	23	Parismina.....	U. F. C. Sept.	11.....	Sept.	16
Zacapa.....	U. F. C. Sept.	15.....	Sept.	22	Advance.....	P. R. R. Sept.	18.....	Sept.	25	Atenas.....	U. F. C. Sept.	11.....	Sept.	22
Allianca.....	P. R. R. Sept.	16.....	Sept.	22	Metapan.....	U. F. C. Sept.	20.....	Sept.	28	Cartago.....	U. F. C. Sept.	18.....	Sept.	29
Calameres.....	U. F. C. Sept.	18.....	Sept.	26	Almirante.....	U. F. C. Sept.	23.....	Sept.	30	Turrialba.....	U. F. C. Sept.	22.....	Sept.	29
Carrillo.....	U. F. C. Sept.	22.....	Sept.	29	Panama.....	P. R. R. Sept.	25.....	Oct.	1					
Colon.....	P. R. R. Sept.	23.....	Sept.	29	Pastores.....	U. F. C. Sept.	27.....	Oct.	4					
					Zacapa.....	U. F. C. Sept.	30.....	Oct.	7					
CRISTOBAL-COLON TO NEW ORLEANS.														
					NEW ORLEANS TO CRISTOBAL-COLON.									
Zacapa.....	U. F. C. Sept.	2.....	Sept.	9	Atenas.....	U. F. C. Aug.	28.....	Sept.	1	Parismina.....	U. F. C. Sept.	2.....	Sept.	7
Allianca.....	P. R. R. Sept.	4.....	Sept.	10	Turrialba.....	U. F. C. Aug.	25.....	Sept.	2	Atenas.....	U. F. C. Sept.	2.....	Sept.	9
Calameres.....	U. F. C. Sept.	6.....	Sept.	13	Cartago.....	U. F. C. Aug.	28.....	Sept.	2	Cartago.....	U. F. C. Sept.	9.....	Sept.	14
Carrillo.....	U. F. C. Sept.	11.....	Sept.	17	Turrialba.....	U. F. C. Sept.	28.....	Sept.	2	Turrialba.....	U. F. C. Sept.	9.....	Sept.	16
Colon.....	P. R. R. Sept.	11.....	Sept.	17	Heredia.....	U. F. C. Sept.	4.....	Sept.	9	Heredia.....	U. F. C. Sept.	16.....	Sept.	23
Tenadores.....	U. F. C. Sept.	13.....	Sept.	20	Abangarez.....	U. F. C. Sept.	8.....	Sept.	15	Abangarez.....	U. F. C. Sept.	16.....	Sept.	23
										Parismina.....				
										Atenas.....				
										Cartago.....				
										Turrialba.....				
										Heredia.....				
										Abangarez.....				
										Parismina.....				
										Atenas.....				





# CANAL RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, SEPTEMBER 8, 1915. No. 3.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published weekly. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Sent between July 1 and October 1, 50 cents; between October 1 and January 1, 25 cents. For foreign subscriptions the year is divided into thirds, and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,

Isthmus of Panama.

## NOTES OF PROGRESS.

### Inland Areas Benefiting by Canal.

From various observations it appears that a large quantity of goods shipped through the Canal in the United States coastwise trade is originating in inland cities. This means in such cases that transportation through the Canal, including transportation from the point of origin to the seaboard, costs less than the direct haul over land. The differential advantage of the canal route enables the steamship lines to absorb in their rates all or part of the railroad charges to and from the seaboard.

While the Canal is essentially a marine adjunct, its participation in the transportation of inland areas makes it of less obvious aid to nearly all parts of the country.

The "Colon" Has Not Been Transferred to Panama Railroad Company.

The statement in THE CANAL RECORD of June 23, 1915, that the steamship *Colon* had been transferred from The Panama Canal to the Panama Railroad Company in payment for wharf work at Balboa, was in error. The transfer was approved by the authorities of

the organizations, but before it was consummated, the validity of the exchange was referred to the Comptroller of the Treasury, who held that such a transfer was not in accord with the provisions of the Act of August 1, 1914, section 8 of which provides that equipment purchased for the Canal may be sold when no longer needed, while section 3 provides that money obtained from such sales shall be covered into the Treasury as miscellaneous receipts. The Comptroller concluded that "since the proceeds of the sale may not lawfully be used for the purchase of the dock, \* \* the vessel itself may not be given as the purchase price of the dock."

### Progress on Ancon-Balboa-Diablo Swamp Reclamation.

Filling for the reclamation of the swamp lying between Diablo and Ancon Hills, and enclosed roughly between the old and the new main lines of the Panama railroad between Diablo and Panama, has been practically completed for the part south of the Curundu River's newly made channel; that is, over approximately the southern half of the swamp area. This is the portion adjoining the toes of Ancon Hill and the part of the railroad between the Balboa Heights station and the culvert through which the Curundu passes on its way to the Canal. This area has been raised from elevation about 7 feet above sea-level to approximately 20 feet, which is close to the elevation of the adjacent railroad. The original plan was to raise it to elevation 15 feet, but on account of the availability of plenty of spoil and the possibility of securing better drainage, a higher surface elevation was decided on later.

The portion to the northward of the palisaded straight channel which was made for the Curundu is now being filled. Spoil is being pumped in from pipeline suction dredge No. 85, working in the inner harbor at Balboa, near pier No. 18.

### Supply Department Has Charge of Fuel Oil Handling Plants.

Effective September 1, the management of the fuel oil handling plants of The Panama Canal has been transferred from the Mechanical Division to the Supply Department. Ships will continue to place their orders through the office of the Captain of the Port.

## CANAL TRAFFIC IN JULY.

Exceeds All Previous Months in Number of Vessels, Cargo, Net Tonnage, and Tolls.

The number of oceangoing vessels passing through the Canal during the month of July, 1915, was about 65 per cent greater than the average for the preceding months (103) and exceeded by 27 the highest number for any month preceding July, which was 143, in June.

The cargo carried through the Canal during the month amounted to 705,469 tons, exceeding the shipments during any previous month. The highest quantity handled during any preceding month was 635,057 tons, in March.

Vessels moving from the Atlantic to the Pacific numbered 93, and carried 316,773 tons of cargo. Those from the Pacific to the Atlantic numbered 77, and carried 388,696 tons of cargo.

A comparison of the traffic during July with that in the preceding months is afforded by this tabulation of the movements by months, from Atlantic to Pacific, or westbound, and from Pacific to Atlantic, or eastbound, since the opening of the Canal to commercial traffic on August 15, 1914:

Month	Westbound.		Eastbound.		Total.	
	Ves-	Cargo	Ves-	Cargo	Ves-	Cargo
Aug. ....	11	62,178	13	49,106	24	111,284
Sept. ....	30	180,276	27	141,762	57	322,038
Oct. ....	40	253,288	44	168,060	84	421,357
Nov. ....	38	242,291	54	206,510	92	448,801
Dec. ....	57	271,219	43	179,235	100	450,454
Jan. ....	54	240,925	44	208,082	98	449,007
Feb. ....	53	276,078	39	150,987	92	427,065
March ....	80	417,610	57	217,447	137	635,057
April ....	60	285,457	59	237,384	119	522,841
May ....	75	332,174	67	246,534	142	578,708
June ....	60	282,561	83	320,410	143	603,180
July ....	93	316,773	77	388,696	170	705,469
Total.....	651	3,160,830	607	2,514,431	1,258	5,675,261

The aggregate movement of 5,675,261 tons in the period of 11½ months is at the rate of 493,935 tons per month. This is equivalent to 5,927,220 tons per year, or 16,239 tons per day.

With respect to nationality, the British vessels outnumbered those of any other nation during the month; they amounted to 76, exceeding by 21 the 55 American ships. The ships of other nations were: Swedish, eight; Japanese and Norwegian, seven each; Danish, five; Chilean, four; Peruvian, three; Hon-

SUMMARY OF TRAFFIC THROUGH THE PANAMA CANAL SINCE ITS OPENING TO COMMERCIAL TRAFFIC.

Month.	Atlantic to Pacific			Pacific to Atlantic.			Total.		
	Ves-	Canal tons		Ves-	Canal tons		Ves-	Canal tons.	
		Gross	Net		Gross	Net		Gross	Net
August, 1914.....	13	58,233	41,931	11	62,049	44,047	24	120,282	85,978
September.....	27	151,878	109,684	30	151,568	111,375	57	303,446	221,059
October.....	44	240,925	174,472	40	220,179	155,744	84	461,104	328,216
November.....	54	247,479	172,825	38	205,071	149,906	92	452,550	322,731
December.....	43	204,776	145,676	57	280,896	198,618	100	485,672	344,294
January, 1915.....	44	239,486	169,228	54	251,085	177,984	98	490,571	347,212
February.....	38	209,822	147,339	53	245,522	175,523	92	455,344	322,862
March.....	57	269,901	187,568	80	405,380	288,416	137	675,281	475,984
April.....	59	279,139	199,213	60	290,738	205,326	119	569,877	404,539
May.....	67	343,701	246,098	75	360,104	252,252	142	703,805	492,350
June.....	83	412,525	296,694	60	320,619	201,116	143	698,835	497,810
July.....	93	465,726	297,329	77	356,145	250,941	170	821,871	547,370
Totals.....	623	3,123,591	2,182,057	635	3,115,067	2,208,348	1,258	6,238,658	4,390,405

5,675,261

durant, two; Argentinian, Dutch, and French, one each. A classification of the vessels using the Canal by nationalities, by months, is given in an appended table.

As distributed over the principal routes, the traffic was as follows:

ATLANTIC TO PACIFIC.			
	Vessels	Net tonnage	Tons of cargo.
Coastwise.....	20	66,839	74,170
Europe to west coast of North America.....	5	19,089	9,585
Europe to South America.....	4	12,921	11,155
United States to South America.....	11	33,893	32,508
United States to Far East.....	24	110,535	174,574
Atlantic terminals to South America.....	10	13,864	9,816
Miscellaneous.....	1	3,067	4,965
Ballast.....	18	37,120	
Total.....	93	297,328	316,773
PACIFIC TO ATLANTIC.			
Coastwise.....	11	52,372	73,321
West coast of North America to Europe.....	8	28,370	42,049
South America to Europe.....	14	51,660	108,010
South America to United States.....	25	74,691	110,099
Far East to United States.....	5	17,745	29,381
South America to Atlantic terminals.....	8	13,011	8,366
Miscellaneous.....	5	12,161	17,470
Ballast.....	1	22	
Total.....	77	250,011	388,606

In the foregoing tabulation, "South America" is used to designate both South and Central America, and New Zealand and Australia are included with "Far East". The traffic to and from the Atlantic terminals of the Canal represents cargo transferred at Cristobal to or from carriers connecting with the United States and Europe.

#### TOLLS.

The tolls collected on vessels passing through the Canal during the month of July amounted to \$573,365.67; including the regular tolls on vessels of the United States Government which were not collected, the gross earnings in the month were \$606,578.77. The gross earnings and net collections by months since the opening of the Canal to commercial traffic have been as follows:

	Gross earnings.	Net collections.
August 15-31, 1914..	\$8,401.80	\$88,401.80
September.....	266,513.28	265,600.80
October.....	375,787.44	366,786.48
November.....	381,533.28	369,161.28
December.....	410,043.60	407,914.80
January, 1915.....	419,037.12	398,601.12
February.....	383,904.96	383,904.96
March.....	560,784.96	551,092.56
April.....	442,815.49	442,815.49
May.....	547,054.60	522,676.95
June.....	541,181.55	539,229.05
July.....	606,578.77	573,365.67
Total.....	\$5,023,36.85	\$4,909,150.96

#### PRINCIPAL COMMODITIES.

The distribution of the 134 commodities listed during the month on the cargo declarations made out by the masters of vessels is shown in the accompanying table. Twenty-nine of the 134 commodities were shipped through the Canal in both directions.

The principal commodities passing through the Canal during the month were cement, coal, coke, copper, cotton, general cargo, lumber, manufactured goods of iron and steel, machinery, railroad material, nitrates, crude oil, refined petroleum, sugar, tin, wire fencing, wool, and zinc concentrates. Of these, nitrates of soda were the largest by a considerable degree.

Cement, shipped entirely from the Atlantic to the Pacific, amounted to 5,220 tons, and was all consigned to South America. Three thousand one hundred and fifty-five tons were from Denmark, and the remainder from the United States.

#### Commodities Shipped through the Panama Canal in July, 1915.

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total.	Remarks.
Alfalfa meal.....		100	100	San Francisco to New York.
Antimony ore.....		350	350	Shanghai to New York.
Animal food.....	38		38	New York to San Francisco.
Asphalt.....		50	50	San Francisco to New York.
Automobiles.....	899		899	New York to San Francisco and Vladivostok.
Baking powder.....	174		174	New York to San Francisco and Portland, Oreg.
Balsam.....	413		413	Christiania to Valparaiso; Central America to Colon.
Bark.....	155	241	296	New York to west coast; south Pacific ports to New York, New Orleans, and Cristobal.
Barley.....		8,218	8,218	San Francisco to New York and Christiania.
Bathtubs.....	197		197	New York to north Pacific ports.
Beans.....		240	240	San Francisco to New York.
Beans, vanilla.....		62	62	New York to San Francisco.
Beer.....	58		58	New York to San Francisco.
Bones.....		52	52	San Francisco to New York.
Brass.....		67	67	San Francisco to New York.
Bricks.....	102		102	Copenhagen to Callao.
Butter.....		19	19	San Francisco to New York.
Butter.....	5		5	Gutenberg to Antofagasta.
Cacao.....	20	2,229	2,229	Ecuador and Colombia to Colon.
Candy.....	3		3	New York to Manila.
Canned goods.....	15	5,313	5,328	See comment.
Fruit.....	21	321	342	New York and San Francisco.
Meat.....	8		8	London to Victoria; Honolulu and north Pacific ports to New York and Liverpool.
Vegetables.....		217	217	San Francisco to New York.
Cement.....	5,220		5,220	See comment.
Cereals, miscellaneous.....	200		200	London to San Francisco.
Chalk.....	140		140	Gutenberg to Valparaiso and Talcahuano.
Chemicals.....	251		1,638	New York, Europe, west coast, Orient.
Chrome.....		6,000	6,000	Pagoumone to Dunkirk.
Coal.....	34,235		34,235	See comment.
Coca leaves.....		28	28	South Pacific ports to Cristobal and New York.
Coffee.....	35	2,535	2,573	London and New York to north Pacific ports; south Pacific ports to Colon and Europe.
Coffins.....	20		20	New York to north Pacific ports.
Coke.....	19,734		19,734	See comment.
Copper.....	772	5,315	6,087	See comment.
Copper ore.....		2,993	2,993	South Pacific ports to Colon and New York.
Copra.....		500	500	Manila to New York.
Corn.....	400		400	Cristobal to Salina Cruz.
Cotton.....	5,683	4,202	9,885	See comment.
Dyes.....		290	290	Corinto to New York.
Earthenware.....	135		135	Europe to north Pacific ports.
Enamelware.....	272		272	New York to San Francisco and Los Angeles.
Explosives.....	33		33	New York to San Francisco.
Flint.....		190	190	San Francisco to New York.
Flint stones.....	305		305	Copenhagen to Valparaiso.
Flour.....	525	1,809	2,334	New York, west coast, Europe.
Fruit, dried.....		4,739	4,739	San Francisco to New York and Europe.
Furniture.....	14		14	New York to San Francisco.
Gasoline.....	816		816	New York to New Zealand, Chile, and Peru.
General cargo.....	84,337	20,555	104,892	See comment.
Glassware.....	105		105	New York to San Francisco and Los Angeles.
Grease.....	239		239	Philadelphia and New York to San Francisco and Yokohama.
Hair, cattle.....		5	5	San Francisco to New York.
Hair, human.....		25	25	Shanghai to New York.
Hardware.....		846	846	New York and Europe to west coast.
Hemp.....		2,500	2,500	Manila to New York.
Honey.....		161	161	West coast to Cristobal, New Orleans, and Europe.
Hops.....		53	53	San Francisco to New York.
Horns and hoofs.....		23	23	San Francisco to New York.
Indigo.....	72		72	Ecuador and Yokohama to Colon and New York.
Iron.....	3,934		3,934	New York and Liverpool to San Francisco and Vancouver.
Iron ore.....		14,500	14,500	Cruz Grande to Philadelphia.
Ivory nuts.....		1,650	1,650	1,010 from Sidney to New York; balance, Ecuador and Colombia to Colon.
Lard.....	62		62	New York and New Orleans to west coast.
Lead.....		3,011	3,011	San Francisco and Valparaiso to New York.
Leather.....		10	10	South Pacific ports to Colon and Havre.
Linoleum.....	61		61	New York to north Pacific ports.
Liquors.....	681	13	694	Europe, New York, and San Francisco.
Lumber.....	50	38,671	38,721	See comment.
Manganese.....		1,049	1,049	San Francisco and Shanghai to New York.
Manufactured goods: Iron and steel.....	24,392		24,682	See comment.
Machinery.....	4,222	75	4,297	See comment.
Railroad material.....	76		13,445	See comment.
Textiles.....	15		91	New York to San Francisco and Los Angeles; Yokohama to New York.
Miscellaneous.....	11,179	100	11,279	See comment.
Marble.....	51		51	New York to San Francisco and Los Angeles.
Milk.....	10		10	New York to San Francisco.
Nails, wire.....	459		459	New York and Gutenberg to west coast and Shanghai.
Naphtha.....		18	18	San Francisco to New York.
Nitrates.....	186,637		186,637	See comment.
Nuts.....	13	25	38	New York to San Francisco; San Francisco to New York.
Oats.....		3,500	3,500	Portland and Valparaiso to England.
Oil, crude.....	2,604	8,500	11,104	See comment.
Oil, lubricating.....	1,809		1,809	New York and Philadelphia to north Pacific ports and Orient.
Oils, vegetable.....	474	1,000	1,474	New York to west coast and Melbourne; Shanghai and Manila to New York.
Paint.....	23		23	New York to San Francisco.
Panama hats.....		27	27	Ecuador and Colombia to Colon.
Paper.....	2,726		2,726	New York, Gutenberg, and Genoa to west coast and Orient.
Paper ware.....	125		125	New York to San Francisco.
Petroleum, refined.....	74,210		74,210	See comment.
Pipes, iron.....	1,025		1,025	New York to north Pacific ports.
Pulp.....	67		67	Gutenberg to Chile.
Quilky.....		14	14	Talcahuano to Liverpool.
Radiators.....	50		50	New York to north Pacific ports.
Rags.....	150		216	London to San Francisco; San Francisco to New York.



Commodity	Atlantic to Pacific.	Pacific to Atlantic.	Total.	Remarks.
Resin.....	12		12	New Orleans to south Pacific ports.
Rice.....		1,541	1,541	Seattle and San Francisco to New York.
Roofing.....	17		17	New York to San Francisco.
Rope.....	81		81	New York to San Francisco.
Rubber.....	23	618	641	New York to north Pacific ports; south Pacific ports to Colon, New York, and Barcelona.
Rubber, old.....		89	89	Seattle and San Francisco to New York.
Salt.....	907		907	Liverpool and New York to north Pacific ports.
Scrap metal.....		183	183	San Francisco and Chile to New York and Cristobal.
Seed.....	43	51	94	New York to San Francisco and Los Angeles; San Francisco and Chile to Cristobal and New York.
Silver.....		271	271	South Pacific ports to New York.
Silver sulphides.....		17	17	Chile and Peru to Colon.
Skins and hides.....		1,657	1,657	West coast and Orient to New York and Europe.
Smallwares.....	113		113	New York to north Pacific ports.
Soap.....	490		490	New York to San Francisco and Los Angeles.
Soda.....	223		223	New York to San Francisco and Portland.
Starch.....	60		60	New York to San Francisco.
Stove boards.....	148		148	New York to north Pacific ports.
Sugar.....	15	32,707	32,722	See comment.
Syrup.....	14		14	New York to Los Angeles.
Tallow.....	141		141	Shanghai and San Francisco to New York.
Tea.....	20		20	China to New York.
Textiles, miscellaneous.....	5	10	15	New York to San Francisco; San Francisco to New York.
Tin.....	2,542	1,922	4,464	See comment.
Tin plates.....	1,465		1,465	New York to north Pacific ports and Orient.
Tobacco.....	187		187	New York to north Pacific ports and Orient.
Toys.....	6		6	New York to San Francisco.
Turpentine.....	88		88	New York to San Francisco and Melbourne.
Washboards.....	14		14	New York to San Francisco.
Wax.....	402	13	415	New York to Japan and China; Chile to New York and Gotenberg.
Wheat.....		2,000	2,000	Portland to London.
Wines.....	49	1,076	1,125	New York, Barcelona, and Liverpool to west coast.
Wire.....	57		57	San Francisco to New York.
Wire fencing.....	9,740		9,740	New York to San Francisco.
Wood, hard.....		120	120	See comment.
Woodware.....	248		248	Central American ports to New York.
Wool.....		3,765	3,765	New York to north Pacific ports.
Zinc.....	171	83	254	See comment.
Zinc concentrates.....		12,635	12,635	New York to San Francisco and Vladivostok; west coast to Colon and New York.
Total.....	316,773	388,696	705,469	See comment.

All of the 34,235 tons of coal except the 4,965 tons carried by the *Karma* from Jamaica to unknown destination in the Pacific, were shipped from the Atlantic seaboard of the United States. Ten thousand five hundred tons went to Manila, 3,980 tons to South America, and the remainder to the west coast of the United States.

Coke, amounting in all to 19,734 tons, was traveling from much the same origins; 5,000 tons were shipped from Barry to Santa Rosalia, and 14,734 tons from Atlantic ports of the United States to the west coast of South America.

Copper was shipped to New York and Europe from the west coast of the two Americas and from Australia and Japan. The latter shipped 500 tons and Australia 490 tons, to New York; Chile shipped 999 tons, of which 253 tons went to Europe and 746 tons went to New York; Tacoma shipped 1,000 tons to New York and 300 tons to Liverpool, and San Francisco shipped 1,876 tons to New York.

Raw cotton amounted to 4,202 tons, about two-thirds of which originated in South America, and the other third of which came from San Francisco and the Far East. In distribution it went about two-thirds to Europe and one-third to the United States.

The miscellaneous cargo described as "general cargo" amounted in all to 104,892 tons. Of this, 84,337 tons were in transit from Atlantic to Pacific and 20,555 tons from Pacific to Atlantic.

Lumber, amounting to 38,671 tons, was moving entirely from Pacific to Atlantic ports. Ten tons originated in Manila, and 386 tons in Central America; all the remainder, 38,275 tons, came from the west coast of the United States and Canada. Of this, 23,074 tons were shipped to Great Britain, 25 tons to Christiania, 1,970 tons to Halifax, and the remainder to New York.

Of the manufactured goods of iron and steel, of machinery, and of railroad material, amounting respectively to 24,682 tons, 4,297 tons, and 13,435 tons, all shipments were from the Atlantic seaboard of the United States. Approximately 35 per cent went to Vladivostok, 10 per cent to Japan, 30 per cent to Australia and New Zealand, 15 per cent to the west coast of the United States and Canada, and 10 per cent to South America.

Nitrates, which were the largest commodity passing through the Canal in the month, amounted to 186,637 tons, all from the west coast of South America, with the exception of 50 tons shipped from San Francisco to New York.

All but 870 tons of the 74,210 tons of refined petroleum shipped through the Canal during the month were on the way to Australia, New Zealand, the Philippines, Japan, and China. The 870 tons not included with these shipments were on the way to Peru and Chile from New York. The shipments originated at Port Arthur, New Orleans, Philadelphia, and New York.

Sugar amounted to 32,707 tons, of which 1,377 tons were from the west coast of South America, 134 tons for Europe and 1,243 tons for New York; and 31,330 tons were shipped from Honolulu for New York and Philadelphia.

Of 2,542 tons of tin, shipped from New York, 800 tons went to Singapore, 40 to Chile, and the remainder to San Francisco and Seattle. Of 1,922 tons from the Pacific, 878 tons were from Chile for Europe, 544 tons were from San Francisco for New York, and 500 tons were from Yokohama for New York.

Wire fencing amounted to 9,740 tons, all from New York. Thirteen tons went to San Francisco and all the remainder, 9,727 tons, to Vladivostok.

Wool amounted to 3,765 tons, in 12 shipments. Ninety-seven tons were from San Francisco to New York, 3,000 tons from Yokohama to New York, 235 tons from Shanghai to New York, 15 tons from Melbourne for Boston, and the remainder was from the west coast of South America, divided about evenly between the United States and Europe.

Zinc concentrates amounted to 12,635 tons. Like the iron ore, these shipments were all from one port. Five hundred and twenty-four tons were from Port Pirie for New York, and 12,111 tons from Port Pirie for Mobile.

NUMBER OF VESSELS OF VARIOUS NATIONALITIES PASSING THROUGH THE PANAMA CANAL.

Atlantic to Pacific.																
Month	American	British	Chilean	Danish	Dutch	French	Honduran	Italian	Japanese	Nicaraguan	Norwegian	Panamanian	Peruvian	Russian	Swedish	Total
August	12												1			13
September	13	13			1											27
October	15	27		1							1					54
November	25	26		1						1			1			43
December	20	18	2		1				1							44
January	26	10	2	2	1						1			1	1	44
February	18	15	2	2											1	39
March	25	24	3	1			1								1	57
April	25	25	2		1		1	1			2				2	59
May	29	25	2	3	1									1	2	67
June	25	42	3		2				3		4					83
July	33	41	2	3	1				6		2		2		3	93
Total...	266	266	18	14	6	2	2	1	10	1	18		4	5	10	673
Pacific to Atlantic.																
August	9			2												11
September	10	16									4					30
October	22	17													1	40
November	19	16		1						1						38
December	23	31	3												1	57
January	20	23	2		1						4	1				54
February	21	25	3	2							2					53
March	33	29	4	4		1					5	1	1		3	80
April	22	27	2					1			4	1	1		2	60
May	31	31	2	2				1			1			1	3	75
June	28	24	3		1		1		1				1		0	60
July	22	35	2	2		1	2			5			1			*77
Total...	260	274	21	15	2	2	3	1	3	1	30	2	3	1	16	*635
Grand total.	526	540	39	29	8	4	5	2	13	2	48	2	7	6	26	*1258

\* Including one Argentinian vessel.

## SERVICE IN UNITED STATES.

### Arrangements for Transfer from Excepted Positions in the Canal Service.

Administrative arrangements have been completed by the Washington Office and the Civil Service Commission for the recommendation for transfer from the Canal Service to the Classified Service of employees of The Panama Canal, under conditions set down in the Executive Order of January 19, 1915, as follows:

A citizen of the United States in the service of The Panama Canal on or before January 1, 1915, in an excepted position other than that of clerk paying not more than \$75 in gold per month may be transferred without examination to a position in the competitive classified service, provided:

(a) This section shall not apply to a person appointed to a competitive position in accordance with the civil-service rules, his transfer to be governed by the general provisions of the rules.

(b) This section shall not apply to a person appointed without examination to perform the duties of clerk of any grade, bookkeeper, stenographer, typewriter, surgeon, physician, trained nurse, or draftsman.

(c) He must have rendered at least two years' service in a position above the grade of mere unskilled laborer in the service of The Panama Canal, or of the Panama Railroad by transfer from the Canal.

(d) He may be transferred to a position of no higher grade requiring similar qualifications, or to a position of a lower grade for which he is qualified.

(e) He must be especially recommended by the Governor of The Panama Canal by reason of efficient service and satisfactory conduct.

(f) If separated from the service the requisition for transfer must be made within three years from the date of separation, and if he has been separated more than one year evidence of continuing good character and efficiency may be required.

In a circular issued by the Civil Service Commission, the following explanation is made:

This order is intended to provide for the transfer to other branches of the service of employees and exempted of The Panama Canal who have rendered two years' satisfactory service in excepted positions. Such transfer, except as indicated in the order, is subject to the civil-service rules. The order does not provide a position for any one. It is optional with any department to fill a vacancy by the promotion of a person already employed in such department, by transfer, or by original appointment from the eligible register resulting from civil-service examinations.

No application for transfer can be considered unless the applicant is especially recommended by the Governor of The Panama Canal by reason of efficient service and satisfactory conduct while employed in the Panama Canal service. It will not be necessary for applicants to write to the Governor for recommendation, as the Civil Service Commission will ascertain from him whether he will recommend for transfer an exempted employee who applies direct to the Civil Service Commission, and the Governor will make his recommendation direct to the Civil Service Commission when employees or exempted employees on the list wish to apply for transfer. Persons whose applications are properly executed and who appear to be eligible for transfer will be so notified, and their names will be recorded in the office of the Civil Service Commission. Thereafter, the Civil Service Commission will bring their applications to the attention of departments or offices of the Government

needing additional help from time to time. A person selected for transfer by one of such departments or offices will be notified accordingly.

An applicant who has received notice that he is eligible for transfer may be able to expedite his transfer by applying to any Government department or office which he may have reason to believe is in need of a person of his qualifications. If such department or office decides to transfer him it will make formal request upon the Civil Service Commission for a certificate authorizing the transfer.

Inquiries regarding eligibility for transfer under the Executive Order of January 19, 1915, should be addressed to the United States Civil Service Commission, Washington, D. C. The Commission has not information in regard to the existence of a vacancy in any part of the service until it is called upon to issue a certificate for filling it, and can not advise applicants as to the likelihood of their securing appointment.

Persons who come within the provisions of the Executive Order and who desire transfer should file an application on Form 2125, which may be obtained from the United States Civil Service Commission, Washington, D. C.; the Governor of The Panama Canal, Balboa Heights, Canal Zone; the Secretary of the United States Civil Service Board, Post-office, Boston, Mass.; Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Customhouse, New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

Exempted of The Panama Canal residing in the United States should send their applications to the United States Civil Service Commission, Washington, D. C. Employees or exempted on the Isthmus should send their applications to "The Governor of The Panama Canal, Balboa Heights, Canal Zone."

Applicants for transfer should advise the United States Civil Service Commission, Washington, D. C., of any change in their post-office addresses.

The United States Civil Service Commission has furnished the Executive Office of The Panama Canal 500 copies of Form 2125, referred to above, and 1,000 copies of Form 2124, circular of information for employees and exempted of The Panama Canal.

### Reduced Rate to Costa Rica.

Employees of The Panama Canal and the Panama Railroad and officers and enlisted men of the United States Army and Navy stationed on the Isthmus, and their families, will be granted a round-trip rate of \$20 between Colon and Port Limon, Costa Rica, on vessels of the United Fruit Company.

Tickets sold at this rate will be good from Colon to Limon only on American plan steamers sailing from Colon on Saturdays, meals included, and Limon to Colon only on *a la carte* steamers sailing from Limon on Sundays, meals extra. These tickets will be limited to 15 days from date of sale, and will be issued only upon presentation of an official request.

This rate is a reduction of \$4 from the usual round-trip fare.

## EXECUTIVE ORDER.

### Leave for Veterans of the Civil War, to Visit Encampment.

It is hereby ordered that all veterans of the Civil War in the service of the Government of the United States who desire to attend the Grand Army Encampment to be held in Washington, D. C., September 27 to October 2, 1915, shall be granted leave of absence with pay, in addition to the annual leave provided for by statute, from September 26 to October 3, inclusive, that they may have the opportunity to attend the Encampment, and that they be granted as many more days additional leave with pay in each case as are necessary for the journey to Washington and return to their posts of duty.

WOODROW WILSON.

THE WHITE HOUSE, August 17, 1915.

### Handling Explosives for Delivery at Panama.

The notice to steamship lines, published in THE CANAL RECORD of July 21, 1915, setting forth charges for wharfage, storage, lighterage, crange, stevedoring, and transferring cargo, and shifting and towing vessels, effective July 18, included parts of Panama Railroad Company's circular No. 500-A on the same general subject. Paragraph 28 of the notice to steamship lines, stating "Cargo for local delivery at Panama will be charged \$1.25 per bill-of-lading ton, including crange at Balboa," in which reference is to general cargo only, is now amended to include a higher rate on explosives, by supplement No. 1 to circular No. 500-A. This supplement, dated August 7, states:

Effective at once, Paragraph No. 13 under item No. 6, Stevedoring and transferring cargo, is amended to read:

"Explosives for local delivery at Panama will be charged \$2.95 per B-L ton, including crange at Balboa, or \$2.80 per ton on if P. R. cranes are not used."

S. W. HEALD, Acting Superintendent.  
CHESTER HARDING, 2nd Vice President.

### Price of Milk Reduced.

On account of the increased production of milk at the Corozal Hospital farm dairy, it has been possible to reduce the price of milk from 25 cents a quart to 20 cents a quart, effective September 1, 1915.

This milk is from highgrade Jersey cows and is strictly a sanitary product. It exceeds the ordinary standard of excellence in quality and richness of cream. Bottles will be billed at five cents each and are redeemable at that price. The telephones of the Corozal Hospital, over which orders for milk may be placed, are Nos. 576 and 562 Balboa.

### Seamen's Institute Proposed for the Canal.

The Panama Canal has offered the American Seamen's Friend Society the lease of a lot on the waterfront of Cristobal, in the area reserved for the buildings of steamship companies and other shipping interests, at a nominal rental of \$1 per year, for the erection of a building to house a Seamen's Institute.

In the month of July the Canal and its terminal ports were visited by as many as 14,136 sailors, 9,824 having been examined by the quarantine officers at Cristobal and Colon, and 4,312 at Balboa and Panama. These numbers will increase with the development of traffic, and although not all of the vessels moor at the Canal docks, and not all of the crews of those which do are allowed to land, the number of seamen coming ashore is believed to be sufficiently great to warrant the establishment of this accommodation.

### Deceased Employees.

Name	Check No.	Native of	Isthmian Residence.	Employed by	Date of death
Barrero, Santos.....	62376	Spain.....	Gatun.....	Oper. and Main.	Aug. 17, 1915
Corentin, Jacob.....	664	Guadeloupe.....	Panama.....	Term. Constr.	Aug. 19, 1915
Sobers, Albert.....	72146	Trinidad.....	Panama.....	Dry dock store.	Aug. 24, 1915
Yearwood, Roman.....	53047	Barbados.....	Panama.....	Building Div.	Aug. 16, 1915
Bel, William.....	24237	Barbados.....	Panama.....	Dredging Div.	Aug. 20, 1915
Campbell, James.....	61485	Grenada.....	La Boca.....	Supply Dept.	Sept. 1, 1915
Durant, William.....	87345	Trinidad.....	Colon.....	P. R. R.	Sept. 2, 1915

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once.



## OFFICIAL CIRCULARS.

## Assistant to the Marine Superintendent.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., September 1, 1915.

To all concerned—Commander H. J. Cone, U. S. N., is hereby appointed Assistant to the Marine Superintendent, effective this date, and will assist the Marine Superintendent in such manner and exercise such authority as may be deemed necessary by the latter.

CHESTER HARDING,

Acting Governor.

## Rental of Quarters for Silver Employees.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., August 25, 1915.

CIRCULAR No. 628-2 (Amending Circular No. 528): Panama Canal circular No. 628, dated April 1, 1914, is hereby amended by adding at the end of paragraph 7 the following:

If rental for one month in advance is not paid on or before the 15th of the month a penalty of 50 cents will be added to the monthly rental and the rental and penalty collected by payroll deduction.

CHESTER HARDING,

Acting Governor.

## Accounting for Empty Oil Containers.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., August 26, 1915.

CIRCULAR No. 650-9:

Effective at once, departments and divisions will not submit survey papers covering damaged or unserviceable drums. All empty drums, which have not previously been condemned, will be shipped and invoiced to the storekeeper, Balboa, who will make a careful check and record of all drums received, accept invoice as rendered, and inform divisions of the receipt of any which are not in condition to be returned to the contractor.

2. Surveys for damaged and unserviceable drums will be submitted by the storekeeper, Balboa, only. These surveys will be submitted monthly, and when drums are ordered destroyed or scrapped, the storekeeper will attach to the completed original survey request a statement showing the divisions from which the condemned drums were received, in order that the Auditor may make charges to the proper accounts.

CHESTER HARDING,

Acting Governor.

## Acting Chief Quartermaster.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., September 4, 1915.

To all concerned—Effective September 7, 1915, and during the absence of Major W. R. Grove on leave, Captain F. H. Smith will act as Chief Quartermaster.

CHESTER HARDING,

Acting Governor.

## The "Colon" to Sail Friday.

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., September 3, 1915.

CIRCULAR No. 142:

To all concerned—Circulars Nos. 137 and 140 are hereby cancelled. On account of unforeseen reasons the steamship *Colon* will not sail through the Canal as scheduled, and will sail from pier No. 11, Cristobal, for New York on Friday, September 10, instead of Saturday, September 11.

S. W. HEALD,

Acting Superintendent.

## Acting Electrical Engineer.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,

BALBOA HEIGHTS, C. Z., September 1, 1915.

To all concerned—During the absence of Capt. W. H. Rose, U. S. A., effective September 3, Mr. Hartley Rowe, Electrical Superintendent, will perform the duties of the Electrical Engineer.

JAY J. MORROW,  
Assistant to the Engineer of Maintenance.

Approved:

CHESTER HARDING,

Acting Governor.

## Stamp Tax on Steamship Tickets of Employees Sailing from Ports in the United States.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., August 30, 1915.

To all concerned—The following memorandum issued by the Washington Office of The Panama Canal, under

date of August 20, 1915, will hereafter be included with each letter authorizing the reduced rate of transportation to employees of The Panama Canal and their families traveling at their own expense from the United States to the Isthmus:

"For the information of employees in The Panama Canal service, and the members of their families, traveling from the United States at their own expense, it is noted that under a ruling of the Acting Commissioner of Internal Revenue, the various steamship lines will be required to collect a stamp tax on each steamship passage ticket in accordance with the following table:

On tickets costing \$10 or less.....	No tax
Tickets costing over \$10 and including \$30....	\$1.00
Tickets costing over \$30 and including \$60....	3.00
Tickets costing over \$60.....	5.00

"This memorandum is being issued so that prospective passengers will provide themselves with sufficient funds to meet this stamp tax."

C. A. McILVAINE,

Executive Secretary.

## Acting Station Agent at Colon.

THE PANAMA RAILROAD COMPANY,

OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., September 4, 1915.

CIRCULAR No. 143:

To all concerned—Effective August 28, Mr. W. E. Tragsdorf will act as station agent at Colon during the absence of Mr. T. L. Reynolds, on leave.

S. W. HEALD,

Acting Superintendent.

## Telephone of Receiving and Forwarding Agent at Cristobal.

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., September 1, 1915.

CIRCULAR No. 138:

To all concerned—The telephone number of the receiving and forwarding agent at Cristobal has been changed from 21 to 60, and will be known as "Cristobal docks phone."

S. W. HEALD,

Acting Superintendent.

## Automobiles, Motor Trucks, and Motorcycles.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., September 1, 1915.

CIRCULAR No. 102:

Accountable officials will report to this office by not later than September 11, the number of automobiles, motor trucks, and motorcycles in their custody, in order that numbers may be assigned and these items thereafter accounted for by those numbers.

H. A. A. SMITH,

Auditor, The Panama Canal.

Approved:

CHESTER HARDING,

Acting Governor.

## Equipment Report.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., September 1, 1915.

CIRCULAR No. 103:

Effective at once, and commencing with reports for the month of August, heads of departments and divisions will be required to forward to the Auditor at the close of each month, a legible copy of the equipment report required by paragraph 6, circular No. 665.

H. A. A. SMITH,

Auditor, The Panama Canal.

Approved:

CHESTER HARDING,

Acting Governor.

## JOINT LAND COMMISSION.

## Notice of Awards.

In the matter of sundry claims, award No. 87, docket numbers as noted, June 12, 1915.—An award is hereby made against the United States, in favor of the persons hereinafter named, in the sum of \$7,901.42, United States currency.

This award shall be paid to the persons hereinafter named, in the amounts specified, on or before the 12th day of July, 1915, and if payment or tender of payment of any of the items of this award is not made on or before that date, such item shall thereafter bear interest at the rate of six per centum per annum until paid. *Robert Dunaway, docket No. 797*—For all rights, claims, and other interests which the said Robert Dunaway may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$500.

*Samuel A. Williams, docket No. 799*—For all rights, claims, and other interests which the said Samuel A. Williams may possess or may have possessed in and to houses and crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$483.50.

*Edward McFarlane, docket No. 800*—For all rights, claims, and other interests which the said Edward McFarlane may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$500.

*Prince McGarrall, D. N., and Clementina Forbes, docket No. 803*—For all rights, claims, and other interests which the said Prince McGarrall, D. N., and Clementina Forbes may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$1,100.

*Josiah Johnson, docket No. 806*—For all rights, claims, and other interests which the said Josiah Johnson may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$620.

*Dudley Cummings, docket No. 812*—For all rights, claims, and other interests which the said Dudley Cummings may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$800.

*Joseph Chandler, docket No. 813*—For all rights, claims, and other interests which the said Joseph Chandler may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$726.45.

*Simone Lawrence, docket No. 814*—For all rights, claims, and other interests which the said Simone Lawrence may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$340.

*Charles Hobins, docket No. 815*—For all rights, claims, and other interests which the said Charles Hobins may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$591.17.

*Elizabeth Mason, widow of Solomon Mason, docket No. 817*—For all rights, claims, and other interests which the said Solomon Mason may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$591.17.

*Henry Bigwood, docket No. 822*—For all rights, claims, and other interests which the said Henry Bigwood may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$750.

*Charlotte Primus, widow of A. D. Primus, docket No. 832*—For all rights, claims, and other interests which the said Charlotte and A. D. Primus may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$194.

*Estwick King, docket No. 833*—For all rights, claims, and other interests which the said Estwick King may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$531.

*Edward Mattise, docket No. 834*—For all rights, claims, and other interests which the said Edward Mattise may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$385.30.

*George Lewis, docket No. 836*—For all rights, claims, and other interests which the said George Lewis may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements situated on the lands claimed by the Schubert family near Corozal, the sum of \$150.

Total, \$7,901.42, United States currency.  
FEDERICO BOYO, NICHOLAS CORNET, LEVI MONROE KAGY, Commissioners.

Fully convinced that the evidence in reference to the above claims is so conflicting that a thorough inspection of the properties covered by such claims should be made by the Commission as proposed in the resolution moved by the undersigned to be adopted by the Commission this date and which was denied; and that the Commission has not before it sufficient information upon which properly to base an award against the United States for damages caused to the above-named claimants, I dissent from the awards above made.

S. LEWIS, Commissioner.

## COMMISSARY DEPARTMENT.

## Handling Ice.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., September 3, 1915.

To customers of the commissaries and all concerned—  
Owing to the fact that ice wagon men are required by some families to do work which is not customarily performed by ice delivermen in the United States, it has become necessary to issue the following instructions to all ice delivermen employed in ice delivery service of the commissary branch:

"Ice will be placed in pans or other receptacles, set out for the purpose, or into refrigerators, but no time must be taken up in washing ice for families or on account of the fact that the refrigerator is not properly prepared to receive the ice. Ice must at no time be placed on the ground before delivery to families."

These instructions are issued in the interests of a more rapid ice delivery, and the cooperation of all concerned is requested.

WM. R. GROVE,  
Chief Quartermaster.

## Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective September 9 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts.

The following is a list of retail prices of cold storage provisions which will be effective September 9, 1915:

## FRESH MEATS.

	Price.
Mutton—Stewing, per pound.....	9
Shoulder, trimmed, (not less than 5 pounds).....	12
Leg (8 to 10 pounds), per pound.....	19
Short cut, chops, per pound.....	23
Shoulder, chops, per pound.....	17
Lamb—Stewing, per pound.....	12
Shoulder, trimmed, per pound.....	15
Leg (5 to 8 pounds), per pound.....	24
Chops, per pound.....	20
Chops, shoulder, per pound.....	20
Veal—Stewing, per pound.....	12
Shoulder, for roasting (not under 5 lbs.), per pound.....	15
Chops, shoulder, per pound.....	20
Chops, per pound.....	30
Loins, for roasting, per pound.....	30
Cutlets, per pound.....	36
Beef—Suet, special, per pound.....	33
Soup, special, per pound.....	7
native, per pound.....	5
Soup, bones, special, per pound.....	23
Stew, special, per pound.....	11
native, per pound.....	8
Plate, special, per pound.....	12
native, per pound.....	8
Chuck roast, special (3 lbs. and over), per pound.....	12
Chuck roast, native (3 lbs. and over), per pound.....	8
Rib roast, special, per pound.....	33
Rib roast, second cut, native (3 pounds and over), per pound.....	9
Rib roast, first cut, native (3 pounds and over), per pound.....	11
Pot roast, special, per pound.....	9
native, per pound.....	12
Rump roast, special, per pound.....	20
native, per pound.....	12
Porterhouse roast, special, per pound.....	22
choice, per pound.....	31
native, per pound.....	16
Steak, chuck, special, per pound.....	13
native, per pound.....	9
Round, bottom, special, per lb.....	13
native, per lb.....	9
Round, top, special, per pound.....	15
native, per pound.....	10

Sirloin, special, per pound.....	20
native, per pound.....	12
Sirloin, choice cut, special, per pound.....	23
Sirloin, choice cut, native, per lb.....	16
Rump, special, per pound.....	20
native, per pound.....	12
Porterhouse (not less than 11 pounds), special, per pound.....	23
Porterhouse (not less than 11 pounds), choice, per pound.....	34
Porterhouse (14 pounds and over), native, per pound.....	17
Porterhouse, short, special, per pound.....	20
Porterhouse, short, choice, per pound.....	28
Porterhouse, short, native, per lb.....	12
Tenderloin, Western, special, per pound.....	35
NOTE—"Choice beef" is kept on hand in the cold storage plant at Cristobal. Orders placed with commissary storekeepers before 11 a. m., will be shipped for delivery on the following morning.	
Pork—Hams, fresh, per pound.....	\$23
Shoulders, fresh, per pound.....	\$19
Loins, chop, or roast, per pound.....	18
Spare ribs, per pound.....	112
Pigs' feet, fresh, per pound.....	4
Pigs' heads, fresh, whole.....	83
1 head.....	42
Sausage, home made, per pound.....	23
Ox tails, per pound.....	9
Beef tongue, native, whole, per pound.....	20

## MISCELLANEOUS.

Brains, calves', per pound.....	7
Calves' heads, each.....	18
Kidneys, beef, per pound.....	10
Livers—Beef, per pound.....	9
Calf, per pound.....	24
Steak—Hamburger, packed, per pound.....	17
Hamburger, 20-pound containers, per pound.....	12
Sausage—Bologna, per pound.....	12
Frankfurter, per pound.....	12
Frankfurter, imported, tin.....	11
Lieberwurst, per pound.....	8
Pork, per pound.....	14
Sweetbread, beef, per pound.....	32
Eggs, fresh, per dozen.....	16
per 1 dozen.....	16
Bloaters, fancy, each.....	5
Bluefish, per pound.....	11
Codfish, dried, per pound.....	10
Haddock, smoked, per pound.....	12
Halibut, fresh, per pound.....	10
Whitefish, smoked, per pound.....	20
Salmon, per pound.....	31
per cake.....	2
Pates de foies gras, per jar.....	67

## CURED AND PICKLED MEATS.

Beef—Corned, No. 1, per pound.....	15
No. 2, per pound.....	12
Ham—Real York and Cumberland, per pound.....	43
Genuine Westphalia, per pound.....	50
Mincee, "Bologna" style, per pound.....	112
Shoulders, sugar cured, boneless, whole, per pound.....	26
Sugar cured, boneless, whole, per pound.....	20
Sliced, half, per pound.....	22
Sliced, whole, per pound.....	27
Whole, boiled, per pound.....	29
Half, boiled, per pound.....	27
Sliced, boiled, per pound.....	35
Bacon—Breakfast, sliced, per pound.....	28
Whole, piece, per pound.....	29
Strips, whole, per pound.....	27
Sliced, jar.....	30
Sliced, tin.....	27
Squares, whole, per pound.....	29
Ham, lunch, per pound.....	40
Pork, bellies, per pound.....	18
Pork, clear, per pound.....	30
Pork, standard mess, per pound.....	14
Ox tongues, whole, 3 to 5 lbs., per pound.....	24
Native, per pound.....	7
Pigs' feet, pickled, per pound.....	7
Pigs' feet, corned, per pound.....	7
Tongues, per pound.....	22

## DAIRY PRODUCTS.

Butter—Creamery, special, per pound.....	38
Creamery, 60-62 lb. tub, whole tub, per pound.....	37
Sheffield Farms, extra fancy, per lb.....	38
Oleomargarine, per pound, carton.....	29
Cheese—Philadelphia cream, cake.....	43
Roquefort, per pound.....	9
Young America, per pound.....	22
Swiss, per pound.....	34
Edam, each.....	1.15
Edam, tin.....	29
Parmesan, per pound.....	34
Gouda, per pound.....	26
Snappy, per can.....	9
Milk, Sheffield Farms, per quart.....	**15
Fernilac, bottle.....	**25
Ice cream, quart.....	125
1-gallon.....	150
Cream, 30 per cent, quart.....	**45
pint.....	**15
1-pint.....	**15

## POULTRY AND GAME.

Chickens—Fancy, roasting, milk fed, per pound.....	37
Chickens—Fancy, roasting, corn fed, per pound.....	22

Fowls, per pound.....	Price.
Fowls, light, per pound.....	\$22
Ducks, Western, per pound.....	24
Carons, per pound.....	32
Broilers, milk fed, per pound.....	**33
Broilers, corn fed, per pound.....	*31
Turkeys, per pound.....	28
Squabs, each.....	28
Broilers, milk fed, per pound.....	1.00
Grouse, each.....	36
Mallard ducks, 2 to 2 1/2 pounds, each.....	2.35
Pheasants, each.....	1.35

## VEGETABLES.

Beets, per pound.....	2
Cabbage, per pound.....	1 1/2
Carrots, per pound.....	12
Cauliflower, per pound.....	15
Celery, per head.....	3
Cucumbers, per pound.....	4
Egg plant, per pound.....	12
Lettuce, per pound.....	10
Onions, per pound.....	2 1/2
Peppers, green, per pound.....	3
Plantains, per dozen.....	12
Potatoes, white, per pound.....	*2
Potatoes, sweet, per pound.....	2
Squash, per pound.....	2 1/2
Turnips, per pound.....	12
Tomatoes, per pound.....	5
Yams, Lucua, per pound.....	3

## FRUITS.

Apples, per pound.....	6
Grapefruit, tropical, each.....	3 1/2
Lemons, per dozen.....	12
Limes, per 100.....	32
Oranges—Select, each.....	4
1 Tropical, per dozen.....	13
Cocoanuts, each.....	4
Bananas, per bunch.....	38
Bananas, each.....	1 1/2
Apple, evaporated, per pound.....	11
Apples, evaporated, per pound.....	11
Pears, evaporated, per pound.....	23
Pineapples, each.....	7
Figs, dried, 12-oz. packages.....	14
Figs, dried, 5-oz. packages.....	5
Raisins, seedless, package.....	11
1 table, per pound.....	18
Currants, cleaned, package.....	18
Prunes, stewing, per pound.....	*11
Watermelons, each.....	38
Plums, per pound.....	7
Peaches, fresh, per pound.....	5
Pears, fresh, per pound.....	6
Cantaloupes, each.....	5

\* Indicates advance from preceding list.

\*\*Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective September 7:

ARTICLE.	PRICE CHANGE.
	Old. New.
Carolina perfectos, box.....	\$3.95 \$0.16
Each.....	
Brushes, hair, ea.....	.73 .65
Brassieres, ea.....	.43 .37
Gingham, yd.....	.10 .08
Overalls, boy's, ea.....	.77 .22
Pliers, side-cutting, ea.....	.38 .48
Mattings, Japanese, yd.....	.22 .19
Genilla biscuits, tin.....	.82 .54

## Additions to Stock.

Trunks, high, 36", ea.....	\$15.90
Trunks, steamer, 36", ea.....	13.90
Trunks, steamer, 36", ea.....	10.50
Trunks, high, 36", ea.....	11.30
Biscuits:	
Arcadian, N. B. Co., tin.....	.21
Baronet, N. B. Co., tin.....	.21
Later Tater, N. B. Co., tin.....	.21
Paste, aridine, tin.....	.22
Forms, dress, adjustable, ea.....	11.80
Forms, women's, d. of Saxon, pr.....	3.80
Forms, white canvas, Saxon, pr.....	3.30
Bowls, salad, D 3191, 8", ea.....	1.10
Jugs, ice, Peary D 3751, ea.....	1.20
Jugs, Newlyn D 3751, 4-q., ea.....	.72
Jugs, Concord D 3647, ea.....	.82

## Taboga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p.m.; Monday, Thursday, Saturday, and Sunday, at 9.40 a.m.

Leave Taboga—Daily, except Friday, at 7 a.m. (On Mondays and days following holidays, one hour earlier); Monday, Tuesday, and Saturday at 1.30 p.m.; Sunday at 7.15 p.m. The 9.40 a.m. trips from Balboa await the arrival of Panama Railroad trains.



## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next five weeks are given in this table:

## SEPTEMBER.

DATE.	Time and height of high and low water.			
Wed., Sept. 8.....	2:56	8:58	15:08	21:16
Thurs., Sept. 9.....	3:31	9:38	15:45	21:54
Fri., Sept. 10.....	4:04	10:16	16:21	22:31
Sat., Sept. 11.....	4:34	10:54	16:58	23:10
Sun., Sept. 12.....	5:02	11:32	17:36	23:48
Mon., Sept. 13.....	5:31	12:16	18:15	24:26
Tues., Sept. 14.....	6:00	12:54	18:54	25:04
Wed., Sept. 15.....	6:29	13:32	19:32	25:42
Thurs., Sept. 16.....	6:58	14:10	20:10	26:20
Fri., Sept. 17.....	7:27	14:48	20:48	26:58
Sat., Sept. 18.....	7:56	15:26	21:26	27:36
Sun., Sept. 19.....	8:25	16:04	22:04	28:14
Mon., Sept. 20.....	8:54	16:42	22:42	28:52
Tues., Sept. 21.....	9:23	17:20	23:20	29:30
Wed., Sept. 22.....	9:52	17:58	23:58	30:08
Thurs., Sept. 23.....	10:21	18:36	24:36	30:46
Fri., Sept. 24.....	10:50	19:14	25:14	31:24
Sat., Sept. 25.....	11:19	19:52	25:52	32:02
Sun., Sept. 26.....	11:48	20:30	26:30	32:40
Mon., Sept. 27.....	12:17	21:08	27:08	33:18
Tues., Sept. 28.....	12:46	21:46	27:46	33:56
Wed., Sept. 29.....	13:15	22:24	28:24	34:34
Thurs., Sept. 30.....	13:44	23:02	29:02	35:12

## OCTOBER.

DATE.	Time and height of high and low water.			
Fri., October 1.....	2:36	8:23	15:09	21:13
Sat., October 2.....	3:14	9:02	15:48	21:52
Sun., October 3.....	3:52	9:41	16:27	22:31
Mon., October 4.....	4:30	10:20	17:06	23:10
Tues., October 5.....	5:08	11:00	17:45	23:49
Wed., October 6.....	5:46	11:40	18:24	24:28
Thurs., October 7.....	6:24	12:20	19:03	25:07
Fri., October 8.....	7:02	13:00	19:42	25:46
Sat., October 9.....	7:40	13:40	20:21	26:25
Sun., October 10.....	8:18	14:20	21:00	27:04
Mon., October 11.....	8:56	15:00	21:39	27:43
Tues., October 12.....	9:34	15:40	22:18	28:22
Wed., October 13.....	10:12	16:20	22:57	29:01
Thurs., October 14.....	10:50	17:00	23:36	29:40

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sealevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The times of the day are numbered consecutively from 04 (midnight) to 234 (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Thursday to New Orleans, for all States. Due at New Orleans on the following Tuesday.

Every Friday or Saturday to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week on Friday when the vessel has not been sent through the Canal to Balboa from New York, and on Saturday if the vessel has been sent to Balboa. The day of departure from Cristobal is bulletined by the Panama Railroad Company several days in advance. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE—The sailings on Monday, September 20 and October 18, will not land mail in New York until Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday boat to New Orleans. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the two sailings mentioned above.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., September 7, 1915.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon request of the addressee:

Bashner, J. F. Lindstrom, Capt. Wm.  
Battersley, R. F. McCulloch, Albert P.  
Briggsman, A. B. McQuillan, Hugh J.  
Carr, J. L. Palmer, Everett  
Cushing, J. C. Shull, Homer  
Delisser, Louis Starr, Edw. C.  
Gill, Mary S., c/o Fdk Gill Stoothoff, Leroy  
Hubbard, Frederick\* Wanke, Carl P.  
Libling, Jacob Willson, C. L. (2)

\*Special delivery.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, September 4, 1915:

DAY AND DATE.	STATIONS.				
	Vigia.	Alhajuela	Gatun Lake	Miraflores Lake	
Sun., Aug. 29.....	127.50	94.92	96.13	86.06	54.48
Mon., Aug. 30.....	126.40	92.80	86.06	86.07	54.42
Tues., Aug. 31.....	126.40	92.78	86.02	86.03	54.30
Wed., Sept. 1.....	129.55	94.35	96.12	86.06	54.29
Thurs., Sept. 2.....	129.49	94.93	96.06	86.04	54.20
Fri., Sept. 3.....	128.40	94.17	86.06	86.06	53.25
Sat., Sept. 4.....	129.65	95.17	86.06	86.04	54.01

Heights of low water to nearest foot..... 125.0 92.0

## August Rainfall for Three Years.

STATIONS.	1913	1914	1915	Station Av.	Years of record	Rainy days, 1915
<i>Pacific Section—</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>			
Balboa.....	6.74	5.19	13.09	7.69	17	21
Balboa Heights.....	8.20	6.09	15.24	7.89	19	22
Miraflores.....	4.23	7.61	11.35	8.38	5	20
Pedro Miguel.....	5.46	7.68	10.41	8.48	8	24
Rio Grande.....	7.68	9.11	10.04	9.96	11	27
<i>Central Section—</i>						
Culebra.....	9.76	9.73	9.96	10.48	24	29
Camacho.....	10.13	8.22	8.70	10.00	10	22
Empire.....	10.46	9.90	9.92	9.81	12	26
Gatun.....	16.45	7.97	4.51	11.97	33	23
Juan Mina.....	10.34	12.20	9.39	11.31	5	20
Alhajuela.....	16.92	12.66	10.39	12.75	17	26
El Vigia.....	12.04	12.98	12.16	12.74	7	27
Frijoles.....	14.75	9.66	7.62	11.42	4	20
Trinidad.....	13.39	4.97	8.38	10.30	9	20
Monte Lirio.....	10.42	16.85	12.47	11.93	8	13
<i>Atlantic Section—</i>						
Gatun.....	12.32	15.15	12.31	14.46	11	25
Brazos Brook.....	16.93	14.70	11.43	14.59	10	27
Colon.....	17.91	16.01	12.89	15.05	45	24

## Rainfall from August 1 to 31, 1915, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>		<i>Ins.</i>
Balboa.....	3.71	20	13.09
Balboa Heights.....	3.13	20	15.24
Miraflores.....	2.40	29	11.35
Pedro Miguel.....	2.38	20	10.41
Rio Grande.....	2.02	20	10.04
<i>Central Section—</i>			
*Culebra.....	1.90	28	9.96
*Camacho.....	1.60	21	8.70
Empire.....	1.36	18	9.92
Gatun.....	1.83	24	4.51
*Juan Mina.....	2.70	21	9.39
Alhajuela.....	3.84	21	10.39
*Vigia.....	3.37	21	12.16
*Trinidad.....	1.85	8	8.38
*Monte Lirio.....	2.30	19	12.47
<i>Atlantic Section—</i>			
Gatun.....	2.62	18	12.31
*Brazos Brook.....	2.10	19	11.48
Colon.....	2.69	18	12.89
*Bocas del Toro.....	1.97	7	8.20

\*Standard rain gage—readings at 5 p. m. only. Automatic rain gage at unstarred stations—values midnight to midnight.

## Fuel.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 400 and 650 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 45 shillings per ton of seven barrels.

The cable address of The Panama Canal, on the Isthmus, is "Panacanal, Panama;" in the United States, "Panacanal, Washington."

Shipping people addressing The Panama Canal by mail, should address "The Panama Canal, Balboa Heights, Canal Zone," for delivery on the Isthmus, and "The Panama Canal, Washington, D. C.," for delivery in the United States.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.			
Sails.	Arrives.		
Santa Marta.....	U. F. C. Sept. 1.....	Sept. 8	
Advance.....	P. R. R. Sept. 2.....	Sept. 9	
Metapan.....	U. F. C. Sept. 4.....	Sept. 13	
Almirante.....	U. F. C. Sept. 8.....	Sept. 15	
Panama.....	P. R. R. Sept. 9.....	Sept. 15	
Pastores.....	U. F. C. Sept. 11.....	Sept. 19	
Zacapa.....	U. F. C. Sept. 15.....	Sept. 22	
Allianca.....	P. R. R. Sept. 16.....	Sept. 22	
Calamares.....	U. F. C. Sept. 18.....	Sept. 26	
Carrillo.....	P. R. R. Sept. 22.....	Sept. 29	
Colon.....	P. R. R. Sept. 23.....	Sept. 29	

## CRISTOBAL-COLON TO NEW YORK.

Sails.	Arrives.		
Carrillo.....	U. F. C. Sept. 9.....	Sept. 16	
Colon.....	P. R. R. Sept. 9.....	Sept. 17	
Tendores.....	U. F. C. Sept. 13.....	Sept. 21	
Santa Marta.....	U. F. C. Sept. 16.....	Sept. 23	
Advance.....	P. R. R. Sept. 18.....	Sept. 25	
Metapan.....	U. F. C. Sept. 20.....	Sept. 28	
Almirante.....	U. F. C. Sept. 23.....	Sept. 30	
Panama.....	P. R. R. Sept. 25.....	Oct. 1	
Pastores.....	U. F. C. Sept. 27.....	Oct. 4	
Zacapa.....	U. F. C. Sept. 30.....	Oct. 7	

## NEW ORLEANS TO CRISTOBAL-COLON.

Sails.	Arrives.		
Turrialba.....	U. F. C. Sept. 1.....	Sept. 8	
Iheridia.....	U. F. C. Sept. 4.....	Sept. 9	
Abangarez.....	U. F. C. Sept. 8.....	Sept. 15	
Parismina.....	U. F. C. Sept. 11.....	Sept. 16	
Atenas.....	U. F. C. Sept. 15.....	Sept. 22	
Cartago.....	U. F. C. Sept. 18.....	Sept. 23	
Turrialba.....	U. F. C. Sept. 22.....	Sept. 29	

## CRISTOBAL-COLON TO NEW ORLEANS.

Sails.	Arrives.		
Cartago.....	U. F. C. Sept. 9.....	Sept. 14	
Turrialba.....	U. F. C. Sept. 9.....	Sept. 16	
Heredia.....	U. F. C. Sept. 16.....	Sept. 21	
Abangarez.....	U. F. C. Sept. 16.....	Sept. 23	
Parismina.....	U. F. C. Sept. 23.....	Sept. 28	
Atenas.....	U. F. C. Sept. 23.....	Sept. 30	



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., September 5, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Aug. 30.	<i>Proteus</i> .....	American	U. S. Navy collier.	Norfolk	Cavite	Coal	11,132	11,143	6,749
Aug. 30.	<i>Olson &amp; Mahony</i> .....	American	Olson & Mahony	New Orleans	Arica, Chile	Ballast		1,564	782
Aug. 30.	<i>Ingénieur Schorow</i> .....	Dutch	Werf Conrad Haarlem	Rotterdam	Vladivostok	Ballast			
Aug. 30.	<i>Diomedes</i> .....	Dutch	Werf Conrad Haarlem	Rotterdam	Vladivostok	Ballast			
Aug. 30.	<i>Huallega</i> .....	Peruvian	Peruvian S. S. Line	Cristobal	Guayaquil	General	800	4,538	2,430
Aug. 30.	<i>Limari</i> .....	Chilean	South American Line	Cristobal	Valparaiso	Ballast	1,359	3,631	2,421
Aug. 31.	<i>Volga</i> .....	British	Volga S. S. Co., Ltd.	Norfolk	Portland, Ore.	Ballast	5,510	4,801	3,539
Aug. 31.	<i>Toyochichi Maru</i> .....	Japanese	Acties-Bonheur	Christiana	San Francisco	General	100	1,548	1,018
Aug. 31.	<i>Ortega</i> .....	British	Pacific Steam Navigation Co.	Liverpool	Valparaiso	General	626	8,306	4,960
Aug. 31.	<i>Kurema</i> .....	British	Ellerman & Bucknall Lines	New York	New Zealand	General	7,000	5,621	4,014
Aug. 31.	<i>Bantu</i> .....	American	Islandian S. S. Co., Ltd.	Buenaventura	San Francisco	General	5,510	4,604	3,047
Sept. 1.	<i>Strathfillan</i> .....	British	Nippon Yusen Kaishaiki Kaisha	New York	Japan	General	8,728	7,696	5,527
Sept. 1.	<i>Crown of Granada</i> .....	British	Strathfillan S. S. Co., Ltd.	New Orleans	Pisagua, Chile	Ballast		4,639	3,382
Sept. 1.	<i>Mexican</i> .....	British	Crown S. S. Co., Ltd.	Glasgow	Santa Rosalia	Coke	2,409	3,077	2,137
Sept. 1.	<i>Harry Luckenbach</i> .....	American	American-Hawaiian Line	New York	San Francisco	General	6,769	8,993	6,715
Sept. 1.	<i>Snowdonian</i> .....	British	Luckenbach Line	New York	San Francisco	General	2,400	3,001	3,047
Sept. 2.	<i>Tellus</i> .....	Norwegian	Stmshps. Godeilan & Coranin.	Newport News	Portland, Ore.	Ballast		4,627	3,482
Sept. 2.	<i>Uljisses</i> .....	Dutch	Wilhelmssens Dmspk. Selsk.	New York	Vladivostok	General	11,500	8,613	5,934
Sept. 2.	<i>Sirombi</i> .....	British	Coal Association	Rotterdam	Vladivostok	Ballast			
Sept. 3.	<i>Jamaica</i> .....	British	Anglo-Saxon Petroleum Co.	New Orleans	San Francisco	General	7,360	6,498	4,405
Sept. 3.	<i>Santa Catalina</i> .....	American	Royal Mail Steam Packet Co.	Cristobal	Buenaventura	General	500	1,170	620
Sept. 3.	<i>Torridge</i> .....	British	Atlantic & Pacific S. S. Co.	Norfolk	Tocopilla	Ballast		6,657	4,409
Sept. 3.	<i>Dakota</i> .....	British	Tatum Steam Navigation Co.	Marseilles	San Francisco	Ballast		5,519	4,123
Sept. 4.	<i>Carib H</i> .....	American	American-Hawaiian Line	New York	San Diego	General	6,881	6,891	4,751
Sept. 4.	<i>Kroonland</i> .....	Panamanian	Robert Wilcox & Company	Cristobal	Balboa	Ballast		244	212
Sept. 4.	<i>Andijk</i> .....	American	Panama Pacific Line	New York	San Francisco	General	5,900	13,076	8,551
Sept. 4.	<i>Hollye</i> .....	Dutch	Holland America Line	Norfolk	Taitai	Coal	8,237	6,350	4,632
Sept. 5.	<i>Heigh Hall</i> .....	British	F. S. J. Hall	Newport News	Portland, B. C.	Ballast			
Sept. 5.	<i>Pleiades</i> .....	British	Haigh Hall S. S. Co.	Saint Lucia	Portland, Ore.	Ballast			
Sept. 5.		American	Luckenbach Line	New York	San Francisco	General	2,995	4,147	3,255

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Aug. 30.	<i>Crown of Seville</i> .....	British	Crown S. S. Co.	Vancouver	London	Gen. and lumber.	8,822	7,684	5,450
Aug. 30.	<i>Henry T. Scott</i> .....	American	California S. S. Co.	Iquique	Colon, for orders.	Nitrates	2,100	1,814	951
Aug. 30.	<i>Jamaica</i> .....	British	Pacific Steam Navigation Co.	Buenaventura	Colon	General	550	1,170	620
Aug. 31.	<i>Indra</i> .....	British	Indra S. S. Co.	Hilo	Boston	Sugar, hemp	7,000	6,844	4,931
Aug. 31.	<i>Missouri</i> .....	American	U. S. Navy battleship	San Pedro	Annapolis			13,450	
Aug. 31.	<i>Ohio</i> .....	American	U. S. Navy battleship	San Pedro	Annapolis			13,900	
Aug. 31.	<i>Wisconsin</i> .....	American	U. S. Navy battleship	San Pedro	Annapolis			12,830	
Sept. 1.	<i>Inerlay</i> .....	British	Law, Leslie, & Co.	Talahano	Newport News	General	6,700	5,303	3,843
Sept. 1.	<i>Genoa</i> .....	Norwegian	L. J. Mowtchells	Taitai	Montreal	Nitrates	10,800	7,368	5,073
Sept. 1.	<i>Panama</i> .....	American	American-Hawaiian Line	Hilo	Del. Breakwater	Sugar, pines	8,900	6,937	4,760
Sept. 2.	<i>Atma</i> .....	Norwegian	African-Australian Line	Pagoumene	New York	Chrome ore	7,220	6,012	4,516
Sept. 2.	<i>Kim</i> .....	Norwegian	P. Johannessens	Iquique	Norfolk	Nitrates	10,000	7,552	4,505
Sept. 2.	<i>Jungfer</i> .....	Danish	C. K. Hansen	Cruz Grande	Philadelphia	Iron ore	5,900	4,203	3,133
Sept. 2.	<i>Panama</i> .....	British	Empire Transport Line	Cruz Grande	Philadelphia	Iron ore	7,300	5,233	3,821
Sept. 2.	<i>Frederik Luckenbach</i> .....	American	Luckenbach Line	San Francisco	Phila. and N. Y.	General, lumber	3,407	3,006	2,042
Sept. 3.	<i>Wm. O'Brien</i> .....	American	East Coast Transport Co.	Puget Sound	New York	Lumber, copper	7,100	5,514	3,995
Sept. 3.	<i>La Blanca</i> .....	British	London and Pacific Pet. Co.	Talara	London	Kerosene, benzine	5,900	5,147	3,268
Sept. 4.	<i>Mexico</i> .....	British	Pacific Steam Navigation Co.	Valparaiso	Liverpool	Cotton, wool, etc.	2,241	6,493	4,137
Sept. 4.	<i>Idomeneus</i> .....	British	Ocean S. S. Co., Ltd.	San Francisco	London	Lumber, general	6,700	6,654	4,633
Sept. 4.	<i>Ferrona</i> .....	British	British & Chilean Line	Junin	Colon, for orders	Nitrates	7,109	5,492	4,016
Sept. 4.	<i>Cauca</i> .....	British	Pacific Steam Navigation Co.	Guayaquil	Guayaquil	Potatoes, etc.	1,044	1,557	993
Sept. 4.	<i>Jason</i> .....	British	Ocean S. S. Co.	Victoria	Kingston	Lumber	6,600	7,537	5,408
Sept. 4.	<i>City of Naples</i> .....	British	Hall Line	Singapore	Boston	General	8,400	6,335	4,718

\*Other than vessels which passed through the Canal.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC.

Date	Vessel	Line	From	Date	Vessel	Line	From
Sept. 6.	<i>Talawa</i> .....			Sept. 6.	<i>Stanley Bell</i> .....	Dollar Line	Australia
Sept. 10.	<i>Calliope</i> .....			Sept. 10.	<i>Calliope</i> .....	Gladstone Company	San Francisco
Sept. 15.	<i>Egmont Castle</i> .....			Sept. 15.	<i>Egmont Castle</i> .....	Lancashire Shipping Co.	Singapore

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	To
Aug. 4.	<i>Wegadesk</i> .....	Earn Line	Norfolk	Aug. 30.	<i>Orford</i> .....	Earn Line S. S. Co.	Nima Nima, Cuba
				Aug. 30.	<i>Melton</i> .....	Leyland Line	Gulfport.
				Aug. 31.	<i>Zeta</i> (schooner)	Robert Wilcox & Co.	

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Sept. 7.	<i>Siena</i> .....	Italian Line		Sept. 9.	<i>Siena</i> .....	Italian Line	Genoa and way pts.
Sept. 9.	<i>Buenos Aires</i> .....	Spanish Line		Sept. 11.	<i>Camio</i> .....	Elders & Fyffes	Bristol and Ja.
Sept. 11.	<i>Camio</i> .....	Elders & Fyffes S. S. Co.		Sept. 12.	<i>Buenos Aires</i> .....	Spanish Line	Barcelona

\*Other than vessels which passed through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

## DEPARTURES.

Aug. 31.	<i>Newport</i> .....	Pacific Mail S. S. Co.	San Francisco	Aug. 31.	<i>Wilmington</i> .....	Chas. Nelson	San Francisco
Aug. 31.	<i>Isabela</i> .....	N. Y. and Porto Rico Line	Hongkong	Aug. 31.	<i>O. H. Clark</i> .....	C. H. Huggins	Ship Creek, Alaska
Sept. 3.	<i>Kiyo Maru</i> .....	Toyo Kisen Kaisha		Sept. 1.	<i>Isabela</i> .....	N. Y. & Porto Rico Line	Valparaiso

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Sept. 7.	<i>Newport</i> .....	Pacific Mail S. S. Co.	San Francisco	Sept. 7.	<i>Kiyo Maru</i> .....	Toyo Kisen Kaisha	San Francisco
							Colonel.

\*Other than vessels passing through the Canal.

# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, SEPTEMBER 15, 1915.

No. 4.

## The Canal Record

Official publication of The Panama Canal.

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Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### New 15-Yard Dipper Dredge Due to Arrive Soon.

The new 15-yard dipper dredge *Cascadas* has been launched at the yards of the contractor, the Bucyrus Company, at Port Richmond, N. Y., and is due to be delivered at the Canal in October. The *Cascadas* will be similar in general features to the *Gamboa* and the *Paraiso*, but will have a beam of several feet more than the 44-foot width of the two 15-yard dipper dredges now in service. Like the present dredges of this type, it will be provided with interchangeable dippers of 12-cubic yards capacity. Three 1,000-cubic yard steel barges ordered especially for use with the *Cascadas* have been placed in service, working in the Cut with the *Gamboa* and the *Paraiso*.

### Cape Mala Light Out for a Short Period.

The recently established first-order light at Cape Mala, on the point marking the western limit of the entrance to the Gulf of Panama, about 90 miles from the entrance to the Canal, was not burning during the period from September 9 to 12, inclusive. Immediately upon this condition being reported by the keeper of the light, the Marine Division despatched an expedition to restore the light to service. It was found that the flasher had been put out of commission by the heat. The conditions causing this were remedied, and the light restored to service in the evening of September 13.

### Daily Survey of Channel Affected by Slides.

One of the features of the active work of the Dredging Division in the excavation at the bases of the Culebra slides in the Cut is the daily survey of the channel of the Canal between stations 1770 and 1798. Three field

parties leave Paraiso every morning at 7 in launches, proceed to their respective parts of the 2,800-foot section lying between the stations named, run transverse lines of soundings every 50 feet, making soundings on each line at intervals of 15 feet, from water's edge to water's edge, an average of about 300 feet, plot the soundings, trace the 5-foot contours determined by them, and submit completed blueprints before 10 a. m. This requires rapid, methodical work, and it has been calculated that the field parties, through their developed proficiency, require on the average approximately seven-tenths of a second to drop the lead, read the sounding, raise the lead, and cast it for the next sounding.

The contour chart which results from this survey indicates the status of the channel and reveals the points at which extra effort is required. Copies are placed in the hands of the resident engineer, the superintendent, and the supervisor of the Dredging Division, another copy is sent to Balboa Heights for the information of the Governor and the Marine Superintendent, and a fifth is filed with the office records.

As soon as the soundings are completed, four drag parties proceed to drag the channel for bumps that do not show on the cross section soundings. This dragging is carried on until after the passage of the commercial shipping. By such means it is possible to determine to the inch the depth of the channel; ships are held up or passed on the information received; every inch of the buoyed channel is covered; and the dragging between the passages of shipping takes care of changes that may occur.

This work, as well as the dredging, is carried on every day, including Sundays and holidays.

### Family Quarters for Silver Employees at Pacific Locks.

Seven frame buildings for family quarters for silver employees are being erected to the southeast of Pedro Miguel, directly east of the main line of the Panama Railroad, at a point about midway between the Pedro Miguel station and Miraflores tunnel. They will house 84 apartments and are primarily for the use of silver employees at the Pacific locks.

Each house will have 12 apartments, three in each wing of each floor of a two-story building. Each apartment will consist of two rooms each 12 by 12 feet in plan. The apartments are to extend through the building, opening on screened, partitioned porches both front and rear. There will be common toilets and shower bath in the rear. The construction is to be very similar to that of the type-18 gold bachelors' quarters of 24 rooms. The buildings will overlook Miraflores Lake. The roofs will be of corrugated asbestos instead of the usual corrugated iron, because the price of the latter has risen appreciably during the course of the European war.

## THE SLIDE SITUATION.

### Canal Traffic Resumed After Worst Congestion Since Last October.

Further movements of the slides on the east and west banks of the Canal at Culebra, which had caused a suspension of traffic through the Cut from August 7 to 10, prevented the passage of vessels from September 4 to 9, inclusive. On Friday, September 10, the channel was cleared sufficiently to allow the passage of the lighter draft vessels, of those which had collected at the two ends of the Cut and beyond while awaiting transit. Since that day the channel has been made wider and deeper and on Monday, September 13, the last of the larger waiting vessels, including the *Kronland*, the United States collier *Proteus*, and the *Andijk* of the Holland-American Line, which was drawing 30 feet of water, were handled through the Cut. Traffic is now normal.

This suspension of traffic was the most serious which has occurred since the Canal was blocked in October of last year by Cucaracha slide. In fact, this and the suspension in August have been the only occasions since October on which there was complete stoppage of navigation. At other times large vessels have been delayed for several days, but at the same time the vessels of medium draft were sent through without delay.

After the elimination of immediate danger at the base of Cucaracha slide the larger dredges were stationed at the bases of the east and west Culebra slides, which, moving toward each other, had made considerable aggressions on the channel since the opening of the Canal to traffic. The dredges were able to keep pace with the encroachment at the time, and even slightly to increase the channel in spite of it; but under occasional accessions of momentum to the moving masses the material slid into the channel more rapidly than the dredges could excavate it.

The section of channel affected by the two Culebra slides extends between Stations 1770 and 1798, a distance of 2,800 feet. The east slide lies directly to the north of Gold Hill, and the west slide to the north of Contractor's Hill. The width between the outer limits of the breaks on opposite sides of the Cut is greatest at Station 1787, where it amounts to 2,975 feet. A cross section of the Cut at this station is reproduced herewith. It is based on a survey made in August. The section was drawn with the elevations and horizontal distances on the same scale, so that the slopes are presented without distortion.

On the east side the break extends back 1,535 feet from the center line of the channel, and the surface at the outer limit of present breaking is 350 feet above sealevel. On the west side the break runs back 1,450 feet from the center line, and the present edge is at 585 feet above sealevel. The greater part of the movement at this time is from the west side. On July 1, it was estimated that 5,000,-

000 cubic yards were in motion on the west bank in this section, and 4,000,000 cubic yards on the east bank. Since that date about 2,000,000 cubic yards of spoil have been removed at the bases of the two slides.

In the past month and a half the forces of the Dredging Division have made some remarkable records in excavation. Five hard material dredges have been employed at the bases of the Culebra slides and they and all the accessories serving them have been worked under heavy pressure 24 hours a day.

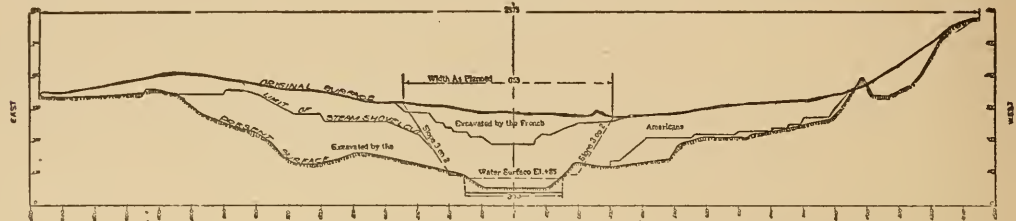
During the month of August the excava-

dredge of their type will mean, accordingly, increasing the dredging capacity at the base of the slides by about 25 per cent.

#### Proclamation of Neutrality Between Italy and Turkey.

The President of the United States issued on August 23 a proclamation of the neutrality of the United States and the territories under its jurisdiction in the war between Italy and Turkey. The provisions and injunctions are similar to those embodied in the proclamation of neutrality between Belgium and Germany,

issued on August 18, 1914, and published in THE CANAL RECORD of September 9, 1914. The date from and after which "no ship of war or privateer of any belligerent shall be permitted to make use of any port, harbor, roadstead or other waters within the jurisdiction of the United States as a station or place of resort for any warlike purpose or for the purpose of obtaining any facilities of warlike equipment" was established by the Italy-Turkey Proclamation as August 24, 1915.



OUTLINE OF CROSS SECTION OF CUT NEAR MIDDLE OF CULEBRA SLIDES.

tion at the bases of the Culebra slides amounted to 793,012 cubic yards. In the same month 66,228 cubic yards were removed from the base of Cucaracha slide, and the seagoing suction dredge *Culebra*, which ranges the Cut between Gamboa and Paraíso to remove silt and keep the channel clean, took out 132,639 cubic yards. The total excavation in the Cut by seven dredges was 991,879 cubic yards. From September 1 to the morning of September 13, the total excavation from the Culebra slides was 291,082 cubic yards and the total from the Cut was 380,127.

An idea of what this quantity means is afforded by comparison with one of the chambers of the Canal locks. To fill one of the chambers, 1,000 feet long by 110 feet wide, to a depth of 72 feet, would require 293,333 cubic yards.

In the 24 hours ending at 6 a. m., September 5, the excavation from the bases of the Culebra slides amounted to 32,522 cubic yards. The quantities removed by the individual dredges were, as follows:

Dredge.	Type.	Yardage.
<i>Cardenas</i> .....	5-yard dipper.....	3,601
<i>Chazares</i> .....	5-yard dipper.....	4,241
<i>Corazal</i> .....	Ladder.....	5,190
<i>Gamboa</i> .....	15-yard dipper.....	11,473
<i>Paraíso</i> .....	15-yard dipper.....	7,955

Total..... 32,522

On the same day pipeline suction dredge *No. 86*, at Cucaracha slide, removed 4,680 cubic yards, and the *Culebra* took out 5,225 cubic yards. Thus the record for the day was a total of 42,427 cubic yards removed from the Cut.

In the 24 hours ending at 6 a. m., September 7, the dipper dredge *Gamboa* excavated 12,545 cubic yards. This sets a new record on the Isthmus for a dredge working in hard material.

The present dredging fleet, which has kept the channel open under all except the most severe movements, is to be augmented shortly by the addition of the new 15-yard dipper dredge *Cascadas*. Three 1,000 cubic yard steel barges, ordered as accessories to the *Cascadas*, are now in service. The two 15-yard dipper dredges now working in the Cut, the *Gamboa* and the *Paraíso*, are doing, roughly speaking, slightly over half of the excavating at the Culebra slides. The addition of a third

#### WEATHER CONDITIONS, CANAL ZONE, AUGUST, 1915.

The rainfall for the month was above the station averages at seven stations and deficient at 11 stations. Over the Pacific section the rainfall was above normal, the excess being greater on the coast and diminishing farther inland, while over the central and Atlantic sections the rainfall was generally below normal. For the first time on record, during the month of August, the rainfall at Balboa Heights exceeded the total at Colon, and the Balboa Heights total this month is the highest for the 19 years of record, being almost double the average amount. During the first half of the month normal conditions were experienced, the rainfall being comparatively heavy over the Atlantic slope and light on the Pacific side, but after the middle of the month conditions were reversed, and the Pacific slope received the heavier rainfall.

This reversion of normal conditions was undoubtedly due to the passage of the hurricane that swept over the Caribbean and Gulf, during the period from August 10 to 17. Southerly winds prevailed over the Isthmus during and after the passage of the storm, the winds blowing towards the area of low barometer created by the storm. Northwest winds normally prevail over the interior and Pacific slope during the month of August, and the greater part of the moisture they contain is lost when they cross the divide. In this particular case, with southerly winds, the Pacific slope received the greater part of the rainfall, and on the Atlantic slope, conditions were experienced that ordinarily occur on the Pacific side.

Rainfall totals for the month ranged from 15.24 inches at Balboa Heights to 4.51 inches at Gamboa. The maximum amount of precipitation recorded on any one day was 3.84 inches at Alhajuela on the 21st. Heavy showers occurred quite generally throughout the Zone on the 18th, 20th, and 21st of the month.

The estimated rainfall over the Gatun Lake watershed was 26 per cent below the average, or 9.82 inches against a 15-year mean of 13.20 inches.

The air temperature at Balboa Heights was slightly below normal during the daytime, and slightly above during the night, while at Colon the temperature was approximately one degree above normal for all hours of the day. The atmospheric pressure was slightly below normal, while the relative humidity, daytime cloudiness, and temperature of the sea water were above normal on both coasts. The wind movement was generally below normal at Colon, while at Balboa Heights it was above during the daytime and below during the nighttime. The evaporation was approximately normal over both coasts.

No fogs were observed during the month at either station, but several night and early morning fogs occurred at interior stations, 80 per cent of which were dissipated by 6.30 a. m., and all the fogs lifted or were dissipated by 7.30 a. m.

The elevations of Gatun Lake, in feet above mean sealevel, were as follows: Mean for the month, 86.02; maximum, on the 15th, 86.15; minimum, on the 22d, 85.80. Evaporation from the lake surface during the month was 4.46 inches.

The climatological conditions prevailing during the month at the Atlantic and Pacific coast stations are summarized in this table:

STATIONS.	Pressure (reduced to mean of 24 hours)	Temperature.					Precipitation.			Wind.		
		Mean.	Maximum.	Date.	Minimum.	Date.	Total inches.	Station average.	Days of 0.1 inch or more.	Total movement (miles).	Prevailing direction.	Date.
Colon.....	29.832	80.6	90	Aug. 14	74	Aug. 9	94	12.89	15.05	21	5,551	W.
*Balboa Heights...	29.821	80.4	91	Aug. 12	72	Aug. 9	93	15.24	7.89	22	4,576	N. W.
											35	N. E.
												Aug. 3

\*Formerly Ancon.



## QUARANTINE ACTIVITIES.

## Examinations of Passengers and Crews in August Exceeded Previous Months.

Emigration from the Isthmus to foreign ports during the month of August, 1915, exceeded immigration from foreign ports by 63 persons. This brings the net emigration since July 1, 1913, a period of 26 months, to 26,894. This is at the rate of 1,034.4 per month. During approximately the same period the Canal force diminished from 42,262 on June 25, 1913, to 25,424 on August 25, 1915, a decrease of 16,838, which is at the rate of 647.6 per month.

The examinations of persons at the Canal ports by the quarantine authorities during August exceeded in number the examinations in July, which were, in turn, greater than those of preceding months. The total number of passengers and crews examined at Cristobal-Colon and Balboa-Panama during August was 19,714. A comparison with preceding months since the beginning of this year is afforded by this tabulation:

	Passengers.	Crews.	Total.
January.....	3,837	10,232	14,119
February.....	4,301	9,332	13,632
March.....	6,014	12,153	18,167
April.....	3,635	11,042	14,637
May.....	5,391	11,772	17,163
June.....	4,967	12,756	17,725
July.....	4,974	14,136	19,110
August.....	4,903	14,814	19,714
Total.....	38,049	96,229	134,269

A summary of the quarantine activities on the Isthmus during August is given in this consolidated report for the ports of Balboa-Panama and Cristobal-Colon:

Number of vessels inspected and passed.....	208
Number of vessels held in quarantine.....	13
Total.....	221
Supplementary inspections of vessels detained.....	7
Number of vessels fumigated on arrival.....	10
Number of vessels fumigated on departure.....	2
Total.....	12
Number of crew examined.....	14,814
Number of passengers examined (including 162 U. S. troops).....	4,900
Total.....	19,714
Number of supplementary inspections.....	1,031
Number of persons vaccinated at ports of arrival because of compulsory vaccination law.....	790
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law.....	715
Total.....	1,505
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and plague.....	279
Number of persons in quarantine on board vessels to complete period of incubation of yellow fever and plague.....	1,872
Total.....	2,151
Number of persons landed from foreign ports:	
Cabin.....	2,079
Steerage.....	1,198
Total.....	3,277
Number of persons embarked for foreign ports:	
Cabin.....	2,100
Steerage.....	1,340
Total.....	3,340
Number of persons arriving from coast towns on small launches and sailing craft.....	2,160
Number of persons sailing for coast towns on small launches and sailing craft.....	1,587
Apparent increase for month from coast towns.....	573
Apparent decrease for month from foreign ports:	
Cabin.....	21
Steerage.....	42
Total.....	63
Number of immigrants recommended for de-	

portation.....	476
Number of bills of health issued or voided.....	19
Number of inspections of decks.....	25
Number of inspections of vessels at docks.....	169
Number of persons landed.....	5,344
Less number from Pacific side.....	219

Total.....	5,218
Total number of persons sailing.....	4,927

Total apparent increase for month..... 291

The immigration report for Colon, which is the port receiving the majority of passengers, classifies the immigrants during August by places of origin, as follows:

From	Cabin.	Steerage
Europe.....	33	13
United States.....	29	121
Jamaica and West Indies.....	103	357
Venezuela.....	16	.....
Colombia.....	59	99
Cuba.....	42	15
Costa Rica.....	142	36
Bocas del Toro.....	42	445
Coast towns.....	.....	235
Total.....	1,236	1,321

Grand total..... 2,557

Of the 2,557, the men numbered 1,426; women, 609; children, 287; and 235 were not classified.

## Quarantine Inspection of West Coast Ports.

Dr. M. C. Guthrie, the Chief Quarantine Officer of The Panama Canal, is to sail from Balboa on Thursday, September 16, on the steamship *Huasco* of the South American Steamship Company to make a tour of the ports of the west coast south of Panama, as far as Valparaiso. His itinerary includes the principal ports of Colombia, Ecuador, Peru, and northern and central Chile. The purpose of the trip is to acquire familiarity with conditions in the west coast ports, especially those notoriously infected with plague and yellow fever, and to observe particularly the sanitary observances in the handling of cargo.

The existence of plague in some of the ports of the west coast affords at present the most imminent liability to infection to which the Canal and its shipping are subject. Yellow fever is not regarded with equal apprehension, because effective precautions against it can be carried out with relative ease, and the virtual extermination of the *stegomyia* mosquito in the vicinity of the Canal by continuous sanitary operations has limited the liability to an epidemic even if the fever should be introduced. But the plague is a stealthy disease, transmitted in insidious ways. It may be prevalent among rats on a ship or in a community for some time before breaking out among men and it is transmitted by fleas and other suctorial invertebrates which are widely prevalent in the tropics on rats, dogs, human beings, and many other animals. The complete elimination of these insect car-

riers in the present status of society is practically impossible, and the plans of campaign in case of infection on the Isthmus do not contemplate it, but depend on rat-proof construction, separation of rodents from food supplies, and intensive trapping and disinfection in the vicinity of each focus and isolation. Rats are the great carriers of plague, and as they are usually to be found in great numbers around warehouses and unprotected wharves (the "rat-proof" dock construction, of which the new Canal terminals are a type, is a development of the last decade), and will often make their way into bundles of cargo and be shipped with the goods, it follows that the precautions taken against them during the handling of cargo are of fundamental importance.

The Panama Canal has already very comprehensive and strict regulations designed to prevent infection. To study the conditions at the ports from which the danger is the greatest, with a view to recommending modifications in the Canal quarantine practices, if warranted, the better to conform to those conditions, is the purpose of Dr. Guthrie's trip. It may be that no changes, toward either greater strictness or the remission of present requirements, will be found to be desirable, but in any event the direction of the Canal quarantine will benefit by more intimate knowledge of the conditions against which the quarantine restrictions are directed.

As will be seen from the statistics published in THE CANAL RECORD, during the 11½ months of Canal traffic ending July 31, the number of vessels passing through the Canal from ports of the west coast of South America, with which are included a few shipments from Central America, was 277. This is 22 per cent of the total, and at the rate of 24 per month. The aggregate net tonnage of the vessels, Panama Canal measurement, was 891,402 and they carried an aggregate of 1,318,200 tons of cargo. From this it is obvious that protection against infection from this area involves a great amount of work. A considerable number of the ports are either plague infected or suspected and the nature of the transmission of plague is such as to render shipments from nearly all the ports of the west coast subject to restriction. An appreciation of these conditions on the part of shippers and ships' masters may lead to their willing cooperation in observances which might otherwise seem unduly onerous.

Towing locomotives Nos. 645 and 652, at Gatun Locks, were loaded on steel flat cars in the morning of Wednesday, September 15, for transfer to Pedro Miguel Lock.

## Deceased Employees.

Name	Check No.	Native of	Isthmian Residence.	Employed by	Date of death
Clark, James.....	91635	Jamaica.....	Colo.....	P. R. R.....	Sept. 8, 1915.
Payne, Thomas.....	87518	St. Lucia.....	Colo.....	P. R. R.....	Sept. 8, 1915.
Blackett, Luther B.....	55783	Barbados.....	Panama.....	S. A. P. R. Dept.....	Aug. 25, 1915
Davey, C. W.....	63341	Jamaica.....	Colo.....	O. and M.....	Aug. 30, 1915
Gooden, Charles.....	59917	Barbados.....	Colo.....	P. R. R.....	Sept. 2, 1915.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once.



## RECORD OF AN EARTHQUAKE.

Clear Seismograms Obtained at Balboa Heights on September 6.—Arrangement of Instruments.

The earthquake of the evening of Monday, September 6, which, according to press reports, did considerable damage to property and caused some loss of life in the Republic of Salvador, was apparently not felt by anyone in the Canal Zone. The four seismographs at the Balboa Heights observatory, however, recorded the seismic movement very clearly. They showed that the maximum amplitude of movement in this vicinity was 31.5 millimeters (about 1.24 inches), that the intensity here was III on the Rossi-Forel scale of I to X, and that the epicenter of the disturbance lay in a northerly direction, about 742 miles distant. The movement began at 8.23.26 p. m. and lasted until 9.24.18 p. m., a period of one hour and 52 seconds. This was in time of meridian 75° west, or five hours earlier than Greenwich time. That a disturbance of such duration and intensity was not perceived by the people of the Canal Zone and Panama is attributed to the fact, shown by the seismograph records, that the local movement was one of relatively slow oscillation, and not of the rapid vibration which has given many of the minor earthquakes of this locality an element of physical perceptibility frequently out of proportion to the movement.

The record made by the earthquake of September 6 on the large north-south seismograph is reproduced herewith, at nine-sixteenths of the size of the original record. This record was unusually clear. The records of disturbances epicentering closer to the station, notably those of 1914 in Los Santos Province of the Republic of Panama, about 120 miles from Balboa Heights, have usually been less satisfactory than this record of the Salvadorean earthquake, for the reason that more often than not the recording pen was thrown clear off the cylinder, and the crucial part of the action not recorded with accuracy.

The Balboa Heights observatory is equipped with four seismographs, two of which, designated as 25-kilogram instruments, are for relatively local work, recording disturbances up to 2,000 or 3,000 miles distant, while the larger instruments, known as the 100-kilogram standard, have greater capacity. They record anything from a minute local tremor up to a shock occurring 8,000 miles away. All are of the Bosch-Omori type. Each instrument consists essentially of an iron mass (weighing 25 or 100 kilograms, that is, 55 or 220 pounds, as the case may be) suspended from a vertical iron column by fine steel wires, while a horizontal bracket, or "steady mast" extends from the mass in a true north-south or east-west direction, ending in a device for holding the recording pen in

touch with a revolving cylinder. An earthquake causes oscillation of everything but the suspended mass and the "steady mast" extending from it. This unit remains motionless, by virtue of its inertia and the nature of its suspension. The vibrations of the revolving cylinder beneath the pen cause tracings on the surface of the cylinder which form the record of the disturbance.

The cylinder is made to revolve for the purpose of recording the time element in the disturbance. On a day without disturbance the recording point traces an even straight line. The cylinder, in addition to revolving, is made to move slowly in an axis at right angles to the axis of the pendulum, so that on successive revolutions the lines made by the recording point will not be superposed. The effect is to have the point trace an even spiral on the surface of the cylinder. An arrangement of clockwork makes dots on the spiral lines at intervals of one minute, and thus the seismologist can determine the time at which any point of the spiral was traced. In the Balboa Heights instruments, the cylinder is covered with onion skin paper, the surface of which has been coated with lamp black. This makes a surface on which very delicate tracings are recorded. On the completion of each day the paper is removed and treated in a cellulose bath which protects the lamp black against rubbing off and makes the sheet of paper a permanent record.

The vertical support holding the motionless mass is on the same base as the recording cylinder. At Balboa Heights each base is a column of concrete, founded on the rock 16 feet below the base of the foundation of the building, and the building was so constructed as to leave each base entirely free of contact with any other structure. Thus the machines are insulated from the vibrations of the building.

The first lateral sweep of the recording pen when a disturbance is felt is toward the epicentric, caused by the motion of the cylinder away from the center of disturbance. By having two instruments, one set on a north-south and the other on an east-west axis, two complementary records are taken. The records are taken from opposite angles, and thus establish a kind of system of polar coordinates. Taken together, they indicate the direction of the epicenter, and supplement each other in recording the amplitude and the time.

The records of earthquakes are distinguished from those of local disturbances, such as blasts, by the relative slowness of oscillation in an earthquake, as compared with a rapid and intense vibration from a blast. An earthquake wave travels forward at the rate of about 120 miles per minute ("a second per second" is the seismologist's phrase) but the

local oscillatory motion at a given point on the earth's crust will be slow. This is similar to the movement of a wave across water. A local disturbance is recorded as an intense, sudden jar, setting up quick vibrations which cease almost immediately.

Use of Forms 2124 and 2125 for Transfer to the Classified Service in the United States.

Forms 2124 and 2125 (referred to in the article published in THE CANAL RECORD of last week, entitled "Service in the United States," which set forth the administrative arrangements to govern recommendations for transfer from the Canal Service to the Classified Service) are for the use of employees in excepted positions and for employees who have been in excepted positions in The Panama Canal service.

The positions of clerk, bookkeeper, stenographer, typewriter, surgeon, physician, trained nurse, and draftsman are classified positions and the forms referred to above do not apply to persons in those positions.

Revenue Stamps Required on Some Checks and Drafts.

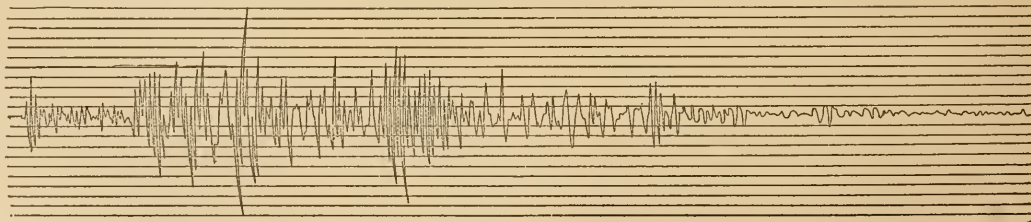
Under a recent law of the Republic of Panama all checks and drafts handled through banks in the Republic must bear revenue stamps. On the checks of local banks the tax is one cent. The law provides that the stamp shall be affixed and cancelled by the drawer of the check. Those who make payments to any of the divisions of The Panama Canal or the Panama Railroad Company by check are directed to affix and cancel the revenue stamp. The local depositaries of the United States and the Panama Railroad Company are located in the city of Panama, and all checks negotiated with them require the prescribed revenue stamps.

It is seen that the application of this is almost wholly local, and this notice is published for the special benefit of residents of the Canal Zone and Panama. It stamps are not obtainable at the time of remitting the check, coin payment should be enclosed to cover the cost of the stamps, which will then be affixed in the office of the Collector; but the cost of the stamp should never be included in the amount of the check.

High School Entrance Examinations.

High school entrance examinations will be held in the board room on the third floor of the Administration Building at Balboa Heights, on Monday, September 27, 1915, at 9.15 a. m.

The floating caisson dam No. 1 was placed across the lower entrance to the east flight of Gatun Locks in the morning of Wednesday, September 15, to effect the unwatering of the two lower chambers so that the gates may be treated with bitumastic solution and enamel, and some of the valves be repaired.



SEISMOGRAM RECORDED AT BALBOA HEIGHTS ON SEPTEMBER 6, 1915.

## OFFICIAL CIRCULARS.

## Operation of Oil Handling Plants.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,BALBOA HEIGHTS, C. Z., August 31, 1915.  
CIRCULAR NO. 660-27:

1. Effective September 1, 1915, the oil handling plants of The Panama Canal at Balboa and Mounat Hope will be transferred to the Supply Department for operation.

2. The General Storekeeper, Supply Department, at Balboa will have immediate supervision over these plants and all matters in connection with the oil-handling operations should be taken up with him.

CHESTER HARDING,  
Acting Governor.

## Children Traveling on Panama Railroad Steamship Line.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,BALBOA HEIGHTS, C. Z., September 4, 1915.  
CIRCULAR NO. 610-1 (amending circular No. 610):  
Paragraph 16 of circular No. 610 is hereby amended as follows:

Children under 16 years of age will not be furnished transportation unless accompanied by parents, guardians, or adult passengers who will be responsible for their care during the trip.

Employees of the Panama Railroad Steamship Line will not assume any responsibility for such children, and will not be permitted to offer suggestions as to the selection of the adult passenger to take care of the children in the event they are not accompanied by parents or guardians.

CHESTER HARDING,  
Acting Governor.

## Acting Municipal Engineer.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,BALBOA HEIGHTS, C. Z., September 8, 1915.  
To all concerned—Effective September 1, 1915, and during the absence of Mr. D. E. Wright on leave, Mr. W. J. Spalding will be in charge of the Municipal Division as Acting Municipal Engineer.JAY J. MORROW,  
Assistant to the Engineer of Maintenance.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,BALBOA HEIGHTS, C. Z., September 11, 1915.  
CIRCULAR NO. 104:

Effective October 1, 1915, Capt. F. H. Smith, Assistant Chief Quartermaster, is designated an accountable official of The Panama Canal and Panama Railroad, and as such will account for all nonexpended property used by or issued to hotels, retail commissaries, and the Ancon laundry.

Accountable officials will arrange to transfer their accountability for all such property by not later than the effective date of this circular. Major W. R. Grove will cease to be an accountable official upon effecting a transfer of his accountability to Captain Smith.

The record of property paid for from Panama Railroad funds will be kept separate from that of property paid for by The Panama Canal.

H. A. A. SMITH,  
Auditor, The Panama Canal.Approved:  
CHESTER HARDING,  
Acting Governor.

## \$5 Coupon Books.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,BALBOA HEIGHTS, C. Z., September 11, 1915.  
To all concerned—It has been brought to my attention that the privilege of drawing 5-dollar coupon books is being abused. It is requested that gold employees use 15-dollar books as far as possible and limit the use of 5-dollar books. Not more than two 5-dollar books should be drawn in one month.C. A. McILVAINE,  
Executive Secretary.

## Those Authorized to Receipt for Property.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,BALBOA HEIGHTS, C. Z., September 3, 1915.  
ACCOUNTABLE OFFICIALS:

Please furnish this office with the names of the persons to whom you have delegated authority to sign your name to receipts for property charged to your accountability.

AD. FAURE,  
Chief Accountant.

## Sworn Weighmaster at Balboa Terminals.

PANAMA RAILROAD COMPANY,  
OFFICE OF THE MASTER OF TRANSPORTATION,BALBOA HEIGHTS, C. Z., September 10, 1915.  
CIRCULAR NO. 144:

Heads of all departments—For your information I wish to state that Mr. H. L. Layland has been appointed sworn weighmaster for the Panama Railroad and The Panama Canal, reporting to the Master of Transportation, and as such will be stationed at the Balboa track scale, weighing all material passing in and out of Balboa terminal.

This scale will be in operation from 6.30 a. m. to 6 p. m. during the week and it is requested that all departments desiring cars weighed will arrange to pass them over the scale between these hours. A record will be maintained of all cars weighed and the weights shown thereon will be official.

Please be governed accordingly.

W. F. FOSTER,  
Acting Master of Transportation.  
Approved:  
S. W. HEADL,  
Acting Superintendent.

## Proposals for Clearing Land Defense Trails and Clearings.

Sealed proposals will be received at the office of the Chief Quartermaster, Balboa Heights, C. Z., until 10 a. m., September 25, 1915, and then opened, for two complete clearings, the second clearing to be followed by burning, over an area of 3,414 acres, more or less, located near Pedro Miguel, Miraflores, Gatun, and Toro Point, and of 68 miles of trail 20 feet wide located in various parts of the Canal Zone, trails to be cleared by burning or otherwise after each cutting. The first clearing to be completed by December 31, 1915, and the second clearing not to be undertaken until February, 1916, and completed by April 30, 1916. Form of contract and proposal may be obtained upon application to the office of the Chief Quartermaster, Balboa Heights. The general location of the work will be shown to prospective bidders on the maps in the fortifications office, Balboa Heights, between the hours of 2 p. m. and 5 p. m., September 18, and one trip occupying two days will be made over the whole area by a representative of the Division of Fortifications for the purpose of showing bidders the country and conditions. Taistrip will start at 9 a. m., September 20, from Miraflores Locks. Bids must be accompanied by cash or certified check made payable to the Collector of The Panama Canal in the sum of \$2,000 as a guarantee that the bidder will, if required by The Panama Canal, enter into a contract with satisfactory bond, certified check, or cash in the sum of \$5,000 as security for the faithful performance of the work covered by the contract. If the bidder to whom award is made fails or refuses to enter into contract with satisfactory security as required, the amount deposited will become payable to The Panama Canal as liquidated damages. Deposits will be returned to unsuccessful bidders upon rejection of their bids.

The Panama Canal reserves the right to accept any bid and to reject any or all bids.

Bids should be marked "Proposal for clearing land defense trails and clearings" and addressed to the Chief Quartermaster, Panama Canal, Balboa Heights, C. Z.

## JOINT LAND COMMISSION.

## Calendar.

The following is a calendar of claims set for hearing during the week ending September 18, 1915:

Monday, September 13—Docket 974, Rev. Dr. Guillermo Rojas, Bishop of Panama (for Catholic Church).

Tuesday, September 14—Docket 892, Ramón M. Valdes.

Wednesday, September 15—Docket 1014, Arturo Muller, for E. N. Cornell.

Thursday, September 16—Docket 978, Isaac Lowe; docket 982, Maria Jil Roanes; docket 984, Joseph Malabre; docket 987, José L. Arias.

Friday, September 17—Docket 1007, Alfred Darkin; docket 1011, Nicholas Arrasca; docket 1015, Zachariah Bell; docket 1018, Rosa Corraza and José A. Cianca.

J. A. LANGSTON, Acting Secretary.

## Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 191, docket numbers as shown, August 20, 1915—With reference to the following claims, the evidence before the Commission is that settlement had been made by the United States:

Docket Claimant.	Tax	Date of Payment.
1282 Alejandro Porras	2-17-15	
1310 Pedro Escalante	7-24-15	
1573 Ciriacio Cota	6-21-15	
1634 Aniceto (Aniceto) Saza	6-26-15	

1737 José Félix Sagura	12-7-14
1765 Joseph Taylor	9-12-14
1858 Eladio Vasquez	82 3-1-15
1866 Cosme Caudles (Canalez)	1659 9-4-14
1900 Bruno Marín	10-23-14
2492 Raymundo Lazaro	11-27-14
2498 Pedro Iribanes (Ibanez)	11-23-14
2711 Daniel Campbell	264 2-27-15
2741 Sra. Xezara (Cezaria) Echeverría and Antonio Barrera	3-13-15
2768 Obadiah James	7-17-15
2778 Robert Bell	5-20-15
2787 David Hillbert	964 1-30-15
2789 James Williams	1-30-15
2782 James Campbell	1-30-15
2784 James Davis	7-11-14
2788 Nathaniel Cadogan	2-13-15
2790 David Beckford	1-30-15
2790 Zachariah Grant	1-30-15
2791 James Thomas	1-30-15
2820 Mary McLean	2-13-15
2834 Sarah Reid	2-27-15
2847 Joseph Taylor	9-12-14
2858 Joseph Farrell	3-10-15
2859 Samuel Brown (Brown)	3-10-15
2863 William Greaves	2-20-15
2866 Ignacio Vivies	684 3-27-15
2881 David (D. E.) Blake	361 2-25-15
3019 William Taylor	3-19-15
3024 Pauline Fondu (Fondo)	3-27-15
3027 Juan C. Carrera	845 3-10-15
3031 Josephine Dennis	973 4-28-15
3032 Josephine Dennis	588-588 4-28-15
3035 Carlos Nunez	2-20-15
3039 Charles Williams	1-30-15
3041 George Parlin (Parkins)	5-23-15
3049 Juan Henriquez	3-19-15
3075 Samuel Anderson	468 12-30-14
3083 George Nathaniel Lawson	1-13-15
3125 Matus (Matise) Simonette	648-1030 3-27-15
3126 Sosthenes Auma de Berlyue	5-8 3-27-15
3138 Polius Louisto (Polisse)	975 4-1-15
3146 Saturnino Frutos (Fruto)	970 1-30-15
3155 Bernardo Zuniga	835 1-16-15
3157 Inocencio Frutos (Fruto)	8-1-15
3157 Nicolas Torres	641 1-16-15
3161 Juan Guzales (Gonzalez)	631 1-30-15
3165 Lucas Melendez	7-17-15
3207 Alzamor Guillermo (Guillermo Amador)	84 3-4-15
3340 Santiago Tenorio	4-1-15
3310 Paul Dixie (Dixier)	850-1034 3-13-15
3311 Edward Clarke	5-20-15
3319 Perito (Perito) Gonzalez	11 16-14
3346 Fernando Esquina	7-17-15
3348 Pedro Jimenez (Jimenes)	714 6-26-15
3373 Juan Gamara	4-14-15
3374 Natalio Florio	8-1-15
3376 Armand Sylvestre	4-10-15
3379 Arturo Fuentes	8-13-14
3382 Thomas Beckford	3-27-15
3397 William Richardson	5-1-15
3417 Catherine Darby	558 6-26-15
3424 Alexard Brissart	393 10-24-14
3431 José Herrera	1779-A 10-18-13
3433 Sidney Richards	3-1-15
3493 Augustine Crociale	2-17-15
3497 Thomas M. James	412 7-28-15
3499 West Caribbean Conference of the Seventh Day Adventist Church	3-2-15
3572 James Surgeon Fowles (James Fowles)	553 6-26-15

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

In the matter of the claim of Tomas Villa, for property located in Trinidad Valley, rule of dismissal No. 195, docket No. 938, August 26, 1915—in the matter of the claim of Tomas Villa, docket No. 948, for property located in the Trinidad Valley, this claim came on for hearing on August 26, 1915, and the evidence before the Commission is that payment for the property covered in this claim was made on November 10, 1910, in the sum of \$209. In view of this payment, and upon motion of counsel for the claimant, this claim is hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., September 13, 1915.

The following insignificantly addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon request of the addressee:

Barratt, Mrs. Catherine	Hillerman, Mrs. Abbie B.
Borch, A. E.	Kings, Bert
Carriett, n. Harley	Leary, Sr. Frank
Critchill, Jeannie	McLaren, Mrs. Ethel
Donane, Art (r?)	Miller, Charles
George, Horace W.	Pariser, Wallace, c/o Co. C.
Gordon, Wm. J., Q. M. C.	Peck, S. B.
Gordon, Percival	Pomeroy, Paul G.
Griffith, Captain Jack	Richards, Herbert H., c/o Army
Haggard, Corporal	Schiff, Mrs. Feliza de
1282 Pedro Escalante	Waters, Fred B.
1573 Ciriacio Cota	White, Roscoe
1634 Aniceto (Aniceto) Saza	Yates, Dewitt



## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective September 16 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts.

The following is a list of retail prices of cold storage provisions which will be effective September 16, 1915:

	Price.
Mutton—Stewing, per pound.....	9
Shoulder, trimmed, (not less than 5 pounds) per pound.....	12
Leg (8 to 10 pounds), per pound.....	12
Short cut, chops, per pound.....	23
Shoulder, chops, per pound.....	17
Lamb—Stewing, per pound.....	12
Shoulder, trimmed, per pound.....	12
Leg (5 to 8 pounds), per pound.....	24
Chops, per pound.....	29
Chops, shoulder, per pound.....	20
Veal—Stewing, per pound.....	12
Shoulder, for roasting, (not under 5 lbs.) per pound.....	15
Chops, shoulder, per pound.....	20
Chops, per pound.....	30
Loins, for roasting, per pound.....	36
Cutlets, per pound.....	36
Beef—Suet, special, per pound.....	34
Soup, special, per pound.....	5
Native, per pound.....	5
Soup, bones, special, per pound.....	24
Stew, special, per pound.....	11
Native, per pound.....	8
Plate, special, per pound.....	8
Native, per pound.....	8
Chuck roast, special (3 lbs. and over), per pound.....	12
Chuck roast, native (3 lbs. and over), per pound.....	8
Rib roast, second cut (not under 3 1/2 pounds), special, per pound.....	16
Rib roast, second cut, native (3 1/2 pounds and over), per pound.....	9
Rib roast, first cut (not under 3 pounds), special, per pound.....	19
Rib roast, first cut, native (3 pounds and over), per pound.....	11
Pot roast, special, per pound.....	20
Native, per pound.....	12
Rump roast, special, per pound.....	20
Native, per pound.....	12
Porterhouse roast, special, per pound.....	22
Choice, per pound.....	31
Native, per pound.....	16
Steak, chuck, special, per pound.....	13
Native, per pound.....	9
Round, bottom, special, per lb.....	13
Round, top, special, per pound.....	15
Native, per pound.....	10
Sirloin, special, per pound.....	20
Native, per pound.....	12
Sirloin, choice cut, special, per pound.....	23
Sirloin, choice cut, native, per lb.....	16
Kump, special, per pound.....	20
Native, per pound.....	12
Porterhouse (not less than 1 1/2 pounds), special, per pound.....	23
Porterhouse, short, special, per lb. (pounds), choice, per pound.....	34
Porterhouse (1 1/2 pounds and over), native, per pound.....	17
Porterhouse, short, special, per pound.....	20
Porterhouse, short, choice, per pound.....	28
Porterhouse, short, native, per lb.....	20
Tenderloin, Western, special, per pound.....	35
NOTE—"Choice beef" is kept on hand in the cold storage plant at Cristobal. Orders placed with commissary storekeepers before 11 a. m., will be shipped for delivery on the following morning.	
Pork—Hams, fresh, per pound.....	23
Shoulders, fresh, per pound.....	19
Loin, chop, or roast, per pound.....	18
Spare ribs, per pound.....	12

4 Pigs' feet, fresh, per pound.....	Price.
Pigs' heads, fresh, whole.....	83
1/2 head.....	42
Sausage, home made, per pound.....	23
Ox tails, per pound.....	13
Beef tongue, native, whole, per pound.....	20
MISCELLANEOUS.	
Brains, calves', per pound.....	47
Calves' heads, each.....	74
Kidneys, beef, per pound.....	10
Livers—Beef, per pound.....	10
Calif., per pound.....	24
Steak—Hamburger, package.....	17
Hamburger, 20-pound containers, per pound.....	11
Sausage—Bologna, per pound.....	14
Frankfurter, per pound.....	12
Frankfurter, imported, tin.....	11
Lieliervurst, per pound.....	8
Pork, per pound.....	14
Sweethead, beef, per pound.....	119
Eggs, fresh, per dozen.....	47
Boaters, fancy, each.....	5
Bluefish, per pound.....	14
Codfish, dried, per pound.....	14
Haddock, smoked, per pound.....	11
Halibut, fresh, per pound.....	10
Salmon, per pound.....	11
Whitefish, smoked, per pound.....	31
Yeast, per package.....	2
Pates de foies gras, per jar.....	67
CURED AND PICKLED MEATS.	
Beef—Corned, No. 1, per pound.....	15
No. 2, per pound.....	12
Ham—Real York and Cumberland, per pound.....	43
Genuine Westphalia, per pound.....	40
Mined, "Bologna style", per pound.....	12
Shoulders, sugar cured, boneless, whole, per pound.....	114
Sugar cured, boneless, whole, per pound.....	119
Half, per pound.....	121
Sliced, per pound.....	125
Whole, boiled, per pound.....	125
Half, boiled, per pound.....	127
Sliced, boiled, per pound.....	133
Bacon—Breakfast, sliced, per pound.....	127
Whole, piece, per pound.....	126
Strips, whole, per pound.....	120
Sliced, jar.....	30
Sliced, tins.....	27
Squares, whole, per pound.....	119
Ham, lunch, per pound.....	40
Pork, bellies, per pound.....	18
Pork, clear, per pound.....	14
Pork, standard mess, per pound.....	14
Ox tongues, whole, 3 to 5 lbs., per pound.....	24
Native, per pound.....	20
Pigs' feet, corned, per pound.....	7
Pigs' feet, Tongues, per pound.....	22

POULTRY AND GAME.	
Chickens—Fancy, roasted, milk fed, per pound.....	43
Chickens—Fancy, roasted, corn fed, per pound.....	27
Fowls, per pound.....	23
Grouse, live, per pound.....	22
Ducks, Western, per pound.....	24
Canons, per pound.....	32
Broilers, milk fed, per pound.....	33
Corn fed, per pound.....	32
Turkeys, per pound.....	28
Squabs, each.....	36
Geese, per pound.....	11
Grouse, each.....	1.00
Mallard ducks, 2 to 2 1/2 pounds, each.....	2.35
Pheasants, each.....	1.35
DAIRY PRODUCTS.	
Butter—Creamery, special, per pound.....	38
Creamery, 60-62 lb. tub, whole tub, per pound.....	37
Sheffield Farms, extra fancy, per lb.....	29
Oleomargarine, per pound, carton.....	58
Cheese—Philadelphia cream, cake.....	43
Roquefort, per pound.....	40
Young America, per pound.....	40
Swiss, per pound.....	34
Edam, each.....	1.15
Edam, tin.....	29
Parmesan, per pound.....	26
Gouda, per pound.....	26
Snappy, per cake.....	41.5
Milk, Sheffield Farms, per quart.....	25
Permillac, bottle.....	25
Ice cream, quart.....	42.5
1-gallon.....	44.5
Cream, 30 per cent.....	42.5
1-pint.....	41.5
VEGETABLES.	
Beets, per pound.....	2
Cabbage, per pound.....	15
Carrots, per pound.....	11
Caiflower, per pound.....	4
Celery, per head.....	4
Cucumbers, per pound.....	4
Egg plant, per pound.....	3
Lettuce, per pound.....	10
Onions, per pound.....	12
Peppers, green, per pound.....	12
Plantains, per pound.....	2
Potatoes, white, per pound.....	2
Potatoes, sweet, per pound.....	2
Squash, per pound.....	21
Turnips, per pound.....	11

Tomatoes, per pound.....	Price.
Vams, Lucea, per pound.....	3

FRUITS.	
Apples, per pound.....	6
Grape fruit, tropical, each.....	31
Grapes, per pound.....	32
Lemons, per dozen.....	1.13
Limes, per 100.....	32
Oranges—Select, each.....	4
Oranges, Tropical, per dozen.....	16
Cocoanuts, each.....	4
Bananas, per bunch.....	38
Bananas, each.....	1
Apples, evaporated, per pound.....	11
Apricots, evaporated, per pound.....	23
Pears, evaporated, per pound.....	11
Peaches, evaporated, per pound.....	7
Figs, dried, 1/2 oz. packages.....	14
Raisins, seedless, package.....	18
table, cluster, per pound.....	12
Currents, cleaned, package.....	12
Prunes, stewing, per pound.....	11
Watermelons, each.....	38
Plums, per pound.....	10
Peaches, fresh, per pound.....	5
Pears, fresh, per pound.....	6
Cantaloupes, each.....	14
Tangerines, each.....	11

\* Indicates advance from preceding list.  
 \*\* Indicates five cents allowed for return of bottle.  
 † Indicates reduction from preceding list.  
 ‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/4 ham of 1/2 shoulder of fresh pork will be sold.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m. and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and other sailing days of Panama Railroad vessels.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective September 14:

ARTICLE.	Old.	New.
Beispreads, ea.....	\$1.15	\$1.20
Benders, steak, ea.....	.05	.11
Kettles, 6-qt., ea.....	.50	.47
Cups, drinking, ea.....	.08	.11
Oil, 3 in 1, bot.....	.09	.07
Bags, cardboxes, ea.....	7.00	6.60
Bowls, sugar, ea.....	.09	.12

## Additions to Stock.

Banting, red, white, and blue, yd.....	\$3.06
Jack straps, "Uniform", ea.....	.30
Laces for low shoes, black, pr.....	.02
Laces for low shoes, tan, pr.....	.02
Laces for low shoes, black, pr.....	.02
Laces for high shoes, black, pr.....	.03
Laces for high shoes, tan, pr.....	.03
Bowls, slop, B. & O., ea.....	.17
Cups and saucers, A. D., B. & O., ea.....	.11
Batts, must., B. & O., ea.....	.27
Gingham, yd.....	.08
Presses, raguet, ea.....	.77
Collars, military, ea.....	.15
Batts, sauc., B. & O., ea.....	.21
Bowls, sugar, ea.....	2.75
Cups and saucers, G 6263, ea.....	1.80
Cups and saucers, bouillon, ea.....	.05
Dishes, bak., H 1935, ea.....	5.20
Dishes, fish, G 6262, ea.....	17.20
Dishes, bak., ea.....	3.10
Dishes, bak., ea.....	3.15
Jugs, cream, ea.....	1.70
Jugs, cream, ea.....	1.45
Plates, coupe, G 9721, ea.....	1.45
Platters, G 8721, ea.....	1.35
Platters, G 8721, ea.....	2.40
Plates, coupe, A 4807, ea.....	.41
Plates, sauc., ea.....	.23
Platters, H 1935, ea.....	2.50
Platters, H 1935, ea.....	3.50
Plates, coupe, H 1935, ea.....	1.55
Plates, sauc., H 1935, ea.....	.95
Plates, dinner, ea.....	.05
Plates, soup, ea.....	1.95
Platters, ea.....	2.75
Platters, ea.....	3.85
Plates, round, G 8721, ea.....	.85
Plates, ea.....	1.25
Pots, tea, G 8721, ea.....	3.80
Cases, cigrette, gun metal, ea.....	.47
Shoes, women's.....	3.15
White canvas, lb., oxford, pr.....	3.80
White satin dancing pumps, pr.....	3.80
Black satin dancing pumps, pr.....	3.80
Blue, laundry, kg.....	.04
Ketchup, tomato, 1-gal. jar.....	.75

## SHIPPING INFORMATION.

## October Weather Probabilities.

The following weather conditions may be expected at the Canal entrances during the month of October, 1915. Predictions are based on October records at Colon and Ancon for the past eight and nine years, respectively.

**Winds**—Light, variable winds will prevail over the Atlantic coast with an average hourly velocity of from five to 10 miles an hour, the higher velocity occurring from 12 noon to 4 p. m. Southeast will be the prevailing direction, although west and north-west winds may be expected during the middle of the day. A maximum velocity of from 30 to 38 miles an hour may be reasonably expected during the passage of local rain or thunder squalls.

Over the Pacific coast and the interior, light northwest winds will prevail with an average hourly velocity of from five to nine miles an hour. Variable winds and the higher velocities may be expected during the early part of the afternoon. Here, too, during occasional rain or thunder squalls, the maximum velocity of the wind may exceed 30 miles an hour, but these storms are invariably of short duration.

**Rain**—The average October rainfall at the Atlantic entrance of the Canal is 14.56 inches and on the Pacific side 10.53 inches, these averages being for periods of 45 and 18 years, respectively. Twenty-four days with rain may be expected on the Atlantic coast, and about 20 on the Pacific coast, while the average number of days with heavy rain (one inch or more) is seven and two, respectively. Throughout the length of the Canal, the greater part of the rainfall occurs during the daytime, the heaviest rainfall generally occurring between the hours of 1 p. m. and 6 p. m. However, at this season of the year the percentage of daytime rainfall is higher over the interior and Pacific coast than over the Atlantic coast, and there heavy rainfall may be expected during the early morning hours. Over both coasts the time of least rainfall is from 8 to 9 a. m.

**Fogs**—Practically no fogs may be expected at either Canal entrance, but night and early morning fogs will be numerous over the interior. Over the Gaillard Cut section of the Canal 25 nights with fog may be expected, but as all fogs lift or become dissipated before 8.30 a. m., they should not prove a hindrance to navigation under present conditions.

**Temperature**—The average shade air temperature will be approximately 79° Fahrenheit over both coasts. The air temperature on the Atlantic coast does not rise as high during the day or fall as low during the night as on the Pacific coast, but the time of occurrence of the maximum and minimum temperatures is the same over both coasts, being from 12 noon to 2 p. m. and from 4 to 6 a. m., respectively. Over the Atlantic coast the maximum temperature is not likely to exceed 91° Fahrenheit or the minimum fall lower than 70° while on the Pacific side the maximum temperature may be as high as 95° Fahrenheit and the minimum as low as 68°. The mean daily range in temperature is 10° Fahrenheit on the Atlantic coast and 14° Fahrenheit on the Pacific coast.

**Barometric pressure**—Barometric readings on the Isthmus are very uniform from day to day and except for the diurnal change caused by the daily change of the temperature, the

fluctuations are so slight as to have practically no value in forecasting weather conditions. The average sea level pressure will be approximately 29.85 inches over both coasts. The maximum reading for the month is not likely to exceed 29.95 inches nor the minimum to be lower than 29.70 inches.

**Relative humidity**—The relative humidity of the atmosphere should average about 87 per cent over both coasts. The range is greater on the Pacific side than on the Atlantic, the average night-time humidity being 95 per cent and 92 per cent, respectively, while the average minimum recorded during the day is 75 per cent and 78 per cent.

**Storms**—The Isthmus is seldom visited by violent or widespread atmospheric disturbances, although rain, wind, or thunder storms of more or less limited extent are of common occurrence, and may be expected quite frequently during the month. Rough weather may be expected to the northward of the Atlantic entrance, as this is the season of the West Indian hurricane. The path of these storms is well to the northward of the Isthmus but a rough sea accompanied by brisk winds may be occasionally experienced outside the breakwater following the passage of one of these storms. Generally cloudy weather will continue over both coasts, and smooth seas are usually experienced at the Pacific entrance during the month of October.

**Tides**—The extreme tidal range at Colon is less than two feet, and tidal fluctuations at the Atlantic entrance need not be considered.

The average tidal fluctuation at Balboa is 13 feet, while the maximum range may reach 20 feet.

Panama (Balboa) tide predictions for the next four weeks are presented in the following table:

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (–) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

SEPTEMBER.				
DATE.	Time and height of high and low water.			
Wed., Sept. 15....	1:18	7:16	13:49	19:40
	0.9	15.4	0.6	14.9
Thurs., Sept. 16....	2:09	8:05	14:40	20:48
	1.9	14.3	1.1	13.6
Fri., Sept. 17....	3:12	9:13	15:53	22:04
	2.9	13.3	2.4	12.3
Sat., Sept. 18....	4:26	10:35	17:09	23:23
	3.6	12.5	2.8	12.2
Sun., Sept. 19....	5:46	12:06	18:24	.....
	3.6	12.5	2.5	.....
Mon., Sept. 20....	0:55	6:58	13:22	19:19
	12.8	2.9	13.1	1.9
Tues., Sept. 21....	1:59	8:00	14:21	20:23
	13.8	2.0	13.9	1.2
Wed., Sept. 22....	2:48	8:50	15:09	21:40
	14.7	1.1	14.6	0.6
Thurs., Sept. 23....	3:31	9:36	15:52	21:53
	15.3	0.4	15.0	0.3
Fri., Sept. 24....	4:10	10:16	16:31	22:33
	15.7	0.2	15.4	0.1
Sat., Sept. 25....	4:46	10:55	17:07	23:10
	15.7	-0.1	15.1	0.5
Sun., Sept. 26....	5:21	11:35	17:42	23:43
	15.3	0.2	14.7	1.1
Mon., Sept. 27....	5:53	12:09	18:17	.....
	14.8	0.8	14.0	.....
Tues., Sept. 28....	0:25	6:26	12:48	18:55
	1.9	14.0	1.6	13.2
Wed., Sept. 29....	1:04	6:59	13:28	19:30
	2.8	13.2	2.5	12.3
Thurs., Sept. 30....	1:46	7:37	14:14	20:13
	3.7	12.3	3.4	11.4

## OCTOBER.

DATE.	Time and height of high and low water.			
Fri., October 1....	2:36	8:23	15:09	21:13
	4.6	11.4	4.1	10.7
Sat., October 2....	3:54	9:28	16:14	22:31
	5.2	10.8	4.5	10.5
Sun., October 3....	4:48	10:53	17:22	23:51
	5.4	10.6	4.4	10.9
Mon., October 4....	5:58	12:04	18:27	.....
	4.9	11.1	3.9	.....
Tues., October 5....	0:51	6:55	13:09	19:15
	11.7	4.0	11.1	3.0
Wed., October 6....	1:37	7:43	13:55	20:00
	12.8	2.7	12.9	2.0
Thurs., October 7....	2:16	8:26	14:37	20:41
	14.0	1.5	14.0	1.0
Fri., October 8....	2:55	9:04	15:16	21:23
	15.2	0.2	15.0	0.2
Sat., October 9....	3:31	9:47	15:54	22:02
	16.1	-0.8	15.8	-0.4
Sun., October 10....	4:08	10:28	16:33	22:44
	16.8	-1.3	16.2	-0.7
Mon., October 11....	4:47	11:10	17:14	23:27
	17.1	-1.6	16.2	-0.6
Tues., October 12....	5:27	11:54	17:51	.....
	16.9	-1.3	15.9	.....
Wed., October 13....	0:12	6:12	12:40	18:44
	0.0	16.3	-0.6	15.2
Thurs., October 14....	1:01	7:00	13:32	19:36
	0.8	15.3	0.4	14.2

## Rainfall from September 1 to 11, 1915, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>	<b>Ins.</b>		<b>Ins.</b>
Balboa.....	.69	11	1.54
Balboa Heights.....	.41	11	1.31
Miraflores.....	.61	11	1.50
Pedro Miral.....	.61	11	1.85
Ric Grande.....	.84	6	2.26
<b>Central Section—</b>			
Culebra.....	.78	7	1.39
*Camacho.....	1.02	7	2.22
Empire.....	.54	6	1.29
Gamboa.....	.70	8	2.34
*Juan Mina.....	1.56	7	2.80
Alajuela.....	.75	3	3.16
*Vigia.....	.88	7	3.92
Frijoles.....	1.83	6	4.01
*Monte Lirio.....	2.30	7	5.29
<b>Atlantic Section—</b>			
Gatun.....	1.30	4	6.50
*Brazos Brook.....	1.59	9	5.08
Colon.....	1.79	7	2.89
*Bocas del Toro.....	.....	.....	.....

\*Standard rain gage—readings at 5 p. m. daily.  
Automatic rain gage at unstarred stations—values midnight to midnight.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, September 11, 1915:

STATIONS.				
DAY AND DATE.	Vigia.	Alajuela.	Gamboa.	Gatun Lake.
Sun., Sept. 5.....	129.20	95.15	86.10	86.05
Mon., Sept. 6.....	130.30	95.27	86.19	86.12
Tues., Sept. 7.....	130.65	95.68	86.11	86.10
Wed., Sept. 8.....	127.80	93.80	86.06	87.01
Thurs., Sept. 9.....	126.85	93.32	86.10	86.14
Fri., Sept. 10.....	127.05	93.30	86.06	86.05
Sat., Sept. 11.....	126.85	93.67	86.11	86.05

Heights of low water to nearest foot..... 125.0 91.0

## Family Quarters.

Applications for married quarters on August 31, 1915, were as follows:

STATIONS.	Number of applications.
Ancon.....	418 (177)
Ancon Hospital.....	7 (3)
Paraiso.....	158 (30)
Gatun.....	106 (19)
Cristobal.....	135 (30)
Total.....	824 (259)

NOTE—The figures in parentheses show the number of applicants already occupying regular or non-occupying family quarters at stations other than those at which applications are filed.



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., September 12, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Sept. 7.....	Cambrian King.....	British.....	Clifton Shipping Co., Ltd.....	Newport News.....	Iquique.....	Fuel.....	5,200	3,947	2,965
Sept. 7.....	Inverclyde.....	British.....	Iaver Steamships, Ltd.....	New York.....	Vladivostok.....	General.....	7,057	5,701	3,913
Sept. 7.....	Palsick.....	British.....	Tyzack & Brantford.....	Norfolk.....	San Francisco.....	Coal dust.....	570	2,021	1,421
Sept. 7.....	Covet.....	British.....	New York & Pacific S. S. Co.....	New York.....	Valparaiso.....	General.....	3,031	3,222	2,216
Sept. 8.....	Magdala.....	Swedish.....	East Asiatic Line.....	Göteborg.....	San Francisco.....	General.....	3,800	4,649	3,354
Sept. 8.....	Westminster.....	British.....	Westminster S. S. Co., Ltd.....	New York.....	Wellington.....	General.....	7,291	4,737	3,411
Sept. 8.....	City of Bombay.....	British.....	Ellerman Lines, Ltd.....	New York.....	Vladivostok.....	General.....	7,500	5,865	4,130
Sept. 8.....	Haurvik.....	Norwegian.....	Brusgaard Klosterud.....	Baltimore.....	Santa Rosalia.....	Coke.....	5,036	4,842	3,540
Sept. 8.....	Murilla.....	British.....	Commonwealth & Dom. Line.....	New York.....	Auckland.....	General.....	12,500	9,336	6,682
Sept. 9.....	Earl of Elgin.....	British.....	Earl of Elgin S. S. Co., Ltd.....	New York.....	Comax.....	General.....	7,120	4,873	3,669
Sept. 9.....	Baron Tweedmouth.....	British.....	Hogarth Shipping Co., Ltd.....	Port Arthur.....	Auckland.....	Petroleum.....	7,311	5,452	4,075
Sept. 10.....	Donax.....	British.....	Anglo-Saxon Petroleum Co.....	Port Arthur.....	Moji, Japan.....	Oil.....	4,525	3,873	2,785
Sept. 10.....	Isthonia.....	American.....	American-Hawaiian Line.....	New York.....	Caleta Colusa.....	Coal.....	6,477	5,677	3,975
Sept. 11.....	Volusia.....	British.....	Gow, Harrison & Co.....	New York.....	Amoy, China.....	Petroleum.....	8,500	6,477	4,814
Sept. 11.....	Hermes.....	Dutch.....	Netherland Indian Tank S. S. Co.....	Port Arthur.....	Sdney.....	Petroleum.....	4,683	3,949	2,685
Sept. 12.....	Honolulu.....	American.....	American-Hawaiian Line.....	New York.....	Los Angeles.....	General.....	6,556	7,825	5,715

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Sept. 8.....	Lewis Luckenbach.....	American.....	Luckenbach Line.....	San Francisco.....	New York.....	General, lumber.....	4,010	4,599	3,492
Sept. 8.....	Ucayali.....	Peruvian.....	Peruvian Line.....	Mollendo.....	Cristobal.....	General.....	2,622	4,278	2,206
Sept. 9.....	Huasco.....	Chilean.....	South American S. S. Co.....	Talcahuano.....	Cristobal.....	General.....	1,271	4,563	3,121
Sept. 11.....	Finland.....	American.....	Panama Pacific Line.....	San Francisco.....	New York.....	General.....	2,000	13,122	8,485
Sept. 11.....	George Handel.....	American.....	Boston-Virginia Trans. Co.....	Bellingham.....	N. Y. and Boston.....	Lumber.....	3,500	2,752	1,730
Sept. 11.....	San Francisco.....	Swedish.....	Johnson Line.....	San Francisco.....	Santos.....	General.....	4,120	5,298	4,001
Sept. 11.....	Lewissham.....	British.....	Britain S. S. Co.....	Cruz Grande.....	Philadelphia.....	Iron ore.....	4,150	3,021	2,103
Sept. 12.....	Talava.....	British.....	Commonwealth & Australia Line.....	Port Firie.....	Galveston.....	Zinc concentrates.....	5,020	4,388	3,232
Sept. 12.....	Schmidt.....	Danish.....	East Asiatic Line.....	Iquique.....	Copenhagen.....	Nitrates.....	6,059	5,441	4,090
Sept. 12.....	Terrier.....	Norwegian.....	W. Wilhelmsen Line.....	Talait.....	Colon, for orders.....	Nitrates.....	8,200	5,495	4,032
Sept. 12.....	Nevarad.....	American.....	American-Hawaiian Line.....	Portland.....	Charleston.....	General.....	5,350	4,513	3,103
Sept. 12.....	Potomac.....	British.....	Purness, Witby & Co.....	Mejillones.....	Colon, for orders.....	Nitrates.....	5,684	3,934	2,930
Sept. 12.....	Tokai Maru.....	Japanese.....	Meiji Kaisha Kaishu Kaishi.....	Portland.....	England.....	Wheat.....	5,350	4,086	2,971
Sept. 12.....	Santa Cruz.....	American.....	W. R. Grace & Co.....	San Francisco.....	New York.....	General.....	6,000	8,427	3,751

\*Other than vessels which passed through the Canal.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC.

Date	Vessel	Line	From	Date	Vessel	Line	From
Sept. 11.....	Towa Maru.....	Towa Koski.....	Philadelphia.	Sept. 13.....	Egremont Castle.....	Lancashire Shipping Co.....	Singapore.
Sept. 11.....	Gen. Manuel Bonilla.....	P. Urucica & Co.....	New York.	Sept. 14.....	Hesperos.....	Brusgaard Klosterud.....	Talait.
Sept. 12.....	Clumberhall.....	W. Bartlepool S. Nav. Co.....	Newport News.	Sept. 15.....	Crown of Galisto.....	Crown S. S. Co.....	San Francisco.
Sept. 12.....	Ellerslie.....	Hutchins Brothers.....	Kingston.	Sept. 16.....	Ormiston.....	Orm. S. S. Co., Ltd.....	San Francisco.
Sept. 12.....	Calchas.....	Ocean S. S. Co., Ltd.....	Glasgow.	.....	.....	.....	.....
Sept. 12.....	Suecia.....	Johnson Line.....	Göteborg.	.....	.....	.....	.....

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	To
Sept. 7.....	Sinea.....	Italian Line.....	Genoa.	Sept. 6.....	Wegadesk.....	Earn Line.....	Felton, Cuba.
Sept. 9.....	Buenos Aires.....	Spanish Line.....	Bacelona.	Sept. 10.....	Sinea.....	Italian Line.....	Genoa, way ports.
Sept. 10.....	Puerto Rico.....	French Line.....	Bordeaux.	Sept. 11.....	Comito.....	Elders & Fyffes.....	Bristol, way pts.
Sept. 11.....	Camito.....	Elders & Fyffes.....	Port Limon.	Sept. 12.....	Buenos Aires.....	Spanish Line.....	Barcelona, way pts.

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Sept. 15.....	Tabor.....	Earn Line.....	Norfolk.	Sept. 16.....	Puerto Rico.....	French Line.....	Bordeaux.
Sept. 15.....	Magdalena.....	Royal Mail S. Packet Co.....	London.	Sept. 17.....	Magdalena.....	Royal Mail S. Packet Co.....	London.
.....	.....	.....	.....	Sept. 18.....	Tabor.....	Earn Line.....	Cuban ports.

\*Other than vessels which passed through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

## \*DEPARTURES.

Sept. 9.....	Stanley Dollar.....	Dollar Line.....	San Francisco.	Sept. 11.....	Stanley Dollar.....	Dollar Line.....	Valparaiso.
Sept. 11.....	San Juan.....	Pacific Mail S. S. Co.....	San Francisco.	.....	.....	.....	.....

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

.....	.....	.....	.....	.....	San Juan.....	Pacific Mail S. S. Co.....	San Francisco.
.....	.....	.....	.....	.....	Guernsey.....	W. Wilhelmsen.....	San Francisco.

\*Other than vessels passing through the Canal.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

	<i>Sails.</i>	<i>Arrives.</i>
Almirante.....	U. F. C. Sept. 8...	Sept. 15
Panama.....	P. R. C. Sept. 9...	Sept. 15
Pastores.....	U. F. C. Sept. 11...	Sept. 19
Zacapa.....	U. F. C. Sept. 15...	Sept. 22
Allianza.....	P. R. C. Sept. 16...	Sept. 22
Calamares.....	U. F. C. Sept. 18...	Sept. 26

CARRILLO..... U. F. C. Sept. 22..... Sept. 29  
Colon..... P. R. R. Sept. 23..... Sept. 29

## CRISTOBAL-COLON TO NEW YORK.

Santa Marta.....	U. F. C. Sept. 16.....	Sept. 23.
Advance.....	P. R. R. Sept. 18.....	Sept. 25.
Metapan.....	U. F. C. Sept. 20.....	Sept. 28.
Almirante.....	U. F. C. Sept. 23.....	Sept. 30.
Pastores.....	P. R. R. Sept. 25.....	Oct. 1.
Zacapa.....	U. F. C. Sept. 27.....	Oct. 4.
.....	U. F. C. Sept. 30.....	Oct. 7.

## NEW ORLEANS TO CRISTOBAL-COLON.

Abangarez.....	U. F. C. Sept. 8.....	Sept. 15.
Parissima.....	U. F. C. Sept. 11.....	Sept. 16.
Atenas.....	U. F. C. Sept. 15.....	Sept. 22.
Cartago.....	U. F. C. Sept. 18.....	Sept. 23.
Turrialba.....	U. F. C. Sept. 22.....	Sept. 29.

## CRISTOBAL-COLON TO NEW ORLEANS.

Heredia.....	U. F. C. Sept. 16.....	Sept. 21.
Abangarez.....	U. F. C. Sept. 16.....	Sept. 23.
Parissima.....	U. F. C. Sept. 23.....	Sept. 28.
Atenas.....	U. F. C. Sept. 23.....	Sept. 30.

# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, SEPTEMBER 22, 1915.

No. 5.

## The Canal Record

Official publication of The Panama Canal.

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All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Sent between July 1 and October 1, 50 cents; between October 1 and January 1, 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Further Movement of Slides at Culebra.

Further movement of the slides at Culebra, notably that on the east bank of the Cut, directly north of Gold Hill, on Saturday and Sunday, September 18 and 19, caused another complete suspension of Canal traffic, which has lasted since that time. The 15-yard dipper dredge *Paraiso*, which had been withdrawn from the slides earlier in the week for repairs, was returned to service on Saturday, September 18, and excavation in the blocked section is being pushed by means of five dredges, working 24 hours a day. A description of the slides at Culebra, which are causing all the trouble at present, was published in THE CANAL RECORD of last week.

### Canal Terminal Office Building at Balboa.

Authority has been granted for the erection of a 3-story concrete building alongside the new Balboa docks to serve as a Canal terminal office building. It will house the offices of the Captain of the Port on the third floor, offices of the receiving and forwarding forces of the Panama Railroad on the first floor, and the second floor will be available for lease to the representatives of steamship lines, or other maritime interests, or for the use of other departments of The Panama Canal which may require offices on the water front.

The projects call for between 3,000 and 3,600 square feet of floor space on each floor, exclusive of porches. The preliminary sketches being drafted in the office of the Canal Architect provide for a building 146 feet long by 42 feet wide, over all, with porches along the front and ends. The general features of construction will harmonize with those of the shops office building, which

is now housing the offices of the Port Captain, customs officers, and representatives of the Supply Department, in addition to the offices of the Mechanical Division, for which the building was erected. The Canal terminal office building is to be situated near the head of the slip between the quay wall (Dock 16) and Pier 18, and will be readily accessible to shipping. The wooden buildings near the end of the steel pier, occupied now by Panama Railroad terminal offices and steamship offices, will probably be removed by May 1, 1916.

The construction of a similar terminal building at Cristobal is under consideration.

### No Wharfage Charges for Taking Oil.

Directions have been issued that no charge for wharfage shall be made against vessels tying up at the oil crib at Balboa for the sole purpose of taking oil, whether from the tanks of The Panama Canal or from those of private corporations. This is in line with the previous order that no charges should be made for wharfage on vessels tying up to take on coal or other supplies from The Panama Canal.

### Return of the "Newport".

The United States Navy gunboat *Newport*, in use as a training ship for the school conducted by the State of New York for the instruction of young men in the duties of officers in the merchant marine, arrived at Balboa on September 14 for transit of the Canal. The *Newport* passed through the Canal on May 30 on the outward voyage of the summer practice cruise, and cleared for Honolulu. She has returned to the Canal from San Diego, and will make her way to New York to remain there for the winter session of the school. The work of the school to which the *Newport* is attached is similar to the work of the Massachusetts Nautical Training School, which was described in THE CANAL RECORD of July 7, 1915, following the visit of its training ship, the Navy gunboat *Ranger*, to Cristobal.

### Meter to Measure Direction as Well as Velocity of Currents.

For the more accurate determination of currents which may be set up in various parts of the Canal, as by the inflow of rivers into the lakes, the operation of the spillways, and the operations during lockages, the Section of Hydrography and Meteorology has secured a current meter which, in addition to recording the velocity of a current at any depth, as the usual meters do, will indicate the direction of the current at any depth. By the use of this instrument it is possible to secure data on every component of a current, and by charting them, to attain a very accurate idea of the aggregate effect of any current to which vessels are liable to be subjected. The instrument was tested last week from the track at the meter rating station on an arm of Mira-

flores Lake, adjoining Pedro Miguel, and will be used shortly in observations on the currents set up in Gatun Lake, in the area between the south end of Gatun Locks and the nearest island, Gurapo, by the flow of water through the spillway of the lake.

The essential difference between this instrument and those previously in use on the Canal Zone is the direction indicator. Within the central part of the submerged meter (which indicates the velocity of the current by the revolutions of a propeller) is a compass, the needle of which is free to assume the magnetic meridian when released through an electric current. An indicator, in the equipment which is kept above water, is operated by clockwork, which, in turn, is in synchronous connection with a clock attached to the true compass within the meter. Before the meter is submerged the compass needle and the needle of the indicator are set at zero on the azimuth scale. When the compass needle is released it swings to north, operating thereby the clockwork, which swings the indicator needle through the same arc.

The direction-current meter will measure accurately currents running between .2 foot per second and 30 feet per second, that is, from 720 feet to 20 miles an hour. Expressed in knots, this means from one-eighth of a knot to 17.8 knots.

### Mooring Station Opposite Dock 13, Cristobal.

A dolphin mooring station has been established on the west side of the French canal, opposite Dock 13 at Cristobal, as a convenient tying-up place for barges, tugs, and steamers, and principally to avoid congestion at Dock 13. The dolphins extend for a distance of about 900 feet, and are driven approximately 100 feet apart. The station is to be extended 400 feet when more piles are available. The dolphins have been set well clear of the main dredged channel, which is about 35 feet deep.

While attempting to straighten one of the dolphins at the mooring station at Gamboa, on Thursday, September 16, a crane barge operated by the Marine Division pulled beyond its capacity, which resulted in breaking some of the holding-down bolts, overturning the crane proper, and nearly capsizing the barge. The equipment was withdrawn on the following day for repairs, and is now at the Cristobal dry dock shops.

### Shipment from the Philippines.

The British steamship *Calliope* arrived at Balboa in the morning of Thursday, September 16, from the Philippine Islands on the way to New York. Her cargo consists of 5,000 tons of sugar from Iloilo, 2,000 of which were consigned to New York, with 3,000 subject to orders on delivery, and 625 tons of hemp and 125 tons of cotton, from Cebu for New York. This was the first voyage of the *Calliope* through the Canal.

## Motor Bus Service.

The Panama Railroad has issued for general distribution time table No. 1 for the motor bus service between the Hotel Tivoli and Fort Amador, by way of Balboa Heights and Balboa. The trip over the course in either direction requires 30 minutes, or exactly one hour for a round trip. Three cars, circulating over the course, make possible a departure from any point in either direction every 20 minutes. Cars leave the Administration Building for Ancon, for instance, regularly at three minutes after the hour, 23 minutes after, and 43 minutes after, once the cars have been placed on the run from the garage in the morning.

The cars were placed in operation on June 25. During June, 1,273 fares were collected; during July, 16,341; and during August, 18,583, making the total to September 1, amount to 36,197.

## Wrecking Train Engine in General Service.

Locomotive No. 217, formerly used exclusively for hauling the wrecking crane outfit, has been turned in for general service and hereafter when an engine is required for the wrecker it will be secured from the roundhouse. It is believed that this arrangement will not only add a serviceable locomotive to the stock in regular use but will effect considerable economies in the operation of the wrecking outfit. The charge for the service of the wrecker with full crew, to any division requiring its use, is \$20 per hour.

## Bronze Numerals and Letters for Signs on Concrete Buildings.

A quantity of bronze numerals, 3½ inches high, has been ordered from the United States for use in numbering the concrete buildings of The Panama Canal and the Panama Railroad Company at Balboa and Ancon. Each separate number will be cast with lugs on the back, and will be attached to the concrete wall surface by gouging out holes into which to insert the lugs, then filling the surrounding spaces with stucco plaster to enclose them. The numerals have flat surfaces.

This step is in harmony with a recent decision to use hereafter bronze letters and numerals for signs on the buildings, instead of figures in raised concrete, such as were used on the new stations of the Panama Railroad at Balboa Heights and Corozal, or the indented figures used on the hydroelectric station and the transmission line substations, or the front of the Administration Building, for example. The bronze letters and numerals are cheaper, more durable, and capable of being removed without being destroyed.

At the same time, some of the hand-painted signs, as those for the Balboa dispensary, and for other permanent buildings to be constructed, will be supplanted by bronze signs. The lettering most likely to be used is of a type designated as Renaissance, a bold vertical letter showing the influence of the Roman style, but modified by that spirit of a lighter touch which is characteristic of the architecture of the Renaissance.

## Obituary.

Mrs. Mary Fink, a widow, 76 years of age, died at Ancon Hospital on September 5. She was a native of the United States, lived formerly at Rochester, Pa., and had been making her home with her son, Joseph Fink, an employee of the Mechanical Division, at Balboa.

## Local Seismic Disturbances.

Slight earthquake tremors were recorded during the past week by the seismographs at Balboa Heights, occurring on September 17 and 19. The amplitude of movement was small in each case, and the tremor of September 19 seems to be the only one which people felt in the Canal Zone. These movements appear to be recurrences of the disturbances in Los Santos Province of the Republic of Panama, about 120 miles to the southwest of Balboa, which were felt frequently in the

latter part of 1913 and the first months of 1914.

A private branch telephone exchange has been installed in the office of the Captain of the Port of Cristobal. The connections through this exchange reach all the executive and clerical branches of the office, and the boathouse and signal station. The number of the exchange is 70, Colon, and an operator will be on duty at it day and night.

## LABOR FORCE AND QUARTERS IN AUGUST.

The force report of August 25, 1915, shows the actual working force of The Panama Canal on that date to have been 20,803; of the Panama Railroad, 4,261; and of contractors, 360, a total effective working force of 25,424. This is a decrease of 1,481 from the force on July 21, which was 26,905; is 1,473 less than the 26,897 employed on June 23; is 1,010 less than the 26,434 employed on May 26; but is 609 more than the force on April 21, which was 24,815. As compared with the July report, the report for August 25 shows a decrease of 25 gold employees, though the force of the contractors increased by five. The silver force decreased by 1,456, including 11 among the forces of the contractors.

The total gold force on the Isthmus, composed almost exclusively of white Americans, was 3,596, a decrease of 25 from the preceding month; an increase of three over the 3,593 employed on June 23; a decrease of 19 from the 3,615 employed on May 26; but an increase of 235 over the 3,361 employed on April 21. The gold force employed on the Isthmus on August 25, amounting to 3,596, was distributed as follows: The Panama Canal, 3,172; the Panama Railroad, 334; contractors, 90. Detailed figures of the employment of the Canal force on the Isthmus follows:

DEPARTMENT OR DIVISION.	SILVER EMPLOYEES*															Total silver.	Total gold.	Grand total.	
	Artisan.						Laborers.												
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Euro- pean.	16 cents.			10 cents.	7 cents.	5 cents.					
									16 cents.	13 cents.	10 cents.								
Operation and Main- tenance; locks & office	477	15	3	33	122	12	—	3	16	59	—	—	—	—	—	740	179	919	
Terminal Construct'n	400	—	71	255	667	188	33	71	363	473	2	21	—	—	—	2,544	299	2,843	
Building Division	98	6	346	544	630	12	—	—	325	212	2	9	—	—	—	2,184	184	2,368	
Electrical	85	2	33	49	80	46	—	—	1	—	—	—	—	—	—	1	297	157	454
Municipal Eng.	284	—	58	173	247	205	98	17	284	894	9	44	—	—	—	2,513	87	2,600	
Dredging	1,692	1	10	26	113	28	—	1	83	44	—	3	2,000	—	—	3,008	208	3,216	
Mechanical	156	6	75	115	584	599	—	13	49	158	6	6	1,767	816	—	2,583	238	2,821	
Marine Division	184	—	—	—	—	—	—	—	131	146	—	—	—	—	—	184	55	239	
Fortifications	66	—	37	75	160	16	1	—	131	146	—	2	534	90	724	—	63	787	
General Construct'n	3	—	—	—	1	1	—	1	9	44	—	1	62	1	—	62	1	63	
Total.	3,447	30	633	1,270	2,604	1,107	137	106	1,260	2,030	19	87	12,725	2,176	14,901	—	—	—	
Supply; main office	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14	14	—
Commissary	810	—	4	6	16	15	263	3	—	133	—	—	1,250	157	1,407	—	—	—	
Subsistence	438	—	2	—	—	—	—	—	—	—	—	—	448	25	473	—	—	—	
Quartermaster	786	58	71	67	80	—	44	49	218	863	—	8	2,214	73	2,287	—	—	—	
Accounting	22	—	—	—	—	—	—	—	—	—	—	—	22	204	226	—	—	—	
Health	389	4	2	4	16	—	6	—	20	332	10	19	848	176	1,024	—	—	—	
Executive	119	2	1	2	—	—	—	—	—	—	—	—	124	347	471	—	—	—	
Panama Railroad	318	142	63	182	246	782	1,241	13	472	414	12	12	3,927	334	4,261	—	—	—	
Contractors	20	—	5	39	25	—	101	1	49	29	—	1	270	93	360	—	—	—	
Grand total.	6,349	202	781	1,572	2,987	1,910	1,787	302	2,019	3,851	41	127	21,828	3,596	25,424	—	—	—	
Month previous	6,341	233	765	1,564	3,445	2,116	2,216	218	2,456	4,057	34	139	23,284	3,621	26,905	—	—	—	
Changes	+8	-31	+16	+8	-158	-206	-429	-16	-437	-206	+7	-12	-1,456	-25	-1,481	—	—	—	

\*The wages are stated in United States currency.

## QUARTERS.

A summary of the occupation of Government quarters on the Isthmus on August 31, 1915, is given below:

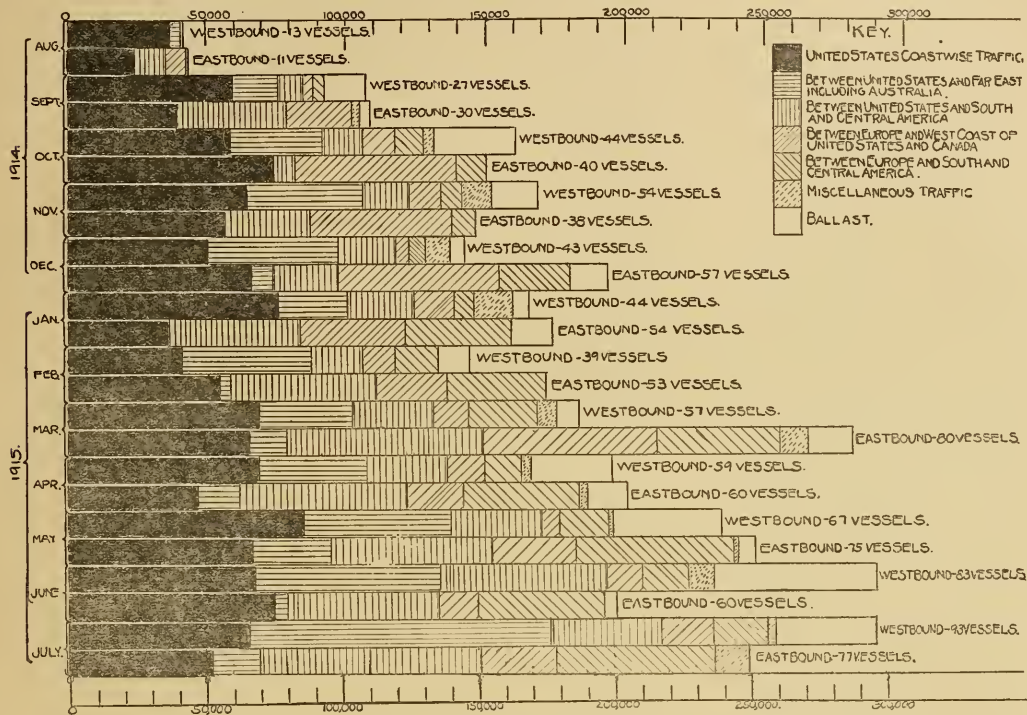
PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa	877	225	192	127	7	12	1,582	491	634
Ancon	948	419	335	.....	.....	.....	252	18	.....
Corozal	170	133	114	13	1	2	310	38	53
Pedro Miguel	203	108	139	10	.....	.....	224	35	44
Paraiso	287	79	95	99	6	18	391	108	152
Culebra	17	9	19	3	2	7	414	278	323
Gambou	19	3	5	.....	.....	.....	6	19	34
Gatun	228	171	219	20	3	6	715	105	107
Cristobal	992	339	403	72	.....	.....	1,45	184	390
Total.....	3,741	1,486	1,521	344	19	45	4,934	1,276	1,737

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 15 Asiatics. (3) Includes 14 American negroes, 70 Colombians and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores. (5) Includes 33 Panamanians. (6) Includes Empire, Las Cascadas, and Bas Obispo. (7) Includes 12 Panamanians. (8) Includes Colon Beach and Colon Hospital. (9) Includes 20 East Indians, 16 colored American citizens, and 116 Panamanians.



## CHART OF NET TONNAGE OF TRAFFIC THROUGH THE CANAL.

The chart published below shows graphically the relative tonnage of ship movements through the Canal over the five great routes which constituted the course of over 97 per cent of the laden vessels passing through the Canal to August 1, 1915. The remainder of the traffic is over miscellaneous routings and of vessels in ballast, the relative proportions of which are also shown. The chart shows the aggregate net tonnage (Panama Canal measurement) of vessels moving in each direction, from Atlantic to Pacific and from Pacific to Atlantic, over each route every month. The abscissas at top and bottom of the chart indicate net Canal tonnage, in units of 10,000, and all the parts are drawn to scale.



Canal Net Tons.

## Electrical Household Appliances.

The commissary stores will place on sale shortly a stock of electrical household appliances, including flat irons, toasters, disc stoves, coffee pots, table grills, and water heaters.

The goods will be sold in sealed packages, in the form in which they are shipped from the United States. Each piece of metal is coated with vaseline and packed with care by the shippers, but the commissary branch of the Supply Department will not guarantee the equipment, and no piece can be exchanged after the package has been opened. In cases of complaint, the Depot Commissary will take the matter up with the manufacturers, if desired, with a view to adjusting the matter. Samples of the several items will be exhibited for inspection at the Ancon, Balboa, and Cristobal stores. Orders may be placed in any of the line stores, if the customer is willing to accept the unopened package.

The Electrical Division will attend to the installation of the appliances without charge, and will furnish extra cord where necessary. There are regular charges for the current used by these appliances, and for this reason and because of the danger of fire when the appliances are used on ordinary wiring or when unauthorized persons make installations,

occupants of Government quarters are forbidden, by the provisions of circular No. 676-6, of August 4, 1915, to make additions or changes in their wiring without the authority of the Electrical Engineer. The rates on appliances are based on the cost of the estimated consumption. At the present time there is a flat rate of 60 cents per month for unlimited use of a flat iron, and 45 cents per month for any of the other appliances noted

in the first paragraph. By metering and observation the engineers of the Electrical Division are arriving at closer approximations of the power used by the various appliances in ordinary use.

Sealed proposals will be received at the office of the Depot Commissary, Cristobal, until 4 p. m., October 11, 1915, for furnishing 45,000 pounds of green coffee.

## Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Barratt, Nathaniel.....	33643	Barbados.....	Panama.....	Mun. Eng.....	Sept. 13, 1915
Blackman, Joseph.....	87856	Barbados.....	Camp Biedr.....	P. R. R.....	Sept. 14, 1915
Gabely, Edgar.....	89478	Guadeloupe.....	Cristobal.....	P. R. R.....	Sept. 14, 1915
Hudson, Samuel.....	50404	Panama.....	Panama.....	Term. Const.....	Sept. 14, 1915
Knott, Esau.....	72961	Jamaica.....	Colon.....	P. R. R.....	Sept. 15, 1915
Pinder, Edward W.....	89477	Trinidad.....	Colon.....	P. R. R.....	Sept. 12, 1915
Sheriff, David.....	33684	Jamaica.....	Miraflores.....	Mun. Eng.....	Sept. 6, 1915
Taylor, Albert.....	41165	Birds.....	Gatun.....	O. & M.....	Sept. 15, 1915

The estates of the abovementioned deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once.

# OPENING OF ZONE SCHOOLS.

## Arrangement of Grades, Hours, and Transportation for Coming Sessions.

The public schools of the Canal Zone will open on Monday, October 4, 1915. The Superintendent of Schools has issued a bulletin, setting forth conditions, as follows:

All children residing in the Canal Zone, whether employees or nonemployees, and children of American employees of The Panama Canal, Panama Railroad, United States Army and Navy, and other departments of the United States Government, residing in Panama or Colon are entitled to free school privileges. No child will be admitted, however, who will not be six years old on or before February 1, 1916.

Schools for white children will be opened at the following places, with instruction in the grades indicated:

Balboa.....	Grades 1 to 12, inclusive.
Ancon.....	Grades 1 to 8, inclusive.
Corozal.....	Grades 1 to 3, inclusive.
Pedro Miguel.....	Grades 1 to 8, inclusive.
Paraiso.....	Grades 1 to 3, inclusive.
Empire.....	Grades to be arranged.
Gatun.....	Grades 1 to 8, inclusive.
Cristobal.....	Grades 1 to 10, inclusive.
Colon Beach.....	Grades 1 to 4, inclusive.

The dividing line between the Ancon and Balboa school districts extends between the nurses' quarters and the railroad tracks, passing between houses No. 592 and No. 594. Grade pupils who live in houses Nos. 569, 570, 571, 572, 574, 576 and 592, and on the Ancon side of these houses, will attend the Ancon school; those who live in houses Nos. 201, 202, 593, to 604, and on the Balboa side of these houses, will attend the Balboa school.

Pupils of Grades 4 to 8, inclusive, who live in Corozal will attend the Balboa school.

Pupils of Grades 4 to 8, inclusive, who live in Paraiso will attend the Pedro Miguel school.

Grade pupils who live between Gatun and New Culebra will attend the Cristobal school.

Schools for colored children who live in the Canal Zone will be opened at the following places:

La Boca.....	Grades 1 to 8, inclusive.
Paraiso.....	Grades 1 to 8, inclusive.
Gatun.....	Grades 1 to 8, inclusive.
Cristobal.....	Grades 1 to 8, inclusive.

The children of employees not living in the Canal Zone and not citizens of the United States are not entitled to Canal Zone school privileges.

The white schools will open and close according to the following schedule:

School	A. M.	P. M.
Balboa (high and elem.)	8.00-11.00	1.00-3.00
Ancon.....	8.00-11.00	1.00-3.00
Corozal.....	8.00-11.00	1.00-3.00
Pedro Miguel.....	8.00-11.00	1.00-3.00
Paraiso.....	8.30-11.30	12.30-2.30
Empire.....	(to be arranged).	
Gatun.....	8.00-11.00	1.00-3.00
Cristobal (high and elem.)	9.00-12.00	1.00-3.00
Colon Beach.....	8.00-11.00	1.00-3.00

Wherever practicable, the first grade in all white schools will dismiss 30 minutes earlier than the other grades, and the second and third grades 15 minutes earlier, both morning and afternoon.

The sessions in all colored schools will be from 8 to 11 a. m., and from 1 to 3 p. m.

The Corozal pupils who attend the Balboa school will take the train leaving at 7.39 a. m., and return on the train leaving Balboa at 3.10 p. m.

The Paraiso pupils who attend the Pedro Miguel school will take the train leaving at 7.45 a. m. and 12.45 p. m., and return on the train leaving Pedro Miguel at 11 a. m. and 3 p. m.

Grade and first and second year high school pupils who live between New Culebra and Gatun will take the train arriving at Cristobal at 8.55 a. m., and return from Cristobal on the 5.10 p. m. train.

First and second year high school pupils who live in Gatun will take the 8.40 a. m. train for Cristobal, and return on the 5.10 p. m. train.

All high school pupils who live between Balboa and Las Cascadas will take the train arriving at Balboa at 7.45 a. m., and return on the train leaving Balboa at 3.10 p. m.

Third and fourth year high school pupils who live between New Culebra and Cristobal will take the train arriving at Balboa at 9 a. m., and return on the train leaving Balboa at 5.10 p. m.

High school pupils who live in Ancon may take the labor train leaving Panama at 7.45 a. m., and return on the labor train leaving Balboa at 3.23 p. m.

The train arriving at Colon at 8.55 a. m. will make a special stop opposite the Cristobal commissary for the convenience of the pupils.

Requests should be made to the office of Mr. A. R. Lang, Superintendent of Schools, Balboa Heights, immediately for railroad transportation for children living in communities where schools of appropriate grades, or brake service, are not provided.

The above schedules are subject to such changes as conditions may warrant.

## Red Cross Statement.

The following is the financial statement of the Canal Zone Chapter, American National Red Cross, for the months of April, May, and June, 1915. It covers the greater part of the special donations and disbursements for the victims of the fire which occurred in Colon on April 30, 1915.

### RECEIPTS.

April 1, Balance on hand April 1, \$3,546.34	
April 16, Reimbursement by National Red Cross account amount advanced	
Louis de La Pena.....	100.00
April 30, Proceeds of ball, addition.....	25.00
Subscriptions and Donations for Relief of Sufferers.	
May 1, Brig. Gen. Geo. W. Goethals.....	\$20.00
May 3, Cristobal Union Sunday School.....	25.00
May 4, Red Cross nurse No. 3988	1.00
Canal Zone Humane Society.....	52.15
May 6, Knights of Columbus.....	100.00
Altar Guild, Christ Ch'ch	46.65
British Consul.....	50.00
Colon Humane Society.....	50.00
Employees, Mechanical Division, Balboa.....	5.00
Employees, old Administration Building, Ancon	12.50
Post-office employees, Administration Building.....	11.00
Ehrman & Co., Panama.....	25.00
De Sola, Panama.....	15.00
Maduro & Co., Panama.....	25.00
Heurtematte, Panama.....	50.00
José Misteli, Panama.....	25.00
Cardoze & Pereira, Panama.....	15.00
E. Lyons, Panama.....	50.00
Piza, Piza & Co.....	25.00
Panama Agencies Co.....	50.00
Royal Mail Steam Packet Co.....	100.00
Union Club, sale tickets for Casino dance.....	200.00
Panama Railroad employees.....	13.50
University Club, sale of confetti at Casino dance	56.35
Sojourners Lodge, Cristobal.....	100.00
May 11, Century Club, sale confetti at Casino dance..	73.50
Subscriptions received by Mrs. Porras and Lady Mallet.....	566.50
May 12, C. D. Christie.....	10.00
Union and Tivoli Club, sale confetti, Casino dance.....	28.20

C. G. Morton.....	1.00
May 14, Sale Casino tickets, 29th Infantry.....	12.00
Panama Canal Baseball League.....	48.56
May 15, Canal Zone Police, Balboa.....	24.00
Brig. Gen. C. R. Edwards.....	12.00
May 17, Local chairman, committee, Corozal.....	85.50
Ancon Hospital.....	23.00
Subscriptions received by Mrs. Porras and Lady Mallet.....	288.20
Employees of Mechanical Division.....	120.00
R. J. Stoddard.....	1.00
Panama R. R. employees, Balboa docks.....	23.50
May 21, Printers' Social Club, Mt. Hope.....	10.50
May 24, Cristobal School.....	91.79
Ladies' Aid Society, Cristobal.....	101.30
May 25, J. M. Billingslea.....	1.00
Panama Railroad, for relief of families of Panama Railroad dock laborers.....	100.00
Simons & Hart.....	19.30
May 28, Employees of the Administration Building.....	99.50
May 29, Panama Canal Baseball League.....	2.50
Citizens of Paraiso.....	240.10
May 30, Wesleyan Ch'ch.....	20.00
Ladies' Aid Society, Colon Employees of Quartermaster's Department, Ancon.....	14.50
June 5, French consul.....	192.00
Ladies' Aid Society, Corozal.....	5.00
June 7, Boy Scouts, One and Two Patrol.....	10.00
Employees of Mechanical Division, Balboa.....	24.50
June 12, Subscriptions received by secretary, Cristobal Y. M. C. A.....	3.45
Reimbursement, account rations furnished enlisted men.....	30.93
Mechanical Division.....	9.60
June 15, Collections received by Mrs. Porras and Lady Mallet.....	193.62
June 26, Sale Casino tickets, University Club.....	196.00
Total receipts.....	\$7,477.44

### DISBURSEMENTS.

April 12, Relief of American family	20.00
April 17, Loan to H. M. B. Moen	50.00
April 23, Loan to American.....	5.00
May 1, Loan to destitute American.....	10.00
May 4, Relief of American family	50.00
May 14, Miscellaneous disbursement of fire sufferers.....	20.00
Commissary books, for relief of fire refugees.....	45.00
Pencils and index cards.....	2.19
May 20, Commissary books, account of fire refugees.....	45.00
Miscellaneous disbursements, account of fire.....	3.00
Relief of destitute American seaman.....	5.00
May 21, Relief of Jamaican woman and five children.....	10.00
Relief of American and family.....	20.00
May 24, Relief of American loan.....	2.00
Relief of American, woman.....	2.00
Relief of Spanish woman and children.....	15.00
June 28, Cash advanced to make first payments on sewing machines and charcoal braziers, fire refugees.....	50.00
Stamps.....	.50
Relief of destitute seaman.....	5.00
June 2, Material furnished by Health Department for refugees.....	1.00
June 10, Relief of Jamaican woman.....	10.00
June 15, Supplies furnished fire refugees during May, 1915 cancelled and amount refunded in July.....	1,815.71
June 23, Loan to American.....	50.00
Total disbursements.....	\$2,263.40
July 1, Balance on hand.....	5,214.04

Approved:

C. A. McILVAINE,  
Chairman.

T. L. CLEARY,  
Treasurer.



## OFFICIAL CIRCULARS.

## Quarters for Families With Five or More Children.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., September 14, 1915.

CIRCULAR NO. 627-10:

1. Families having five or more dependent children living with them will be given preference over all other applicants for transfers to certain designated houses in each district. The numbers of these houses will be on file with the district quartermaster in each district and list of same will be posted with lists of applications.  
2. Dependent children under this rule will not include sons more than 18 years of age in normal health nor sons or daughters who are working and earning \$40 per month or more.

CHESTER HARDING,  
Acting Governor.

## Travel Leave.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., September 8, 1915.

CIRCULAR NO. 602-15:

In cases where termination of employment is not due to fault or volition of the employee, travel leave will be allowed, provided it has already been granted. This changes the rule heretofore in effect, allowing travel leave only after an employee has reported for duty at the termination of his leave.

CHESTER HARDING,  
Acting Governor.

## Acting Superintendent of Pacific Locks.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,

BALBOA HEIGHTS, C. Z., September 17, 1915.

To all concerned—During the absence on leave of Mr. F. C. Clark, effective August 17, Mr. R. H. Whitehead will perform the duties of the superintendent of the Pacific locks, with headquarters at Pedro Miguel.

JAY J. MORROW,  
Assistant to the Engineer of Maintenance.

Approved:

CHESTER HARDING,  
Acting Governor.

## Appointments in Car Shop at Balboa.

THE PANAMA CANAL,  
MECHANICAL DIVISION,

BALBOA HEIGHTS, C. Z., September 14, 1915.

To all concerned—Effective September 15, 1915, Mr. H. T. Hart is appointed foreman of car shop, vice Mr. C. O. Simonson, resigned.

Mr. I. M. Ingram is appointed assistant foreman of car shop in charge of wood car repairs, vice Mr. H. T. Hart, promoted.

Mr. Geo. S. Woods is appointed shop inspector, Balboa car shops, vice Mr. I. M. Ingram, promoted.

J. J. EASON,

Assistant Superintendent, Mechanical Division.

Approved:

D. C. NUTTING,  
Superintendent, Mechanical Division.

## Teachers' Meeting.

THE PANAMA CANAL,  
DIVISION OF SCHOOLS,

BALBOA HEIGHTS, C. Z., September 20, 1915.

To all teachers—The first meeting of the teachers will be held on Friday, October 1, in the Balboa white school building. The white teachers will meet at 9 a. m., and the colored teachers at 2 p. m.

A. R. LANG,  
Superintendent of Schools.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., September 20, 1915.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon request of the addressees:

Baker, Mrs. H. W. Mendez, E. J.  
Berry, Raymond A. Morrison, Guy  
Blanton, J. A. Nollen, Mrs. Math.  
Boehncke, George (Co. G) Perog, George (Infantry)  
Brown, Sam B. Preston, George  
Clemens, Charles. Renton, Asa J.  
Cofina, T. W. J. Schlenz, John  
Gaylord, J. L. Schmidt, Mrs. W., c/o T. W.  
Shanahan, Dr. L. P. P.  
Klein, Robert (paper) Shaw, Ernest T.  
Kjellander, Arvid Slolusky, Alexander  
Knights, Charles R. Spruce, David  
Lawrence, Geo. W. Thompson, Mrs. M.  
Learned, Mrs. George L. Von Teuber, Dr.  
Lewis, Elmer L. Williams, R. A.  
Lord, Geo. E. Wollford, Mrs. M. E.

## COMMISSARY DEPARTMENT.

## Telephone Arrangements in Depot Commissary's Office.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., September 15, 1915.

BULLETIN NO. 344:

To all concerned—A private branch exchange has been installed and is in operation in the office of the Depot Commissary (phone 285) through which all employees of the wholesale depot and Cristobal commissary should be called. The several telephones on the board are as follows:

7	Back order clerk.....	L. W. Kelo
14	Bakery.....	Wm. Beece
26	Books and shoes, wholesale.....	E. H. Carter
7	Cashier.....	Miss M. P. Burgoon
20	Chemical laboratory.....	L. A. Smith
4 & 6	Chief clerk.....	C. A. Gilmartin
4 & 6	Claim clerk.....	D. Buckley
17	Cold storage, wholesale meats.....	W. H. Campbell
21	Cold storage, cutting room.....	W. J. Connelly
19	Cold storage, office.....	H. Dundas
23	Cristobal com'sy, order room.....	
24	Cristobal com'sy, office.....	
4 & 6	Depot commissary.....	Benj. L. Jacobson
13	Dry goods, wholesale.....	J. T. Coughlin
3	File clerk.....	H. Jones
15	Groceries, wholesale.....	R. A. Brayton
11	Hardware, wholesale.....	O. F. Sonneman
2	Ice accounts, personal.....	Miss F. D. Frost
7	Ice accounts, Government.....	Miss M. P. Burgoon
22	Ice cream plant.....	A. Beard
29	Industrial laboratory.....	L. A. Smith
25	Inspector, commissary.....	A. Diamond
25	Inspector, commissary.....	H. S. King
16	Laundry.....	H. S. Newcomb
1	Order clerk.....	R. V. French
5	Order desk.....	(formerly No. 163)
18	Power plant.....	J. Michel and P. W. Reese
10	Price clerk.....	H. Leonard
25	Property clerk.....	J. V. Ware
12	Shipping section.....	L. C. Turner
8 & 9	Stock record clerk.....	B. E. McKeever

The switchboard will be in operation from 7 a. m. to 6 p. m. continuously on ordinary working days and from 8 a. m. to 1 p. m. on Sundays and holidays. At other hours night connections will be put up for the following telephones only, which can be called through Cristobal exchange, by the numbers shown:

285	Depot Commissary.....	(Same as No. 4)
286	Order clerk.....	(Same as No. 5)
287	Shipping section.....	(Same as No. 12)
288	Bakery.....	(Same as No. 14)
289	Groceries, wholesale.....	(Same as No. 15)
290	Cold storage, wholesale meats.....	(Same as No. 17)
291	Power plant.....	(Same as No. 18)
292	Cold storage, office.....	(Same as No. 19)
293	Cristobal com'sy, order room.....	(Same as No. 23)
294	Cristobal commissary, office.....	(Same as No. 24)

BENJ. L. JACOBSON,  
Depot Commissary.

The following is a list of retail prices of cold storage provisions which will be effective September 23, 1915.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH MEATS.		Price.
Mutton—Stewing, per pound.....	9	
Shoulder, trimmed (not less than 5 pounds) per pound.....	12	
Leg (8 to 10 pounds), per pound.....	19	
Short cut, chops, per pound.....	23	
Shoulder, chops, per pound.....	17	
Lamb—Stewing, per pound.....	12	
Shoulder, trimmed, per pound.....	15	
Leg (5 to 8 pounds), per pound.....	24	
Chops, per pound.....	29	
Chops, shoulder, per pound.....	20	
Veal—Stewing, per pound.....	12	
Shoulder, for roasting (not under 5 lbs.), per pound.....	15	
Chops, shoulder, per pound.....	20	
Chops, per pound.....	30	
Loins, for roasting, per pound.....	30	
Cutlets, per pound.....	36	
Beef—Suet, special, per pound.....	33	
Soup, special, per pound.....	7	
native, per pound.....	5	
Soup, bones, special, per pound.....	23	
Stew, special, per pound.....	11	
native, per pound.....	8	
Plate, special, per pound.....	12	
native, per pound.....	13	
Chuck roast, special (3 lbs. and over), per pound.....	12	
Chuck roast, native (3 lbs. and over), per pound.....	12	
Rib roast, second cut (not under 3½ pounds), special, per pound.....	16	
Rib roast, second cut, native (3½ pounds		

		Price.
and over), per pound.....		9
Rib roast, first cut (not under 3 pounds), special, per pound.....		19
Rib roast, first cut, native (3 pounds and over), per pound.....		11
Pot roast, special, per pound.....		20
native, per pound.....		12
Rump roast, special, per pound.....		20
native, per pound.....		12
Porterhouse roast, special, per pound.....		22
choice, per pound.....		31
Steak, chuck, special, per pound.....		16
native, per pound.....		13
Round, bottom, special, per lb.....		13
native, per lb.....		9
Round, top, special, per pound.....		15
native, per pound.....		10
Sirloin, special, per pound.....		20
native, per pound.....		12
Sirloin, choice cut, special, per pound.....		23
Sirloin, choice cut, native, per lb.....		16
Rump, special, per pound.....		20
native, per pound.....		12
Porterhouse (not less than 14 pounds), special, per pound.....		23
Porterhouse (not less than 14 pounds), choice, per pound.....		34
Porterhouse (14 pounds and over), native, per pound.....		17
Porterhouse, short, special, per pound.....		20
Porterhouse, short, choice, per pound.....		28
Porterhouse, short, native, per lb.....		12
Tenderloin, special, per pound.....		35
Tenderloin, native, per pound.....		25

NOTE—"Choice beef" is kept on hand in the cold storage plant at Cristobal. Orders placed with commissary storekeepers before 11 a. m., will be shipped for delivery on the following morning.

Pork—Hams, fresh, per pound.....	\$23
Shoulders, fresh, per pound.....	\$19
Loins, chop, or roast, per pound.....	18
Spare ribs, per pound.....	12
Pigs' feet, fresh, per pound.....	4
Pigs' heads, fresh, whole.....	83
Sausage, home made, per pound.....	23
Ox tails, per pound.....	8
Beef tongue, native, whole, per pound.....	20

## MISCELLANEOUS.

Almonds, shelled, per pound.....	*52
Brains, calves', per pound.....	7
Calves' heads, each.....	*78
Kidneys, beef, per pound.....	10
Oysters, fresh, per pound.....	30
Peel, citron, per pound.....	*21
Peel, lemon, per pound.....	*17
Peel, orange, per pound.....	*19
Walnut, heat, per pound.....	25
Livers—Beef, per pound.....	9
Calves', per pound.....	24
Steak—Hamburger, package.....	17
Hamburger, 20-pound container, per pound.....	14
Sausage—Bologna, per pound.....	11
Frankfurter, per pound.....	12
Frankfurter, imported, per pound.....	11
Lieberwurst, per pound.....	8
Pork, per pound.....	13
Pork, home made, per pound.....	19
Sweetbread, beef, per pound.....	14
Butters, fancy, each.....	5
Bluefish, per pound.....	14
Codfish, dried, per pound.....	11
Haddock, smoked, per pound.....	19
Halibut, fresh, per pound.....	*9
Salmon, fresh, per pound.....	11
Whitefish, smoked, per pound.....	*17
Yeast, per cake.....	2
Pates de foies gras, per jar.....	67

## CURED AND PICKLED MEATS.

Beef—Corned, No. 1, per pound.....	15
No. 2, per pound.....	12
Ham—Real York and Cumberland, per pound.....	43
Genuine Westphalia, per pound.....	50
Mince, "Bologna style," per pound.....	12
Shoulders, sugar cured, boneless, whole, per pound.....	14
Half, per pound.....	21
Sliced, per pound.....	25
Whole, boiled, per pound.....	23
Half, boiled, per pound.....	27
Sliced, boiled, per pound.....	33
Bacon—Breakfast, sliced, per pound.....	27
Whole, pieces, per pound.....	26
Strips, whole, per pound.....	20
Sliced, jar, per pound.....	30
Sliced, tins.....	27
Squares, whole, per pound.....	10
Ham, lunch, per pound.....	40
Pork, bellies, per pound.....	13
Pork, clear, per pound.....	12
Pork, standard mess, per pound.....	14
Ox tongues, whole, 3 to 5 lbs., per pound.....	24
Native, per pound.....	20
Pigs' feet, pickled, per pound.....	7
Pigs' feet, corned, per pound.....	7
Tongues, per pound.....	22

## POULTRY AND GAME.

Chickens—Fancy, roasting, milk fed, per pound.....	31
Chickens—Fancy, roasting, corn fed, per pound.....	27



	Price.
Fowls, per pound.....	24
Eggs, light, per pound.....	22
Ducks, Western, per pound.....	24
Capons, per pound.....	24
Broilers, milk fed, per pound.....	34
Broilers, corn fed, per pound.....	32
Turkeys, per pound.....	29
DAIRY PRODUCTS.	
Butter—Creamery, special, per pound.....	38
Creamery, 60-62 lb tub, whole tub, per pound.....	24
Sheffield Farms, extra fancy, per lb.....	58
Cheese—Philadelphia cream, cake.....	9
Rouge, per pound.....	43
Young America, per pound.....	20
Swiss, per pound.....	34
Edam, each.....	1.15
Edam, per quart.....	29
Parmesan, per pound.....	34
Gouda, per pound.....	26
Snappy, per cake.....	9
Milk, Sheffield Farms, per quart.....	34
Eggs, fresh, per dozen.....	34
per 1/2 dozen.....	17
Ferrellac, bottle.....	25
Ice cream, quarts, per gallon.....	125
1-gallon.....	150
Cream, 30 per cent, quart.....	45
pint.....	25
.....	15
VEGETABLES.	
Beets, per pound.....	2
Cabbage, per pound.....	2
Carrots, per pound.....	2
Calliflower, per pound.....	4
Celery, per head.....	15
Cucumbers, per pound.....	4
Egg plant, per pound.....	3
Lettuce, per head.....	7
Onions, per pound.....	2 1/2
Peppers, green, per pound.....	3
Plantains, per dozen.....	12
Potatoes, white, per pound.....	2
Potatoes, sweet, per pound.....	2
Squash, per pound.....	2 1/2
Turnips, per pound.....	1 1/2
Tomatoes, per pound.....	7
Yams, Lucra, per pound.....	3
FRUITS.	
Apples, per pound.....	15
Grape fruit, tropical, each.....	3 1/2
Grapes, per pound.....	9
Lemons, per dozen.....	12
Limes, per 100.....	32
Oranges—Select, each.....	5
Tropical, per dozen.....	16
Coconuts, each.....	45
Bananas, per bunch.....	38
Bananas, each.....	1 1/2
Apples, evaporated, per pound.....	11
Apricots, evaporated, per pound.....	11
Pears, evaporated, per pound.....	23
Peaches, evaporated, per pound.....	7
Figs, dried, 12-oz. packages.....	14
Raisins, seedless, package.....	11
table, cluster, per pound.....	18
Currants, cleaned, package.....	12
Prunes, stewing, per pound.....	11
Pkins, per pound.....	11
Peaches, fresh, per pound.....	5
Pears, fresh, per pound.....	6
Cantaloupes, each.....	11
Tangerines, each.....	1 1/2

\* Indicates advance from preceding list.

\*\*Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham of 1/2 shoulder of fresh pork will be sold.

#### Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective September 18:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Snap, castle, cake.....	\$0.16	\$0.18
Lawn, bleached, yd.....	.29	.32
Snap fasteners on tape, yd.....	.19	.23
Snap fasteners on tape, yd.....	.19	.23
Balls, camphor, box.....	.16	.24
Blotters, hand, doz.....	.02	.04
pkg.....	.02	.04
Blades, Auto Strop, pkg.....	.74	.79
Brushes, stove, ea.....	1.35	1.55
Strainers, wire, ea.....	.08	.10
Plates, pie, ea.....	.14	.16
Shad's, lamp, ea.....	.28	.25
Nails, upholstery, pkg.....	.05	.07
Sets, tool, ea.....	.31	.37
Raincoats, ladies', ea.....	4.35	4.75
Raincoats, men's, ea.....	7.20	7.90
Plates, 8", H 1947, ea.....	1.35	1.55
Plates, 10", A 4807, ea.....	.60	.50
Plates, 14", A 4807, ea.....	2.45	2.25
Men's shoes, pr.....	4.95	5.10
Men's shoes, pr.....	4.95	5.25
Cases, suit, ea.....	4.30	4.40
Nuts, mixed, lb.....	.17	.20
Walnuts, lb.....	.18	.23

## SHIPPING INFORMATION.

### Concise Statement on Points of Primary Interest to Users of the Canal.

In order to spread as widely as possible this information of primary importance to users of the Panama Canal, there are published below concise statements on points of most immediate concern to them. More extensive information than may be published here may be obtained from the "Sailing Directions and General Information" issued by The Panama Canal. This is a booklet of 115 pages, thoroughly explicit and carefully indexed, in which are covered all matters involved in handling vessels through the Canal. Copies of this booklet are in the hands of United States consular officers all over the world, and in the offices of the collectors of customs at United States ports, or at United States branch hydrographic offices, and have been furnished to the principal governmental and commercial maritime agencies over the world. Copies may be obtained on application to The Panama Canal, Washington, D. C., or Balboa Heights, C. Z.

### PAYMENT OF TOLLS AND OTHER CHARGES.

It is necessary to place funds on deposit to cover the tolls of a vessel before she will be allowed to enter the Canal. This deposit may be placed with any Assistant Treasurer of the United States (one of whom is situated at any of the larger United States ports); or with the Assistant Auditor of The Panama Canal in Washington, D. C.; or with the Collector of The Panama Canal, Balboa Heights. The Assistant Treasurer method seems to be the most convenient for operators, as it is the one most generally used.

In case deposit is made in the United States it is advisable to request at the time of making deposit that cable advice of same be sent to the Canal, in order that there may be no delay to a vessel when she presents herself for passage.

Foreign operators may handle such depositing with equal simplicity, by directing their bankers or shipping agents to have the deposit placed with the Assistant Treasurer in New York or San Francisco, for instance.

The Canal organization has been developed to handle the passage of vessels complete and to attend to their needs in the way of tolls, coal, supplies, cables, mail, etc., without delay or "red tape" and there is no need for operators to employ local agents for vessels which come to the Canal for the sole purpose of passing through it, without taking on or discharging freight or passengers in Canal waters. In fact the interposition of a third party in the arrangements for a vessel which is simply passing through the Canal is liable to result in confusion and delay. In other words, a local agent may be needed for commercial purposes, in looking after cargo and passengers if vessels handle either at the terminal ports; but he is not needed to look after the requirements of the ship herself as far as going through the Canal, communicating, taking on supplies, coal, etc., are concerned.

### REFUNDING BALANCE.

As soon as a vessel has cleared from the Canal a statement of her expenses is forwarded to her operator, with a check on the Treasurer of the United States for the balance of the deposit. In the case of lines having frequent passages through the Canal it is permissible to allow such balance to apply on account, but

the statement of each vessel's expenses for each passage is sent in all cases.

### CHARGES FOR TOLLS.

Tolls on loaded commercial vessels are charged at \$1.20 per net vessel ton—each 100 cubic feet of actual earning capacity—the net tonnage being determined by the rules for the measurement of vessels for the Panama Canal. Deck load is charged for in addition, at \$1.20 per 100 cubic feet of space occupied by deck load.

On vessels in ballast the toll charge is 72 cents per net vessel ton, Panama Canal rules of measurement.

These basic charges have been modified, however, by the ruling that loaded vessels shall not pay more than the equivalent of \$1.25 per net ton as determined by the rules of measurement for United States registry; and ballast vessels shall not pay less than 75 cents per net ton, United States registry measurement.

Hence, vessels coming to the Canal for passage should have certificates of measurement according to the Panama Canal rules and also according to the rules of United States registry. These certificates can be issued at the ports of entry to the Canal but this might cause delay to a vessel.

### CHARGES FOR SERVICES.

There is no charge for pilotage on vessels passing through the Canal which do not stop at either terminal port to discharge or take on passengers or cargo. Also there is no charge when they stop at terminal ports for the purpose of taking on coal, supplies, etc. Pilotage charges when levied are port charges and not a part of the expenses of passing through the Canal.

The only additional expenses to which a vessel may be put for Canal transit proper would be for services rendered necessary by the condition of the ship. Such are charges for furnishing extra men on deck to handle the lines in passing through the locks, when the ship's crew is not sufficient; and tug service for sailing vessels or steamships in condition requiring assistance. Under such conditions the tug charge is \$15 per hour; or for complete transit of the Canal, 10 cents per net Canal ton or four cents per displacement ton, with a minimum charge of \$150.

### PANAMA RAILROAD COMPANY.

On account of the close relationship of the Panama Railroad Company (operating the Panama Railroad Steamship Line) to The Panama Canal the former can very advantageously act as agent for other steamship lines if desired. Upon regular request it will advance funds for payment of tolls, fuel, supplies, and attend to stevedoring, etc. The services of the company may be engaged by addressing its home office, 24 State Street, New York City, or the Superintendent, Balboa Heights, Canal Zone.

### FUEL.

Coal is supplied to vessels at both terminal ports, at the rate of between 400 and 700 tons a day. The facilities are being improved. The present prices for delivery from lighters, trimmed in bunkers, are \$6 per ton, when handled by ship's gear, at Cristobal; and at Balboa, \$7. The coal is Pocahontas standard.

Fuel oil may be obtained at either terminal from plants of The Panama Canal or from

private corporations, at the rate of about 1,600 barrels an hour. The price from The Panama Canal is \$1.25 per barrel of 42 gallons, sold as dry oil at the local temperature, with subtraction of the amount of water contained, as shown by analysis. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several corporations, one of which quotes a general price of 45 shillings per ton of seven barrels.

## SUPPLIES.

Supplies in unlimited quantities, including meats, cold storage products, groceries, fruits, vegetables, etc., as well as ships' supplies—lubricants, cordage, ships' chandlery, standard articles for ships' use—can be purchased from The Panama Canal in either of the terminal ports and delivery can be made on short notice. By Governmental regulation these goods are sold at fixed prices very slightly above cost.

Ice is furnished for 33 cents per 100 pounds at both Cristobal and Balboa. It is available in any quantity.

Laundry is handled quickly and no advance notice is required.

Repairs to vessels may be made to any extent, except where the use of a large dry dock is required or the turning of the largest crank shafts or longest line shafts.

Ships are boarded by a boarding officer immediately on arrival. He furnishes price lists and takes orders for all kinds of supplies or fuel. Any supplementary orders or requests for any kind of services may be sent to the Captain of the Port, communication with whom is always easy.

The Captain of the Port of entry is the local executive with whom, or his authorized immediate representatives, the master of a vessel coming into the Canal will have dealings. His office is the clearing house for all business with the ships, and is the local marine headquarters. It gives out chronometer comparisons, nautical information as to charts, sailing directions, etc., delivers and receives mail, and has supervision over the delivery of coal, supplies, etc., to vessels.

## COMMUNICATIONS.

While by no means necessary it is advantageous if vessels can advise in advance when they will arrive, by mail, cable, or radio. Mail is received five times a week from the United States, and approximately a week after posting. The Canal is equipped with three radio stations, two for areas within 1,000 miles of the terminal ports and one which has a sending range of approximately 3,000 miles.

Communications should be addressed to The Panama Canal, Balboa Heights, Canal Zone. The cable address of the Canal on the Isthmus is Panacanal, Panama; of the Washington office, Panacanal, Washington. Codes used are A. B. C. Telegraphic, 5th edition; Lieber's; Scott's Shipowners' Telegraphic (1906); Western Union Telegraphic (Universal Edition), etc.

Shipping people are invited to remember that the fundamental purpose of the Canal is to pass ships between the two oceans quickly. They are invited, accordingly, to make any suggestions by which this purpose may be even more completely realized, and to make inquiries for additional information.

## Tide Predictions.

Panama (Balboa) tide predictions for the remainder of September and for October are given in this table:

## SEPTEMBER.

DATE.	Time and height of high and low water.			
Wed., Sept. 22.....	2:48	8:50	15:09	21:10
	14:7	1.1	14.6	0.6
Thurs., Sept. 23.....	3:33	9:36	15:52	21:53
	15.3	0.4	15.0	0.3
Fri., Sept. 24.....	4:10	10:16	16:31	22:33
	15.7	0.0	15.2	0.3
Sat., Sept. 25.....	4:46	10:55	17:07	23:10
	15.7	0.1	15.1	0.5
Sun., Sept. 26.....	5:21	11:32	17:42	23:48
	15.3	0.2	14.7	1.1
Mon., Sept. 27.....	5:53	12:09	18:17	.....
	14.8	0.8	14.0	.....
Tues., Sept. 28.....	6:25	6:26	12:48	18:52
	1.9	14.0	1.6	13.2
Wed., Sept. 29.....	1:04	6:59	13:28	19:30
	2.7	8.2	2.5	12.3
Thurs., Sept. 30.....	1:46	7:37	14:14	20:13
	3.7	12.3	3.4	11.4

## OCTOBER.

DATE.	Time and height of high and low water.			
Fri., October 1.....	2:36	8:23	15:09	21:13
	4.6	11.4	4.1	10.7
Sat., October 2.....	3:34	9:28	16:17	22:01
	16.2	10.8	4.5	10.5
Sun., October 3.....	4:48	10:53	17:22	23:51
	5.4	10.6	4.4	10.9
Mon., October 4.....	5:58	12:10	18:24	.....
	16.9	11.1	3.9	.....
Tues., October 5.....	6:51	6:55	13:09	19:15
	11.7	4.0	11	3.0
Wed., October 6.....	1:37	7:43	13:55	20:00
	12.8	4.7	12.9	2.0
Thurs., October 7.....	2:16	8:26	14:37	20:41
	14.0	1.5	14.0	1.0
Fri., October 8.....	2:53	9:06	15:18	21:23
	15.2	0.2	15.0	0.2
Sat., October 9.....	3:31	9:47	15:54	22:02
	16.1	-0.8	15.8	-0.4
Sun., October 10.....	4:08	10:28	16:33	22:44
	16.8	-1.4	16.2	-0.7
Mon., October 11.....	4:47	11:10	17:14	23:27
	17.1	-1.6	16.2	-0.6
Tues., October 12.....	5:27	11:54	17:57	.....
	16.9	1.3	15.9	.....
Wed., October 13.....	6:12	6:12	12:40	18:44
	0.0	16.3	-0.6	15.2
Thurs., October 14.....	1:01	7:00	13:32	19:36
	0.8	15.3	0.4	14.2
Fri., October 15.....	1:56	7:56	14:30	20:39
	1.9	14.1	1.5	13.2
Sat., October 16.....	3:01	9:01	15:37	21:56
	2.9	13.0	2.4	12.9
Sun., October 17.....	4:16	10:28	16:51	23:21
	3.5	12.2	2.9	12.5
Mon., October 18.....	5:33	11:55	18:03	.....
	0.8	12.2	2.8	.....
Tues., October 19.....	6:37	6:44	13:09	19:06
	13.0	2.9	12.7	2.4
Wed., October 20.....	1:38	7:41	14:05	20:00
	13.7	2.1	13.4	1.9
Thurs., October 21.....	2:27	8:30	14:52	20:46
	14.3	1.4	13.9	1.5
Fri., October 22.....	3:07	9:11	15:32	21:28
	14.8	0.7	14.4	1.2
Sat., October 23.....	3:44	9:51	16:09	22:07
	15.0	0.4	14.6	1.2
Sun., October 24.....	4:18	10:29	16:44	22:43
	15.2	0.3	14.5	1.3
Mon., October 25.....	4:51	11:05	17:17	23:21
	14.8	0.5	14.2	1.7
Tues., October 26.....	5:23	11:42	17:51	23:58
	14.4	0.9	13.8	2.2
Wed., October 27.....	5:57	12:20	18:27	.....
	13.9	1.5	13.2	.....
Thurs., October 28.....	6:38	6:32	13:00	19:04
	2.9	12.2	2.2	12.5
Fri., October 29.....	1:20	7:09	13:44	19:47
	3.6	12.5	3.0	11.9
Sat., October 30.....	2:08	7:53	14:34	20:39
	4.3	11.7	3.6	11.4
Sun., October 31.....	3:05	8:49	15:32	21:43
	4.8	11.1	4.1	11.2

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Thursday to New Orleans, for all States. Due at New Orleans on the following Tuesday.

Every Friday or Saturday to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week on Friday when the vessel has not been sent through the Canal to Balboa from New York, and on Saturday if the vessel has been sent to Balboa. The day of departure from Cristobal is bulletined by the Panama Railroad Company several days in advance. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE—The sailings on Monday, October 18 and November 15, will not land mail in New York until Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday boat to New Orleans. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

## Rainfall from September 1 to 18, 1915, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>			
Balboa.....	Ins.	Ins.	Ins.
Balboa Heights.....	1.22	11	2.20
Minafiores.....	1.69	15	2.53
Pedro Miguel.....	1.31	15	2.91
Rio Grande.....	.79	18	3.95
<i>Central Section—</i>			
Culebra.....	1.19	17	4.55
*Camacho.....	1.10	15	5.18
Empire.....	.88	17	3.71
*Gambao.....	3.53	15	6.71
*Juan Mina.....	3.75	15	6.76
Alhajuela.....	1.79	15	5.97
*Vigia.....	1.43	15	6.12
*Prioles.....	1.83	6	5.90
*Monte Lirio.....	3.95	15	10.73
<i>Atlantic Section—</i>			
Gatun.....	1.80	15	9.89
*Brazos Brook.....	1.67	17	7.82
Colon.....	1.14	18	5.64
*Bocas del Toro.....	.....	.....	.....

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values midnight to midnight.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, September 18, 1915:

DAY AND DATE.	STATIONS.				
	Vigia.	Alhajuela.	Gambao.	Gatun Lake.	Miraflores Lake.
Sun., Sept. 12.....	127.85	93.67	86.11	86.05	54.41
Mon., Sept. 13.....	127.80	93.76	86.12	86.05	53.85
Tues., Sept. 14.....	127.80	93.57	86.15	86.07	53.90
Wed., Sept. 15.....	127.80	93.74	86.13	86.08	53.92
Thurs., Sept. 16.....	131.90	96.80	86.28	86.27	54.08
Fri., Sept. 17.....	128.90	94.85	86.02	86.05	54.31
Sat., Sept. 18.....	129.05	94.56	86.11	86.06	54.10

Heights of low water to nearest foot:

125.0	91.0
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## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Zacapa.....	U. F. C.	Sept. 15.....	Sept. 22
Alliancia.....	P. R.	Sept. 16.....	Sept. 22
Calamares.....	U. F. C.	Sept. 18.....	Sept. 26
Carillo.....	U. F. C.	Sept. 22.....	Sept. 29
Colon.....	P. R.	Sept. 23.....	Sept. 29

(Continued on page 40.)

## MOVEMENTS OF OCEAN VESSELS

(Week ending at 6 p. m., September 19, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Sept. 13.	<i>Towa Maru</i> .....	Japanese.....	Towa Koshi.....	Philadelphia.....	Shimonoseki.....	Petroleum.....	3,500	2,857	2,012
Sept. 13.	<i>Gen. Manuel Enríquez</i> .....	Honduran.....	P. Uruchúa & Company.....	New York.....	Amapala.....	Ballast.....	1,315	315	229
Sept. 13.	<i>Chamberlain</i> .....	British.....	West Hartlepool Steam Nav. Co.....	Newport News.....	Mejillones.....	Ballast.....	.....	3,989	2,911
Sept. 13.	<i>Ellerslie</i> .....	British.....	Hutchins Brothers.....	Kingston.....	Vancouver.....	Coal.....	.....	4,297	3,122
Sept. 13.	<i>Sueria</i> .....	Swedish.....	Johnson Line.....	Köteborg.....	San Francisco.....	General.....	1,500	5,275	3,986
Sept. 14.	<i>Copenhagen</i> .....	British.....	Glasgow Shipowners Co., Ltd.....	Norfolk.....	Talati, Chile.....	Coal.....	6,482	5,029	3,745
Sept. 14.	<i>Caica</i> .....	British.....	Pacific Steam Navigation Co.....	Cristobal.....	Guayaquil.....	General.....	1,002	1,587	993
Sept. 14.	<i>Victoria</i> .....	British.....	Pacific Steam Navigation Co.....	Liverpool.....	Valparaiso.....	Ballast.....	.....	6,860	4,566
Sept. 14.	<i>Calchas</i> .....	British.....	Ocean Steamship Co., Ltd.....	Glasgow.....	Los Angeles.....	General.....	1,100	6,669	4,672
Sept. 15.	<i>Carolyn</i> .....	American.....	Luckenbach Line.....	New York.....	San Francisco.....	General.....	4,100	3,425	2,322
Sept. 15.	<i>Clan Farquhar</i> .....	British.....	Cayzer, Irvine & Co., Ltd.....	New York.....	Auckland.....	General.....	6,800	5,940	4,491
Sept. 15.	<i>Huasco</i> .....	Chilean.....	South American S. S. Co.....	Cristobal.....	Guayaquil.....	General.....	2,266	4,563	3,121
Sept. 15.	<i>Ucayali</i> .....	Peruvian.....	Peruvian Line.....	Cristobal.....	Guayaquil.....	General.....	1,000	4,278	2,206
Sept. 15.	<i>Tamirio</i> .....	American.....	Pacific Coast S. S. Co.....	Los Angeles.....	Los Angeles.....	General.....	2,730	2,317	1,606
Sept. 17.	<i>Strathearn</i> .....	British.....	Royal Mail Steam Packet Co.....	Cristobal.....	Buenaventura.....	General.....	340	1,170	620
Sept. 18.	<i>Tallac</i> .....	American.....	Strathearn Steamship Co., Ltd.....	Newport News.....	Pisagua.....	Ballast.....	.....	4,684	3,439
Sept. 18.	<i>Oliver J. Olson</i> .....	American.....	Tallac Steamship Co.....	Philadelphia.....	Los Angeles.....	General.....	1,900	1,584	1,125
Sept. 18.	<i>Newburn</i> .....	British.....	Olson & Mahony.....	Baltimore.....	Seattle.....	Coal.....	1,988	2,207	1,483
Sept. 19.	<i>Rio Pirahy</i> .....	British.....	Newcastle S. S. Co., Ltd.....	New York.....	Vladivostok.....	General.....	5,200	3,972	3,025
			European & Brazilian S. S. Co.....	New Orleans.....	Humboldt Bay.....	Ballast.....	.....	3,746	2,626

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Sept. 13.	<i>Charlton Hall</i> .....	American.....	New York and South Amer. Line	Pisagua.....	Colon, for orders.	Nitrates.....	7,314	5,993	4,217
Sept. 13.	<i>Lemox</i> .....	British.....	Jno. Warrack & Co.....	Antofagasta.....	Port Vendres.....	Nitrates.....	4,808	3,701	2,708
Sept. 13.	<i>S. V. Luckenbach</i> .....	American.....	Luckenbach Line.....	San Francisco.....	New York.....	General.....	2,962	3,859	2,632
Sept. 14.	<i>Jamaica</i> .....	British.....	Pacific Steam Navigation Co.....	Tumaco.....	Cristobal.....	General.....	240	1,170	620
Sept. 14.	<i>La Vau Versaw</i> .....	American.....	Royal Dutch W. I. Mail.....	Antofagasta.....	Barcelona.....	Nitrates.....	4,500	3,623	2,376
Sept. 14.	<i>Minisotau</i> .....	American.....	American-Hawaiian Line.....	Hilo.....	Det. Breakwater.....	Sugar and pines.....	9,000	6,875	4,610
Sept. 14.	<i>Acuña</i> .....	British.....	Salvadoran Railway.....	Salina Cruz.....	Cristobal.....	General.....	240	1,219	627
Sept. 14.	<i>Italy Branch</i> .....	British.....	Nautilus Steam Shipping Co.....	Talcahuano.....	Liverpool.....	General.....	5,375	4,948	3,668
Sept. 15.	<i>Antonio Welch</i> .....	American.....	Pacific Coast S. S. Co.....	Holmsund.....	San Francisco.....	Beans.....	1,400	918	794
Sept. 15.	<i>Biangue</i> .....	Danish.....	East Asiatic Line.....	San Francisco.....	Copenhagen.....	Barley, lumber.....	3,600	2,928	2,109
Sept. 15.	<i>Crown of Galicia</i> .....	British.....	Crown S. S. Co.....	San Francisco.....	Liverpool.....	General.....	7,000	5,693	4,086
Sept. 15.	<i>Chircha</i> .....	American.....	New York and Pacific Line.....	Talca.....	Montreal.....	Nitrates.....	8,803	6,429	4,624
Sept. 15.	<i>Palati</i> .....	British.....	Bank Line.....	San Francisco.....	Alexandria.....	Nitrates.....	8,300	7,911	5,623
Sept. 15.	<i>Heysper</i> .....	Norwegian.....	Pacific Steam Navigation Co.....	Talcahuano.....	Colon, for orders.	Cocoa, hides, etc.....	2,397	3,922	2,231
Sept. 16.	<i>Francis Hanify</i> .....	American.....	Brussgaard Kiøsterud Dampsk.	Talca.....	Colon, for orders.	Nitrates.....	8,150	5,678	4,214
Sept. 16.	<i>Caluta</i> .....	American.....	Hanify S. S. Co.....	Tecopilla.....	Nitrates.....	Nitrates.....	3,250	2,643	1,672
Sept. 16.	<i>Berwick Law</i> .....	British.....	W. R. Grace & Co.....	Boston.....	Wool, concentrate.....	Wool, concentrate.....	6,154	6,639	4,781
Sept. 17.	<i>Tranquebar</i> .....	Danish.....	Gladstone & Co.....	Philippine Islands.....	New York.....	Sugar, hemp.....	5,690	4,194	3,094
Sept. 17.	<i>Ormsion</i> .....	British.....	J. Law & Company.....	Manila.....	New York.....	General.....	7,600	6,195	4,630
Sept. 17.	<i>Ormsion</i> .....	British.....	East Asiatic Line.....	Antofagasta.....	St. Thomas, orders.....	Nitrates.....	5,800	4,397	3,203
Sept. 18.	<i>Flamewind</i> .....	British.....	Orm Steamship Co.....	Seattle.....	General, lumber.....	General, lumber.....	7,150	5,663	4,102
Sept. 18.	<i>Landuino</i> .....	British.....	Pacific Steam Navigation Co.....	Valparaiso.....	Liverpool.....	General.....	4,740	6,021	4,515
Sept. 18.	<i>Manari</i> .....	British.....	E. T. Radcliffe.....	Victoria.....	United Kingdom.....	Lumber.....	3,100	4,656	3,312
			Pacific Steam Navigation Co.....	Guayaquil.....	Cristobal.....	Cocoa, general.....	307	1,205	745

\*Other than vessels which passed through the Canal.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

Date	Vessel	Line	From	Date	Vessel	Line	From
Sept. 20.	<i>Ronla</i> .....	G. F. Sleight.....	Los Angeles	Sept. 20.	<i>Coronado</i> .....	Elders & Fyffes.....	Bristol, Jamaica.
Sept. 23.	<i>Gargian</i> .....	American-Hawaiian Line.....	Daiquiri, Cuba.	Sept. 20.	<i>Tabor</i> .....	Earn Line.....	Galveston.
Sept. 25.	<i>Ohiara</i> .....	American-Hawaiian Line.....	Los Angeles	Sept. 20.	<i>Seythian</i> .....	Leysland Line.....	Galveston.
Sept. 25.	<i>Discuter</i> .....	Chirreute S. S. Co., Ltd.....	San Francisco				

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	To
Sept. 15.	<i>Magdalena</i> .....	Royal Mail S. P. Co.....	London.	Sept. 16.	<i>Puerto Rico</i> .....	French Line.....	Bordeaux.
Sept. 16.	<i>Talpa</i> .....	Eara Line.....	Norfolk.	Sept. 16.	<i>Magdalena</i> .....	Royal Mail S. P. Co.....	London.
Sept. 17.	<i>C. A. Canfield</i> .....	Petroleum Transport Co.....	Tampico.	Sept. 19.	<i>C. A. Canfield</i> .....	Petroleum Transport Co.....	Tampico.
Sept. 17.	<i>Seythian</i> .....	Leyland Line.....	Liverpool.				

## \*EXPECTED ARRIVALS.

Sept. 25.	<i>Coronado</i> .....	Elders & Fyffes.....	Port Limon.	Sept. 25.	<i>Coronado</i> .....	Elders & Fyffes.....	Bristol, Jamaica.
				Sept. 20.	<i>Tabor</i> .....	Earn Line.....	Daiquiri, Cuba.
				Sept. 20.	<i>Seythian</i> .....	Leysland Line.....	Galveston.

\*Other than vessels which passed through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

Sept. 13.	<i>Guernsey</i> .....	W. Wilhelmssen.....	Antofagasta.	Sept. 14.	<i>Guernsey</i> .....	W. Wilhelmssen.....	San Francisco.
Sept. 17.	<i>Cauca</i> .....	Pacific Steam Nav. Co.....	Taboga.	Sept. 18.	<i>Cauca</i> .....	Pacific Steam Nav. Co.....	Guayaquil.

## \*EXPECTED ARRIVALS.

Sept. 20.	<i>J. A. Moffett</i> .....	Standard Oil Co.....	San Francisco.	Sept. 21.	<i>San Juan</i> .....	Pacific Mail S. S. Co.....	San Francisco.
Sept. 20.	<i>Barge No. 93</i> .....	Standard Oil Co.....	San Francisco.				

\*Other than vessels passing through the Canal.

(Continued from page 39.)

## NEW ORLEANS TO CRISTOBAL-COLON.

Tenadores.....	U. F. C. Sept. 25.....	Oct. 3	Atenas.....	U. F. C. Sept. 15.....	Sept. 22	Parismia.....	U. F. C. Sept. 23.....	Sept. 28
Santa Maria.....	U. F. C. Sept. 29.....	Oct. 6	Cartago.....	U. F. C. Sept. 18.....	Sept. 23	Atenas.....	U. F. C. Sept. 23.....	Sept. 30
Advance.....	P. R. C. Sept. 30.....	Oct. 7	Turrialba.....	U. F. C. Sept. 22.....	Sept. 29	Cartago.....	U. F. C. Sept. 30.....	Oct. 5
			Heredia.....	U. F. C. Sept. 25.....	Sept. 30	Turrialba.....	U. F. C. Sept. 30.....	Oct. 7
Almirante.....	U. F. C. Sept. 3.....	Sept. 30	Ahangarez.....	U. F. C. Sept. 29.....	Oct. 7	Heredia.....	U. F. C. Sept. 7.....	Oct. 12
Panama.....	P. R. C. Sept. 25.....	Oct. 1	Parismia.....	U. F. C. Sept. 2.....	Oct. 7	Atangarez.....	U. F. C. Oct. 7.....	Oct. 14
Pastores.....	U. F. C. Sept. 27.....	Oct. 4	Atenas.....	U. F. C. Oct. 6.....	Oct. 13	Parismia.....	U. F. C. Oct. 14.....	Oct. 19
Zacapa.....	U. F. C. Sept. 30.....	Oct. 7	Cartago.....	U. F. C. Oct. 9.....	Oct. 14	Atenas.....	U. F. C. Oct. 14.....	Oct. 21

## CRISTOBAL-COLON TO NEW ORLEANS.



# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, SEPTEMBER 29, 1915.

No. 6.

## The Canal Record

Official publication of The Panama Canal.

The *Canal Record* is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Sent between July 1 and October 1, 50 cents; between October 1 and January 1, 25 cents. For foreign subscriptions the year is divided into thirds, and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### The Slide Situation.

Dredging in the section of the Cut obstructed by the Culebra slides is being pushed, but navigation has remained closed since September 18.

The 15-yard dipper dredge *Gambao* set a new high record for dredges in hard material in the 24 hours ending at 6 a. m., September 23, turning out 15,145 cubic yards of spoil. This is an average of 5,048 cubic yards in each 8-hour shift, and at the rate of 631 cubic yards an hour. The *Paraiso*, mate of the *Gambao*, made herself a high record of 14,650 cubic yards in the 24 hours ending at 6 a. m., September 27. This is regarded as finer performance than the record of the *Gambao*, for the reason that the *Gambao*, working by herself at one end of the slide, had empty barges waiting at all times and was not subject to the delays that occurred occasionally to the *Paraiso*, which was working at a time when other dredges were drawing on the supply of barges and sometimes making the *Paraiso* wait.

Directly after the occurrence of the movement of September 18-19 the ladder dredges *Marmot* and *No. 5* were brought up from the Atlantic and Pacific entrances, respectively, to work through the shoal water and clear a channel to allow the large dredges access to the worst part of the slide, where material had been shoved up from the bottom, forming an island. The *Marmot* was returned to her regular assignment on Friday, September 24, and is working at the Cristobal coaling plant. Dredge *No. 5*, regularly stationed in the inner harbor at Balboa, is undergoing repairs at Paraiso. These dredges were taken away to make room for those of greater capacity to work in the congested section.

### Postage Due on Mail Addressed to Ships.

The Division of Posts has made arrangements for facilitating delivery through the offices of the Port Captains of postage-due mail addressed to ships using the Canal. A great amount of the deficiency in postage on this mail is due to the fact that many of the letters originating in Great Britain are addressed for delivery in the United States. They are carried at the two-cent letter rate to the United States but as soon as they are forwarded to the Canal Zone they become subject to the foreign rate of five cents per first ounce, and three cents for each additional ounce, or fraction thereof. Trouble would be saved the addressees of such mail if the full foreign rate were paid by the senders on matter that is likely to be forwarded outside of the United States.

### Reduction in Charge for Handling Oil.

The charge for handling fuel oil through the plants of The Panama Canal has been reduced from four cents to 3½ cents per barrel. This applies to operations in discharging oil from a carrier into storage tanks, transferring from one tank to another, or delivering to vessels from the tanks.

In present practice the charges for handling oil are always made against the oil corporation receiving or delivering the oil. In the prices which the Canal and the private corporations make to vessels for fuel oil, the cost of handling the oil is included in the sales price. In other words, quotations are made for free delivery into the tanks of the vessel alongside the oil crib.

As pointed out in the circular letter from the Governor published elsewhere in this issue of THE CANAL RECORD, there are no wharfage charges against vessels taking oil at the crib.

### The "Newport" (as Decided) in Favor of the Panama Railroad Company.

The New York office of the Panama Railroad Company has advised the Isthmian authorities that the United States court has decided the suit of the Pacific Mail Steamship Company versus the Panama Railroad Company, growing out of the sinking of the steamship *Newport* alongside the wharf at Balboa on August 17, 1912, in favor of the railroad company. Copies of the opinion in the case are to be forwarded by mail.

### Canal Zone Official Postal Guide.

The Division of Posts has issued an official postal guide for the Canal Zone. It contains in condensed form all the special instructions issued to postmasters since the beginning of the Canal Zone postal service which were in force on June 30, 1915, with marginal references by number and date to the circulars containing the original instructions in amplified form. With respect to matters not covered by special instructions, the Director of Posts advises in the preface to the guide that they

shall be governed by the provisions of the United States postal laws and regulations properly applicable to local conditions.

The guide was made up in 12 chapters, containing 177 sections. It contains 48 pages and a 5-page index. The chapters deal, in order, with post-office box rents; customs duties of the Republic of Panama; despatches; free entry of mail parcels; money-order business; deposit money orders; mail matter (a general chapter covering classifications of matter, irregularities, missent mail, use of franked envelope, etc.); postage due; general instructions; parcel-post matter; registry system; and general instructions for requisitions, etc.

The guide was prepared primarily for the use of the postal employees, but contains a great deal of matter which is instructive and helpful to members of other divisions of the Canal service and the general public. It was printed by the Panama Canal plant at Mount Hope.

### Second 250-ton Crane in Service.

The 250-ton floating crane *Ajax*, recently completed at Cristobal and submitted for test, has been provisionally accepted by The Panama Canal, and has been placed in service. The *Ajax* underwent all of the principal tests satisfactorily, but certain minor details remain to be adjusted before the final acceptance.

### Time Required To Make Soundings in the Cut.

In the note on "Daily Survey of Channel Affected by Slides" in THE CANAL RECORD of September 15, the rapidity with which soundings are made by the field parties was erroneously expressed as seven-tenths of a second per sounding. What should have been stated is that for the complete operations carried on by the parties in the field, including making the soundings and notes of them, plotting them directly on tracing paper, drawing the contours, making ten blueprints, and delivering copies to the dredging heads, the total time required averages about seven seconds per sounding. For instance, one day the complete operations referred to required two hours and 11 minutes; 1,139 soundings were taken, which was at the rate of 6.9 seconds per sounding.

### Flashlights for Giving Signals during the Night Lockages.

The Marine Division has ordered from the United States 24 additional pocket flash lights, for the use of the pilots in handling vessels through the locks after dark. At night the signals to the locomotive operators given with motions of the arms and hands are made visible by the use of an electric torch in each hand. The lights burn with a steady glow for ordinary use and can be flashed repeatedly to attract attention.

## CANAL WORK IN AUGUST.

Monthly Report of the Acting Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., September 15, 1915.  
The Honorable the Secretary of War,  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of August, 1915:

**Department of Operation and Maintenance.**

**Lock operation and maintenance.**—In addition to the usual maintenance and repair work at the locks, the electrically operated remote-controlled arrow signals on the approach walls at Gatun Locks, and the cable crossover sump pumps at Miraflores Locks were completed. The painting of the gate leaves in the west chamber of Gatun Locks was 95 per cent completed at the end of the month. The following commercial lockages were made:

Gatun—120 lockages, 153 vessels; *Pedro Miguel*—141 lockages, 155 vessels; *Miraflores*—149 lockages, 155 vessels.

**Electrical Division.**—The net output of the power plants was as follows: Gatun hydro-electric station, 3,185,680 kilowatt-hours; Miraflores steam station, 14,480 kilowatt-hours; total, 3,200,160 kilowatt-hours.

The output of the Balboa air-compressor plant was 169,328,705 cubic feet of free air compressed to 105 pounds. In addition to the usual operation, maintenance, and repair work construction work was carried on in connection with concrete barracks and quarters at Fort Grant, staff officers' quarters and other buildings for the Army, concrete and frame quarters for The Panama Canal, and in connection with the Cristobal and Balboa coaling stations.

**Municipal Engineering Division.**—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: Construction of roads and streets, and of the water and sewer systems, and the doing of the necessary grading work for the Army buildings being constructed at Fort Amador, Balboa Heights, Corozal, and Margarita; miscellaneous pipe line extensions and installations for the oil handling plants, and the coaling plant and dry dock at Balboa; and municipal work in the Balboa townsite.

**Meteorology and Hydrography.**—The rainfall for the month exceeded the station averages at seven stations and was deficient at 11 stations. For the first time on record, during the month of August, the total rainfall at Balboa Heights exceeded the total at Colon. The monthly rainfalls ranged from 15.24 inches at Balboa Heights, to 4.51 inches at Gamboa, the maximum precipitation recorded on any one day being 3.84 inches, at Alhajuela on the 21st. The estimated rainfall over the Gatun Lake watershed was 26 per cent below the average, or 9.82 inches against a 15-year mean of 13.20 inches. The Chagres River discharge at Alhajuela was four per cent below the 26-year August normal, and furnished 40 per cent and 37 per cent of the net and total Gatun Lake yields, respectively. The elevation of Gatun Lake varied from 86.15 on the 21st to 85.80 on the 22nd, averaging 86.02. Miraflores Lake ranged in elevation from 54.65 on the 20th to 53.55 on the 15th, averaging 54.06. One seismic disturbance was recorded at Balboa Heights, on August 31. It was of very slight duration and intensity, and no damage was reported as a result of the shock.

## Division of Terminal Construction.

## PACIFIC TERMINALS.

**Dry dock and entrance pier.**—In the preparation of foundations there were excavated, 2,190 cubic yards of rock and earth; and 1,841 cubic yards of mass and 2,419 cubic yards of reinforced concrete were placed. The floor of the dry dock was completed with the exception of that part lying under the lower end of the incline trestle, and the mixing plant was removed from the south wall and that portion of the wall also completed. The walls above the suction chamber were completed to elevation plus 9. There were embedded in the concrete 50,824 pounds of reinforcing steel, and 5,400 pounds of fixed steel; and 2,615 cubic yards of backfill were placed. In the erection of the miter gates 89.75 tons of structural steel were employed, making the total to date 823.90 tons. Thirty granite blocks, aggregating 554 cubic feet, were set in the walls, and the grinding of the reaction bearing to a true surface was started.

In the entrance pier, reinforcements were placed and concrete poured for the outlet culvert as far as the beginning of the curving outlets. Masonry plates were aligned and grouted in all piers, and the structural steel decking was erected in the bays included between stations 6 plus 51.5 and eight plus 76.5, the total weight of the steel used being 244.56 tons. The slide and stairway at the east end of the wall were partially concreted.

**Coaling plant.**—The north berm crane track in the west coal pocket was lined up and ballasted, and 176 cubic yards of earth were placed in the area between this and the south track and a cinder covering applied. All of the masonry plates in the viaduct posts of the conveyor track system were set, of which there were 66, totaling 1,950 pounds. In the unloader wharf, 671 cubic yards of rock were excavated in the foundation for piers, and the pouring of concrete for three piers was started, 235 cubic yards being placed and 16,333 pounds of anchor rails being embedded. One hundred and one cubic yards of reinforced concrete were placed in the deck and curtain walls, completing the east end of the dock. In the reloader wharf 15 piles were driven to strengthen the construction trestle. Sixteen caissons were sunk into rock, making a total of 64 caissons to date, 603 cubic yards of rock being excavated from caissons during the month. There were placed in cylinders 345,441 pounds of reinforcing rail and 1,059 cubic yards of concrete. Two cylinders were badly crushed at the bottom, necessitating their removal and the setting of new ones in their stead.

**Excavation and filling.**—The total excavation for the month amounted to 44,892 cubic yards, of which 37,804 cubic yards were classified as rock. Practically all of the total excavation was done at Sosa Hill. Towards the end of the month a slide occurred at the east end of the quarry, covering the tracks of the upper level. A total of 44,974 cubic yards of fill was placed, of which the East Breakwater received 28,448 cubic yards, of which sum 2,384 cubic yards were classified as armor rock.

**Docks.**—Two panels of decking of quay wall d-e-f (Docks 13 and 14) were concreted, 226 cubic yards being poured. At pier No. 18, 370 untreated piles were driven in the foundations for the retaining wall. The wall was completed for a length of 151 linear feet, 183 cubic yards of concrete being placed. Additional anchor rods, weighing 46,344

pounds, were placed between girders Nos. 6 and 13, and a coating of tar was applied to those between bents 13 and 35. The outside rows of columns for the pier shed, and the lattice frames for same, were erected. The two pipes for the tide gage were installed. At the end of the month the quarantine landing pier was 98 per cent completed. Fifteen piles were driven in clusters and a framing of timbers placed to form guides for the floating pontoon.

## ATLANTIC TERMINALS.

**East Breakwater.**—The trestle was advanced from bent 518 (station 23 plus 75) to bent 609 (station 37 plus 69). There were constructed 738 linear feet of single-track and 656 linear feet of double-track trestle, and 40,323 linear feet of piling were driven during the month. There was laid on the trestle 1,731 linear feet of 2-inch water line. A total of 32,908 cubic yards of Sosa Hill rock was dumped into the fill. Dry fill measured in place (loose) amounted to 45,380 cubic yards. Blue rock amounting to 11,216 cubic yards, and coral rock amounting to 6,586 cubic yards, were dumped by scows, and dredge No. 4 dumped 2,988 cubic yards of coral sand and 26,894 cubic yards of coral rock on the center line of the shore trestle, bringing the fill up to -15 at bents 123 to 220. The end of the trestle is now 36 feet back of the point which it had reached on February 7, prior to the northern of February 9. The reconstruction of the trestle was commenced on April 13, 1915, at station 15 plus 10 (from shore), and in 4.6 months the trestle has been advanced 8,185 linear feet.

**Coaling plant.**—The driving of creosoted fender piles was started at the south end of the unloader wharf, and at the end of the month this work was 50 per cent completed. All but six of the 31 caissons under the end wharf had been completely concreted, 1,529 cubic yards being placed in caissons. The pouring of floor slab and girder encasement for the unloader wharf was completed on August 25, and 490 linear feet of floor, containing 3,185 cubic yards of concrete, were poured. A concrete trough was constructed for carrying conduit across the coal storage space from the transformer house to the east wall. Three bays of steel for the end wharf were riveted, the total weight of deck steel erected and riveted amounting to 120 tons. The hard crown for the coral fill under the reloader wharf was completed. Suction dredge No. 83 cleaned up the bottom of the subaqueous storage basin to elevation -28, and the dredging of unloader slip to elevation -41 was practically completed. A trench was excavated across the French canal from dock No. 13 to the coaling station for the reception of the 10-inch water and oil pipes, for the permanent supply of the station. Under Washington order No. 40,483, (stocking and reclaiming bridges, viaduct, transformer houses, and re-loader tower) approximately 12,000 pounds of miscellaneous steel work was erected in bridge coops, digger houses, etc., and the steel frame of one traveling hopper was erected. Corrugated sheet metal work continued, that on houses of two diggers being completed, except for louvers on one house. About 1,200 linear feet of galvanized pipe hand railing have been placed on viaduct. The concrete floor of transformer house was poured, and work continued on stucco walls and partitions, which are now about 93 per cent complete. Two towers are now completely erected, one



of which is 93 per cent riveted. Eight digger motors, all solenoid brakes of diggers, and four motors for digger moving, have been installed. Approximately 15 per cent of switchboard work was done in the bridges, and about 25 per cent of the switchboard work was done in the transformer house. Structural steel is now completely erected and riveted for all four unloaders. Concrete floors of engine rooms are all completed and wood walkways, door casings, etc., are practically completed in all four towers, and the structural steel in all towers has been painted. Galvanized iron housing in tower No. 1 is now complete, except for providing flashings around openings. The machine work on the unloader towers, under Washington order No. 50,678, progressed satisfactorily during the month. Steam was generated in boilers on tower No. 1, and piping, connections, etc., inspected and adjustments made.

**Fuel oil plants**—At the Mount Hope plant, electric lights were installed in the manifold shed, down spouts to gutters were completed, and painting was finished. The new quarters for oil plant employees were also completed with the exception of grading and construction of gutters. The work of grading around the north end of the pump house has been started. The pipe line from the plant of the Huasteca Oil Company's tanks was completed, tested to 250 pounds pressure, and accepted. The tank on lot No. 28 was completed on August 23. The Panama Canal Storage Corporation has completed the excavation for the fire walls on its lots and its pipe line is about 50 per cent completed. The Texas Company finished its tank on lot No. 10, with the exception of the roofing, and excavation for the fire walls is in progress. The laying of the Texas Company's pipe line from the manifold to the tanks was completed and the line tested, acceptance being withheld until back-filling in front of the pumping plant is finished. The bottom plating for tank No. 27 was riveted and the lower course of plates bolted up.

At the Balboa oil handling plant, the grading around the plant was completed, and the installation of an additional pipe line to the steel pier was finished. The foundation for gasoline storage tank No. 31 was completed. The fire wall was constructed around tank No. 36. The drainage piping from the tank farm to the ditch excavated at the foot of the dump was installed, and the drainage piping laid from the Panama Canal Storage Corporation's lots Nos. 13 and 14, and from the Panama Agencies Company's lot No. 10.

#### Marine Division.

One hundred and sixty-three vessels passed through the Canal in August, 74 northbound and 89 southbound. Of this total 49 were of American register and 71 of British register. Twenty-three vessels were measured and 114 vessels were inspected to see whether their certificates conformed to the rules. The United States net equivalent tonnage was computed on 37 vessels.

#### Dredging Division.

The total excavation for the month, including earth, rock, and gravel, was 1,351,824 cubic yards. Of this total 96,094 cubic yards were removed from the Balboa inner harbor, 307,315 cubic yards of earth and 684,564 cubic yards of rock from the Canal prism in Gaillard Cut, 66,904 cubic yards of earth and 62,503 cubic yards of rock from the Cristobal coaling station and adjacent waters, 2,988 cubic yards of coral sand and 26,894 cubic yards of

coral rock from Coco Solo for the East Breakwater, 26,597 cubic yards of earth for the oil and water pipe crossing from Dock 13 to the south end of the coaling station, and 9,771 cubic yards of rock from the Cristobal approach channel. The rock breaker *Vulcan* was engaged the entire month breaking shoal south of Pier 18, Balboa inner harbor, 3,088 holes being broken over an area of 49,408 square feet, with a total penetration of 11,142 feet and a breackage of 6,636 cubic yards. The hydraulic grader was engaged sluicing on the north side of Gold Hill and furnishing steam to rock drills. The work of exterminating water hyacinths continued, and approximately 118,000 young plants were destroyed.

#### Mechanical Division.

Shop orders authorized during the month numbered 995, an increase of 93 as compared with July; those left over from the previous month numbered 507, and those carried forward into September numbered 557. The output of the foundry was 146,015 pounds of iron, 71,031 pounds of steel, and 25,012 pounds of brass. Hostling was done on 4,603 pieces of equipment, and shop and field repairs were made on 6,446 cars. In addition 822 cars were repaired in shop, and 1,236 light and six heavy repair jobs were done on equipment. The Balboa fuel oil handling plant handled 146,230.84 barrels, more than half of which were for The Panama Canal, and the plant at Mount Hope handled 11,489.16 barrels, practically all of which were for The Panama Canal.

#### Building Division.

In addition to the usual operation, maintenance, and repair work, the following construction work was in progress for the Army at the places named: *Fort Amador*—Two field officers' quarters, three two-family captains' quarters, two four-family lieutenants' quarters, four barracks, the storehouse, and the Naos Island storehouse. The field officers' quarters and the lieutenants' quarters were completed, and the barracks were 98 per cent completed at the close of the month. With the exception of the storehouses at Amador and Naos Island, the work at this post is practically completed. *Corozal*—Work was continued on the construction of the stables and Army sheds for artillery and cavalry, and on the modification of Canal quarters for the housing of the troops. *Margarita*—At Fort Randolph work was continued on the construction of eight lieutenants' quarters, three captains' quarters, one field officers' quarters, concrete water tank and sewage pumping station, and the 200,000-gallon water tank was completed. *Military Heights*—Work was continued on the construction of five type-8, one type-21, and one type-20, staff officers' quarters, and at the end of the month all of these buildings were under roof and approximately 60 per cent completed.

The following Canal structures were in the course of erection at the places named: *Ancon-Balboa*—Work was continued on the construction of all authorized frame and concrete quarters. The four type-14 buildings built under contract were completed and accepted. The work on the construction of the stables for the Panama Railroad Company on the Sandoval tract in the city of Panama was continued, and at the end of the month was 75 per cent completed. The construction of a crematory for Ancon Hospital, and of the new refrigerating plant at Balboa, were started.

*Corozal*—Work was commenced on the construction of seven 12-apartment colored family quarters on the Pedro Miguel-Miraflores road, and progressed satisfactorily. *Gatun and Colon*—The construction of the new Colon Hospital continued, and at the close of the month was approximately 20 per cent completed. The office building at Mount Hope storehouse was dismantled and reerected at Dock 9, Cristobal, as a main office for the receiving and forwarding agent.

#### Supply Department.

The force report for the half month ending August 25, 1915, showed a total of 25,064 employees of The Panama Canal and the Panama Railroad Company, of whom 3,506 were white Americans, and 21,558 were laborers. Of the latter approximately 201 were Europeans and the remainder West Indian negroes. There was a decrease of 1,445 laborers, and a decrease of 30 Americans, making a net decrease of 1,475.

The occupants of Government quarters numbered 6,748 Americans, of whom 3,741 were men, 1,486 women, and 1,521 children; and 7,947 West Indians, of whom 4,934 were men, 1,276 women, and 1,737 children.

The value of material received during the month was \$692,021. It came forward in 37 steamers; the total weight of cargo, exclusive of lumber and piles, was approximately 22,875 tons. Some of the principal items were 6,752,229 feet, board measure, of lumber for stock; 211,700 bags of Portland cement; and 103,505 linear feet of untreated piles.

#### Health Department.

*General*—No case of yellow fever, smallpox, or plague originated on or was brought to the Isthmus during the month. Fifty deaths occurred in the Canal Zone. The death rate for disease in the Canal Zone, based on a population of 30,219, was 18.26 per thousand as compared with 11.58 for the preceding month and 16.23 for the corresponding month of last year.

*Employees*—The health of employees continued good. The number of names on the payrolls for the preceding month was 36,024. On this basis the admission to hospitals and quarters, 1,007, gave a rate of 335.44 per thousand, as compared with 389.22 for the preceding month and 367.62 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites, 367.71; blacks, 127.30; and Americans, 291.91. The admission rates for malaria to hospitals and quarters were: Whites, 183.86; blacks, 55.81; and Americans, 147.40. The total number of deaths from all causes was 17. Of these 12 died from disease, or 3.99 per thousand, as compared with 3.34 for the preceding month and 3.26 for the corresponding month of last year. Two Americans died during the month.

#### Accounting Department.

The cash balance in Canal construction appropriations on August 31, 1915, was \$19,493,758.62, and in the fortification appropriations \$3,738,038.54. The payrolls for August, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$946,837.07, and the fortification roll amounted to \$75,963.33. Payments by the Disbursing Clerk in Washington amounted to \$892,377.14 and by the Paymaster on the Isthmus to \$1,390,532.51. Collections on the Isthmus, amounted to \$1,130,595.13, of which \$373,446.63 was repaid to appropriations, \$243,264.16 was commissary collections and other



trust funds, and \$513,885.34 was miscellaneous receipts to be covered into the Treasury. Of the miscellaneous receipts \$496,792.93 was collected on account of tolls, as compared with \$573,365.67 for the month of July. Deposits in the sum of \$410,956.01 were made with the Assistant Treasurer to be applied in payment of tolls and other charges against vessels using the Canal. Canal Zone revenue collections and miscellaneous funds received amounted to \$202,319.19, and the disbursements under the same heading amounted to \$271,486.72.

**Executive Department.**  
**DIVISION OF CIVIL AFFAIRS.**

One hundred and seventy-eight licenses of all kinds were issued. Twenty-five estates were received and 14 settled, the total cash received during the month amounting to \$560.34, and the total value of the estates closed being \$260.57. At the port of Balboa 109 vessels entered and 109 cleared, and at the port of Cristobal 166 vessels entered and 164 cleared.

**Postal service**—Postmasters remitted on account of stamp sales, second-class mail collections, postage due collections, and box rent receipts, \$7,969.72. Money orders issued during the month aggregated \$334,898.12. Of this total \$108,940 represents the value of deposit money orders issued without fee in lieu of postal savings certificates. Deposit money orders were paid to the value of \$103,480, and the postal savings certificates to the value of \$21,662. The balance of postal savings deposits on hand at the close of the month, represented by unpaid certificates and deposit money orders, aggregated \$441,995, as compared with \$458,197 at the close of the previous month.

**POLICE AND FIRE DIVISION.**

Three hundred and eighty-one arrests were made. Of this total 362 were males and 19 females. Fifty-eight convicts were confined in the penitentiary at the close of the month. Seven persons were deported, two of whom were convicts who had completed their sentences in the penitentiary, and five of whom were prisoners who had served their terms in jail.

Four fires occurred, and the damage to The Panama Canal and Panama Railroad property resulting therefrom amounted to \$5. Private property and the property of the United States Army suffered no damage.

**COURTS.**

In the District Court 67 cases were settled; seven civil, 20 probate, and 17 criminal cases were filed, and 89 cases of all kinds were pending at the close of the month. In the magistrates' courts 20 civil and 369 criminal cases were disposed of.

**DIVISION OF SCHOOLS.**

The schools were closed on June 30, 1915, for the summer vacation.

**Panama Railroad.**

The work on the terminal docks at Cristobal continued satisfactorily. Contract was let for approximately 216,000 square feet of roofing tile, at a contract price of \$35,084.65. Three hundred and five linear feet of steel cylinders were set, making a total of 22,065 linear feet, completing this class of work. There were removed from the cylinders 591.3 cubic yards of spoil, being 99 per cent of the required total amount. Twenty-four caissons were completed, and 2,598.1 cubic yards of

concrete were placed in cylinders. For the floor system 1,372,850 pounds of steel were erected, making a total of 1,467,850 pounds to date, or 13 per cent of the amount required.

The cargo handled at the Colon and Balboa agencies aggregated 137,519 tons, not including 19,064 tons of rehandled freight, of which total 4,425 tons were handled through the Canal on steamers of the Panama Railroad Steamship Line, as follows:

	Tons.
From New York to Balboa....	679
From Colon to Balboa.....	1,491
	<hr/> 2,170
From Balboa to New York....	1,937
From Balboa to Colon.....	318
	<hr/> 2,255

Total..... 4,425  
On account of the Canal being blocked on August 8th, 1,824 tons were handled by the Panama Railroad from Balboa to Colon.

During the month the following coal was delivered and trimmed in bunkers: Colon agency, 25,659 tons; Balboa agency, 4,766 tons; total, 30,425 tons.

Respectfully,  
**CHESTER HARDING, Acting Governor.**

**Examining the Water at Swimming Places.**

The physiologist of the Division of Municipal Engineering has begun the work of making analyses of samples of water from the various swimming places frequented by Canal employees and their families. This is to determine if the water is contaminated dangerously by sewage from the villages or from the ships passing through the Canal.

**Taking of Quarterly Inventory of Commissary Stores.**

In connection with the taking of the regular quarterly inventory the following commissary stores will be closed on Thursday, September 30, the grocery and cold storage sections to be opened at 10 a. m. in the morning of October 1, and the other departments as soon thereafter as possible: Cristobal, Gatun, Las Cascadas, Empire, Culebra, Paraiso, Pedro Miguel, Corozal, Ancon, Balboa, La Boca.

The following stores will be closed on September 30 only, and will be opened for business at the usual hour on October 1: Toro Point, Gamboa, Camp Bierd.

**Assignment of Teachers.**

In preparation for the opening of the Canal Zone schools on Monday, October 4, the Superintendent of Schools has prepared the following list of assignments of teachers in the various white schools. The grades indicated are necessarily provisional.

**Balboa high school**—Jessie E. Daniels, principal, Latin; M. L. Cloys, science and mathematics; Olga J. Frost, modern languages; Myrtle May Gallup, English, history, music; Elizabeth Burckleiser, commercial.

**Balboa grades**—Elise Cape, principal, first; Mary E. Fleming, second; Ha T. Hall, third; Nina P. Beeler, fourth; Edna M. Spencer, fifth; Dove L. Praeger, sixth; Ida B. Potts, seventh and eighth.

**Ancon**—Grace E. McCray, principal, first; Florence M. Dildine, second; Helen D. Parmelee, third; Minnie O. Russell, fourth; Mary F. Adams, fifth and sixth; Etta Reed, seventh and eighth.

**Corozal**—Mattie A. Frazier, first, second, and third. **Pedro Miguel**—Georgia T. Munroe, sixth, seventh, and eighth; Muriel K. Neal, fourth and fifth; Nelle M. Shea, first, second, and third.

**Paraiso**—Emma Eger, first, second, and third. **Empire**—Emma M. Cobban, principal, fourth, fifth, and sixth; Fanny F. Taylor, first, second, and third. **Gatun**—Mary M. Shea, principal, sixth, seventh, and

eighth; Annie E. Stone, (third), fourth, and fifth; Dora N. Beclim, first, second, and (third).

**Cristobal**—Katherine I. Davis, principal, high school and eighth; May L. Smith, high school and eighth; Fanny E. Cook, seventh (sixth); Adele Harrison, fifth (sixth); Ruth B. Beard, third and fourth; Beulah E. Schield, first and second.

**Colon Beach**—Miss Davis, principal—Edith M. McCarthy, first and second; Janet I. Hughes, third and fourth.

**Line teachers**—Shirley C. Dorsey, lower (post-office, Balboa); Ida O. Erickson, upper (post-office, Balboa).

**Supervisor industrial training**—Alanson H. Edgerton (post-office, Balboa Heights).

**Spanish in grades**—Lara K. Remon (post-office, Ancon).

**Deaf attention**, Paraiso—Pedro Miguel—Margaret Kelley (post-office, Paraiso).

**School at Empire for Children on West Side.**

Supplementing the previous notice concerning the grades and hours in the various schools, published in THE CANAL RECORD of last week, the following circular has been issued concerning the school on the west side of the Canal:

**THE PANAMA CANAL,  
DIVISION OF SCHOOLS.**

**BALBOA HEIGHTS, C. Z., September 24, 1915.**

*To all concerned*—School for white children living at Culebra, Empire, and Las Cascadas will be conducted at Empire for pupils of grades 1 to 6, inclusive. School hours will be as follows, with 30 minutes recess.

Grade 1—8 a. m. to 12 m.

Grades 2 and 3—8 a. m. to 12.30 p. m.

Grades 4 to 6—8 a. m. to 1 p. m.

Unless transportation is provided by the respective posts, the Camp Otis pupils will leave on the train arriving at Empire at 7.05 and return on the train leaving Empire at 12.55. Bus service will need to be arranged by the Camp Gaillard authorities, arriving at Empire by 8. These pupils can return on train leaving Empire at 1.15.

Seventh and eighth grade pupils living at these three towns will attend school at Pedro Miguel. They will take the train arriving at Pedro Miguel at 7.28 and return on the train leaving Pedro Miguel at 3.28. Special arrangement may be made for any of these pupils to leave Pedro Miguel on the 12.33 train if the parents or guardians so desire, and provided the afternoon subjects are studied at home and a special examination is taken in them.

Requests for the necessary passes should be sent to this office at once.

This is subject to such changes as conditions may warrant.

A. R. LANG,  
Superintendent of Schools.

Approved:  
C. A. McILVAINE,  
Executive Secretary.

**Dance at Taboga.**

Another dance will be held at the Hotel Aspinwall, Taboga, on Saturday evening, October 2. Refreshments, consisting of coffee, sandwiches, ice cream, and cake will be served during intermission, at a charge of 25 cents. In addition to the regular launch service, at 5.30 p. m., an extra boat will leave Balboa dredge landing at 8.10 p. m. on Saturday evening, to accommodate those who may come from the line. On Sunday the return trip may be made at 8 a. m., 3.30 p. m., and 7.15 p. m. The Captain of the Port of Balboa has agreed to furnish extra launches, if necessary.

**Higher Powered Lantern at Outer End of West Breakwater.**

A more powerful light is being installed at the outer end of the West Breakwater in Limon Bay. It is to have the same characteristics as the old light. The larger lantern has been adopted to make this aid more easily distinguishable from other lights marking the Atlantic entrance channel.

## NOTICE TO MARINERS.

## Lights on Pacific Side.

*Lights established*—The lights at Cape Mala, Bona Island, and Taboguilla Island have been established in the positions and with the characteristics as given in Notice to Mariners, circular No. 643-13, of April 8, 1915.

*Cape Mala*—This light was out from September 8, 1915, to September 14, 1915, due to failure of burner to function properly. It is now lighted with a temporary burner of reduced capacity, but neither the characteristics nor range of visibility has been altered.

*Bona Island*—This light was designed for

a range of visibility of 15 miles. Owing to its high altitude, reports indicate that it has been seen frequently 35 miles, and as far as 40 miles, depending on atmospheric condition.

CHESTER HARDING, *Acting Governor*.  
BALBOA HEIGHTS, C. Z., September 17, 1915.

## RETAIL HARDWARE PRICE LIST.

## Commissary Branch of Supply Department.

There is published below the retail hardware price list No. 1, effective October 1, 1915, governing the prices of articles sold in the hardware departments of the commissary stores. The prices are those at which the items will be sold to Canal employees and other residents of Isthmus who have commissary privileges. These prices will be increased by 10 per cent in cases of sales to commercial vessels and ships of foreign navies, and by 20 per cent in cases of sales to yachts.

The retail grocery list now in effect, No. 2, was published in THE CANAL RECORD of July 28, 1915. The retail price list of leather goods was published in THE CANAL RECORD of September 1, 1915.

S. N.	Article.	Unit.	Price	S. N.	Article.	Unit.	Price.
27355	Arms, towel ( <i>see</i> Racks).			27993	Bowls, salad, 36's, Doulton.	Each	\$0.24
	Bags penknife.	Each	\$0.05	28474	Bowls, salad, decorated crystal.	Each	4.00
	Bars, clothes ( <i>see</i> Racks).			28578	Bowls, salad, D-3191, Doulton.	Each	1.10
	Bars, towel ( <i>see</i> Racks).			23827	Bowls, seamless, enamel, 1-quart.	Each	.11
27464	Basins, wash, enamel.	Each	.23	26553	Bowls, seamless, enamel, 1-pint.	Each	.08
27298	Beakers, small, No. 3804, Doulton.	Each	.23	28155	Bowls, slop, No. 4772, Doulton.	Each	.45
25365	Beaters, egg, revolving, small.	Each	.05	25585	Bowls, slop, No. 6131, Booth.	Each	.17
27559	Beaters, egg, revolving, large.	Each	.13	27598	Bowls, soup, 13-pint, Luria.	Each	.18
35121	Beds, iron single.	Each	2.15	25164	Bowls, sugar, pressed glass.	Each	.12
35127	Beds, iron, double.	Each	3.35	27567	Bowls, sugar, No. 1935, Minton.	Each	2.60
35133	Beds, iron, double.	Each	6.65	27576	Bowls, sugar, No. 4807, Minton.	Each	1.10
25369	Bells, hand.	Each	.18	27582	Bowls, sugar, No. 8721, Minton.	Each	2.15
25828	Biggins, coffee, enamel, 1-pint.	Each	.39	27596	Bowls, sugar, 1-pint, Luria.	Each	.21
25954	Biggins, coffee, enamel, 1-quart.	Each	.44	27673	Bowls, sugar, No. 6131, Booth.	Each	.53
28388	Biggins, coffee, aluminum, 1-quart.	Each	2.10	27766	Bowls, sugar, No. 7811, Booth.	Each	.86
28389	Biggins, coffee, aluminum, 2-quart.	Each	2.25	28299	Bowls, sugar, No. 4772, Doulton.	Each	.80
25635	Blades, safety razor, Gillette.	Set	.78	28427	Bowls, sugar, Y-2715, Wedgwood.	Each	.89
27155	Blades, safety razor, Gen Cutter.	Pkg.	.23	28431	Bowls, sugar, Y-6023, Wedgwood.	Each	.89
27266	Blades, safety razor, Ever Ready.	Set	.47	28612	Bowls, sugar, No. 6262, Minton.	Each	2.75
28311	Blades for Auto Strop razor.	Set	.79	28452	Boxes, bread, 15", jappanned.	Each	.54
28327	Boards, ironing, with felt.	Each	.70	28348	Boxes, sugar, jappanned.	Each	.67
25822	Boards, pastry, 20" x 30".	Each	.20	26127	Broilers, wire.	Each	.55
28331	Boards, pastry, 20" x 26".	Each	.44	27945	Brooms, corn.	Each	.34
28326	Boards, wash.	Each	.77	26214	Brooms, floor, hair, with handle.	Each	.91
27595	Boats, sauce, with tray, Luria.	Each	.51	25299	Brushes, counter, hair.	Each	.26
27578	Boats, sauce, with tray, No. 4807, Minton.	Each	1.80	27231	Brushes, deck scrub, with handle.	Each	.23
27726	Boats, sauce, with tray, No. 8721, Minton.	Each	3.85	25793	Brushes, hand scrub.	Each	.03
27781	Boats, sauce, with tray and ladle, No. 7881, Booth.	Each	2.10	25298	Brushes, stove, with handle.	Each	.10
27786	Boats, sauce, with tray, No. 1931, Minton.	Each	3.95	28357	Brushes, varnish, flat, 1 1/2".	Each	.41
28586	Boats, sauce, without tray, No. 6131, Booth.	Each	.21	28358	Brushes, varnish, flat, 2".	Each	.59
28214	Boilers, milk, 1-quart, aluminum.	Each	1.55	28359	Brushes, varnish, flat, 2 1/2".	Each	.85
28215	Boilers, milk, 2-quart, aluminum.	Each	1.85	28445	Brushes, varnish, flat, 1".	Each	.29
28384	Boilers, milk, 1-quart, aluminum.	Each	1.00	26555	Buckets, covered, 2-quart, enamel.	Each	.22
28385	Boilers, milk, 2-quart, aluminum.	Each	1.30	27454	Buckets, covered, 3-quart, enamel.	Each	.45
27122	Boilers, rice, 2-quart, enamel.	Each	.66	26191	Buckets, 14-quart, galvanized.	Each	.30
25275	Boilers, wash, No. 209.	Each	1.20	26642	Buckets and mop wringer.	Each	1.30
25817	Boilers, wash, No. 208.	Each	1.05	27718	Bulbs, electric light, Tungsten.	Each	.29
27714	Bottles, bird cage.	Each	.04	26284	Burners, lamp, Venus.	Each	.07
27621	Bottles, nursing, Cleaneasy.	Each	.04	28297	Burners for percolators, without wick.	Each	.08
25269	Bottles, oil or vinegar, plain glass.	Each	.14	25412	Cages, bird, No. 1.	Each	1.35
27979	Bottles, vacuum, pints.	Each	1.15	25413	Cages, bird, No. 2.	Each	1.15
27981	Bottles, vacuum, quarts.	Each	1.95	25836	Cages, bird, No. 3.	Each	.95
26981	Bottles, vinegar, decorated crystal.	Each	2.10	25511	Cages, bird, No. 4.	Each	.60
25246	Bowls, berry, pressed glass.	Each	.16	28512	Cages, bird, No. 5.	Each	.45
27482	Bowls, custard, 3/4-pint, enamel.	Each	.10	28629	Canister, glass, for coffee mill.	Each	.27
27331	Bowls, finger, decorated crystal.	Each	1.05	28475	Caraffes, 1-quart, decorated crystal.	Each	3.35
27847	Bowls, sugar, crystal.	Each	.13	27128	Carriages, baby, "Sulkies".	Each	1.30
25826	Bowls, mixing, 3/4-quart, agate.	Each	.19	28134	Carriages, baby, collapsible.	Each	6.60
25227	Bowls, mixing, 4-quart, earthen.	Each	.20	28135	Carriages, baby, collapsible.	Each	7.45
25228	Bowls, mixing, 2-quart, earthen.	Each	.14	28449	Carriages, baby, doll carts.	Each	1.45
25795	Bowls, mixing, 1-quart, earthen.	Each	.06	28451	Carriages, baby, coach body.	Each	9.25
25796	Bowls, mixing, 6-quart, earthen.	Each	.30	28483	Carriages, baby, go-baskets, No. 6.	Each	7.15
28156	Bowls, punch, on foot, No. 3804, Doulton.	Each	2.40	28484	Carriages, baby, go-baskets, No. 6-R.	Each	8.75
28157	Bowls, punch, no feet, No. 3804, Doulton.	Each	2.20	28497	Carriages, baby, sulkies.	Each	3.95
27341	Bowls, salad, 8", Doulton.	Each	.96	28553	Carriers, dinner, 3-quart compartment.	Each	1.00
27342	Bowls, salad, 7", Doulton.	Each	1.30		Carts, doll ( <i>see</i> Baby carriages).		

S. N.	Article.	Unit	Price.	S. N.	Article.	Unit	Price
35134	Cases, penknife (see Bags).			26223	Cuspidors, agate.	Each	\$0.29
25267	Cellars, sat, individual.	Each	\$0.03	25775	Cutters, biscuit, tin.	Each	.02
25364	Chains, pot, double.	Each	.05	28454	Cutters, ice, Silver's, No. 2.	Each	2.65
27474	Chambers, agate.	Each	.22	28476	Decanters, 1-quart, decorated crystal.	Each	3.85
25515	Chimneys for Juno table lamp.	Each	.10	28485	Decanters, 1-pint, decorated crystal.	Each	2.90
25517	Chimneys for Imperial student lamp.	Each	.13	27362	Dippers, 1-pint, agate.	Each	.10
25518	Chimneys for Berlin student lamp.	Each	.07		Dishes (see also Platters).		
25723	Chimneys, lamp, beaded top.	Each	.02	27617	Dishes, bakers, 10", Luria.	Each	.33
25843	Chimneys for Rochester lamp.	Each	.14	27668	Dishes, bakers, 7", No. 6131, Booth.	Each	.25
	Choppers (see also Cutters).			27724	Dishes, bakers, 8", G-8721, Minton.	Each	2.65
27274	Choppers, food, Universal, No. 1.	Each	.75	27725	Dishes, bakers, 10", G-8721, Minton.	Each	2.95
28328	Choppers, food, Universal, No. 3.	Each	1.45	27727	Dishes, bakers, 8", A-4807, Minton.	Each	1.05
6387	Clocks, alarm, Startle.	Each	1.00	27728	Dishes, bakers, 10", A-4807, Minton.	Each	1.45
8967	Clocks, alarm, Prompter.	Each	1.30	27729	Dishes, bakers, 9", A-4807, Minton.	Each	1.15
28129	Clocks, alarm, Simplex.	Each	1.80	27762	Dishes, bakers, 10", No. 7881, Booth.	Each	.75
28561	Clocks, alarm, Bingo.	Each	1.40	27763	Dishes, bakers, 12", No. 7881, Booth.	Each	.76
25582	Collanders, 10", agate.	Each	.17	27783	Dishes, bakers, 8", No. 7881, Booth.	Each	.65
	Collars for New Perfection stoves (see Stove parts).			27784	Dishes, bakers, 8", No. 1935, Minton.	Each	2.80
27236	Cookers, fireless (see Stoves).			27785	Dishes, bakers, 10", No. 1935, Minton.	Each	3.10
27381	Coolers, water, japanned, 2-gal.	Each	1.05	27957	Dishes, bakers, 9", Meakin.	Each	.09
27434	Coolers, water, japanned, 4-gal.	Each	1.40	28518	Dishes, bakers, 8", No. 3480.	Each	.25
28363	Coolers, water, japanned, 8-gal.	Each	2.40	28519	Dishes, bakers, 10", No. 3480.	Each	.44
27558	Corkscrews, nickel plated.	Each	.18	28532	Dishes, bakers, 8", No. 3140.	Each	.23
27732	Corkscrews, self-pulling.	Each	.15	28533	Dishes, bakers, 8", No. 3178.	Each	.17
35118	Cots, folding.	Each	2.35	28546	Dishes, bakers, 10", No. 3178.	Each	.33
28221	Covers for saucepans, 4", aluminum.	Each	.10	28596	Dishes, bakers, 12", H-1935, Minton.	Each	5.20
28222	Covers for saucepans, 5", aluminum.	Each	.15	28619	Dishes, bakers, 8", No. 6262, Minton.	Each	3.10
28223	Covers for saucepans, 5½", aluminum.	Each	.19	28621	Dishes, bakers, 9", No. 6262, Minton.	Each	3.15
28224	Covers for saucepans, 7", aluminum.	Each	.23	27116	Dishes, berry, decorated crystal.	Each	1.95
28225	Covers for saucepans, 8", aluminum.	Each	.25	27384	Dishes, butter, pressed glass.	Each	.14
28226	Covers for saucepans, 8½", aluminum.	Each	.27	27695	Dishes, butter, No. 6131, Booth.	Each	.55
28227	Covers for saucepans, 9", aluminum.	Each	.55	27774	Dishes, butter, No. 7881, Booth.	Each	.82
28272	Covers for saucepans, 5", aluminum.	Each	.08	26779	Dishes, fern, 8", with lining, Wedgwood.	Each	2.40
28373	Covers for saucepans, 6½", aluminum.	Each	.10	27388	Dishes, fern, 6", with lining, Wedgwood.	Each	1.65
28374	Covers for saucepans, 7½", aluminum.	Each	.13	27493	Dishes, fern, 4", with lining, Wedgwood.	Each	1.25
28375	Covers for saucepans, 8½", aluminum.	Each	.16	27614	Dishes, oatmeal, 6", Luria.	Each	.08
28376	Covers for saucepans, 8½", aluminum.	Each	.18	25255	Dishes, olive, cut glass.	Each	1.10
28377	Covers for saucepans, 10", aluminum.	Each	.23	27694	Dishes, olive, No. 6131, Booth.	Each	.30
35242	Cribs, baby, white enamel.	Each	5.30	28522	Dishes, olive, No. 3480.	Each	.30
28487	Cups, custard, decorated crystal.	Each	.70	28535	Dishes, olive, No. 3140.	Each	.27
27235	Cups, drinking, sanitary.	Doz.	.01	28548	Dishes, olive, No. 3178.	Each	.22
27518	Cups, drinking, agate, 1-quart.	Each	.15	28335	Dishes, sauce, 5½", plain white.	Each	.06
27963	Cups, drinking, enamel, 1-pint.	Each	.11	28112	Dishes, sauce, 5½", Luria.	Each	.07
27679	Cups, egg, No. 6131, Booth.	Each	.07	25774	Dishes soap, wall, agate.	Each	.09
27771	Cups, egg, No. 7881, Booth.	Each	.11	27594	Dishes, vegetable, 10", Luria.	Each	1.25
27955	Cups, punch, glass.	Each	.06	28521	Dishes, vegetable, 9½", No. 3480.	Each	1.20
25839	Cups and saucers, Y-2715, Wedgwood.	Each	.31	28534	Dishes, vegetable, 9½", No. 3140.	Each	1.10
26695	Cups and saucers, plain white.	Each	.05	28547	Dishes, vegetable, 9½", No. 3178.	Each	.78
26936	Cups and saucers, tea, No. 1935, Minton.	Each	1.60	28424	Drainers dish, galvanized wire.	Each	.16
26937	Cups and saucers, after dinner, No. 1935, Minton.	Each	1.50	25317	Drums for New Perfection stoves (see Stove parts).		
26938	Cups and saucers, after dinner, No. 8721, Minton.	Each	1.35	27949	Dusters, feather.	Each	1.15
26948	Cups and saucers, after dinner, No. 4807, ribbed.	Each	.47		Dusters, wall, Howard.	Each	1.60
26952	Cups and saucers, after dinner, No. 4807, plain.	Each	.39		Dustpans (see Pans).		
27353	Cups and saucers, tea, No. 3804, Doulton.	Each	.41		Egg beaters (see Beaters).		
27541	Cups and saucers, tea, Luria.	Each	.12	27519	Extractors, juice, glass.	Each	.06
27561	Cups and saucers, bouillon, A-4807, Minton.	Each	.53	28352	Fillers, vacuum bottle, pint.	Each	.71
27562	Cups and saucers, tea, A-4807, Minton.	Each	.41	28353	Fillers, vacuum bottle, quart.	Each	1.15
27566	Cups and saucers, bouillon, H-1935, Minton.	Each	1.85	26568	Filters, Gate City, No. 8.	Each	4.05
27568	Cups and saucers, bouillon, G-8721, Minton.	Each	1.65		Flame spreaders for New Perfection stove (see Stove parts).		
27672	Cups and saucers, tea, No. 6131, Booth.	Each	.12	27222	Forks, dessert, old English, silver plated.	Each	.25
27764	Cups and saucers, tea, No. 7881, Booth.	Each	.19	28117	Forks, dessert, Jacobean, silver plated.	Each	.40
27972	Cups and saucers, tea, C-4772, Doulton.	Each	.20	28344	Forks, desert, Windsor, silver plated.	Each	.16
28525	Cups and saucers, tea, No. 3480.	Each	.22	28126	Forks, dinner, Jacobean, silver plated.	Each	.45
28538	Cups and saucers, tea, No. 3140.	Each	.20	28577	Forks, dinner, Grecian, silver plated.	Each	.41
28552	Cups and saucers, No. 3178.	Each	.16	25595	Forks, dinner, Tudor, silver plated.	Each	.28
28584	Cups and saucers, after dinner, No. 6131, Booth.	Each	.11	25594	Forks, dinner, Windsor, silver plated.	Each	.11
28599	Cups and saucers, tea, G-6262, Minton.	Each	1.80	28121	Forks, oyster, Jacobean, silver plated.	Each	.24
28611	Cups and saucers, bouillon, No. 6262, Minton.	Each	2.05	25847	Freezers, ice cream, 1-quart.	Each	1.45
				26279	Freezers, ice cream, 2-quart.	Each	1.65
				25966	Freezers, ice cream, 3-quart.	Each	2.00
				25967	Freezers, ice cream, 4-quart.	Each	2.35
				28318	Freezers, ice cream, 6-quart.	Each	3.30
				26887	Freezers, ice cream 8-quart.	Each	3.90
				26565	Funnel, 1-pint, agate.	Each	.13



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
28298	Funnels, 1-quart, agate.....	Each	\$0.15	27581	Jugs, cream, No. 1935, Minton.....	Each	\$1.55
26978	Glasses, champagne, decorated crystal.....	Each	.70	27597	Jugs, cream, 1-pint, Luria.....	Each	.09
28287	Glasses, champagne, half crystal.....	Each	.18	27689	Jugs, cream, 1-pint, No. 6131, Booth.....	Each	.25
26979	Glasses, claret, decorated crystal.....	Each	.70	27765	Jugs, cream, 1-pint, No. 7881, Booth.....	Each	.49
28285	Glasses, claret, half crystal.....	Each	.08	28428	Jugs, cream, Y-2715, Wedgwood.....	Each	.43
24286	Glasses, claret, half crystal.....	Each	.08	28432	Jugs, cream, No. 6923, Wedgwood.....	Each	.43
27328	Glasses, cocktail, decorated crystal.....	Each	.70	28613	Jugs, cream, No. 6262, Minton.....	Each	1.70
27288	Glasses, cocktail, crystal.....	Each	.08	28623	Jugs, cream, G-8721, Minton.....	Each	1.45
25676	Glasses, lemonade, crystal.....	Each	.07	25874	Jugs, Don, A-1147, Doulton.....	Each	1.40
28327	Glasses, lemonade, crystal.....	Each	.06	26652	Jugs, Don, A-1147, Doulton.....	Each	1.75
28462	Glasses, lemonade, decorated crystal.....	Each	1.00	27531	Jugs, Don, No. 2391, Doulton.....	Each	.68
27555	Glasses, liquor, decorated crystal.....	Each	.61	27532	Jugs, Don, No. 2391, Doulton.....	Each	.51
28292	Glasses, liquor, half crystal.....	Each	.05	27533	Jugs, Don, No. 2391, Doulton.....	Each	.38
28486	Glasses, liquor, decorated crystal.....	Each	.48	28579	Jugs, Ice, Peary, D-3751.....	Each	1.20
28455	Glasses, measuring.....	Each	.09	28581	Jugs, Newlyn, D-3751.....	Each	.72
28291	Glasses, sherbert, half crystal.....	Each	.14	26771	Jugs, orange shape, Wedgwood.....	Each	.67
25237	Glasses, sherry.....	Each	.14	27999	Jugs, Premier, No. 2779, Doulton.....	Each	.70
26977	Glasses, sherry, decorated crystal.....	Each	.60	27534	Jugs, Rocket, No. 3804, Doulton.....	Each	1.10
28289	Glasses, sherry, half crystal.....	Each	.07	26644	Jugs, Scotia, 2-quart, Doulton.....	Each	.47
28283	Glasses, water (goblets), half crystal.....	Each	.09	26645	Jugs, Scotia, 3-quart, Doulton.....	Each	.38
28284	Glasses, water (goblets), half crystal.....	Each	.09	26646	Jugs, Scotia, 1-quart, Doulton.....	Each	.28
26987	Glasses, water (tumblers), decorated crystal.....	Each	.66	27545	Jugs, Simon, No. 2326, Doulton.....	Each	.74
27372	Glasses, water (tumblers), half crystal.....	Each	.06	25447	Kettles, Berlin, 2-quart.....	Each	.28
28235	Glasses, water (tumblers), half crystal.....	Each	.04	26557	Kettles, Berlin, 3-quart.....	Each	.33
28236	Glasses, water (tumblers), half crystal.....	Each	.04	26558	Kettles, Berlin, 4-quart.....	Each	.39
28237	Glasses, water (tumblers), half crystal.....	Each	.06	26559	Kettles, Berlin, 6-quart.....	Each	.47
28238	Glasses, water (tumblers), half crystal.....	Each	.07	26561	Kettles, Berlin, 8-quart.....	Each	.57
28281	Glasses, water (tumblers).....	Each	.03	25431	Kettles, Berlin, 10-quart.....	Each	.66
28282	Glasses, water (tumblers).....	Each	.03	25859	Kettles, tea, 2-quart, agate.....	Each	.35
28488	Glasses, water (tumblers), decorated crystal.....	Each	.67	28216	Kettles, tea, 2-quart, aluminum.....	Each	1.35
25241	Glasses, whiskey, light.....	Each	.03	26153	Kettles, tea, 3-quart, enamel.....	Each	.46
26988	Glasses, whiskey, decorated crystal.....	Each	.45	25361	Kettles, tea, 4-quart, enamel.....	Each	.52
25837	Globes for Dietz lanterns.....	Each	.08	28217	Kettles, tea, 4-quart, aluminum.....	Each	1.70
	Go-baskets (see Carriages, baby).....			27445	Kettles, tea, 6-quart, enamel.....	Each	1.55
25362	Graters, combination.....	Each	.07	28382	Kettles, tea, 6-quart, aluminum.....	Each	2.55
25363	Graters, nutmeg.....	Each	.05	28383	Kettles, tea, 8-quart, aluminum.....	Each	2.85
28345	Griddles, cake.....	Each	.56	26237	Knives, butcher, 6".....	Each	.13
25281	Hammers, claw.....	Each	.42	28164	Knives, butcher, 10".....	Each	.48
27794	Hammers, tack.....	Each	.21	28165	Knives, butcher, 10".....	Each	.43
25519	Handles for floor brushes.....	Each	.11	28119	Knives, butter, Jacobean.....	Each	.35
25851	Handles, mop.....	Each	.16	28173	Knives, carving, ebony handle.....	Each	1.45
27623	Handles, sadiron.....	Each	.06	27276	Knives, cook, French, 8".....	Each	.40
28423	Hangers, coat, wood.....	Each	.03	27716	Knives, cook, French, 10".....	Each	.57
27964	Hangers, coat and pant, combination, wire.....	Each	.13	27172	Knives, dessert, silver plated.....	Each	.11
28398	Hangers, dress, women's, wood.....	Each	.07	28118	Knives, dessert, Jacobean, silver plated.....	Each	.84
5991	Hangers, garment, wood.....	Each	.22	28125	Knives, dinner, Jacobean, silver plated.....	Each	.93
27966	Hangers, pant, No. 18, wire.....	Each	.14	28169	Knives, peeling.....	Each	.09
8931	Hangers, suit, No. 7, wood.....	Each	.06	28171	Knives, peeling.....	Each	.11
27159	Hatchets, claw.....	Each	.50	28232	Knives, peeling.....	Each	.05
	Heads, mop (see Mops).....			28393	Knives, pocket, Boy Scout.....	Each	1.00
25585	Hods, coal.....	Each	.10	25599	Knives, pocket, horn handle.....	Each	.17
	Holders, match (see Stands).....			25612	Knives, pocket, horn handle.....	Each	.39
28395	Holders, soap, hanging, for bathtub, nickel plated.....	Each	.40	25615	Knives, pocket, pearl handle.....	Each	1.00
28397	Holders, soap, wall, nickel plated.....	Each	1.05	26432	Knives, pocket, ivory handle.....	Each	.80
25266	Holders, toothpick, glass.....	Each	.04	26623	Knives, pocket, horn handle.....	Each	.24
26334	Holders, twine, metal.....	Each	.23	26624	Knives, pocket, pearl handle.....	Each	.80
26483	Hooks, coat and hat, wire.....	Doz.	.04	26736	Knives, pocket, pearl handle.....	Each	1.11
25348	Hooks, cup, brass, 1".....	Doz.	.05	26737	Knives, pocket, ivory handle.....	Each	.52
25351	Hooks, cup, brass, 1 1/2".....	Doz.	.09	26738	Knives, pocket, ivory handle.....	Each	.50
25352	Hooks, cup, brass, 2".....	Doz.	.26	26739	Knives, pocket, ivory handle.....	Each	.63
28361	Hooks, gate, brass, 4".....	Each	.03	26741	Knives, pocket, pearl handle.....	Each	.98
26121	Hooks, hammock.....	Doz.	.28	27167	Knives, pocket, ivory handle.....	Each	.09
28336	Hooks, picture, brass.....	Doz.	.03	27168	Knives, pocket.....	Each	.72
25349	Hooks, screw, 3/4", brass.....	Doz.	.04	27169	Knives, pocket, ivory handle.....	Each	.80
25353	Hooks, screw, 7/8", brass.....	Doz.	.04	27177	Knives, pocket, pearl handle.....	Each	.73
25354	Hooks, screw, 1", brass.....	Doz.	.05	25597	Knives, table, Tudor, silver plated.....	Each	.74
26682	Hooks, towel, porcelain.....	Each	.09	27166	Knives, table, silver plated.....	Each	.14
25493	Irons, sad, with handle and stand, 3 irons.....	Set	.85	25592	Knives and forks, white bone handle.....	Set	2.52
27382	Irons, waffle.....	Each	.70	27553	Knives and forks, carving, stag handle.....	Set	1.30
	Jap-a-lac (see Polish).....			27554	Knives and forks, carving, with steel, stag handle.....	Set	2.50
28159	Jugs, 24's, No. 2567, Doulton.....	Each	.60	28499	Ladles, 1/2-pint, aluminum.....	Each	.09
28162	Jugs, 12's, No. 2568, Doulton.....	Each	.96	25522	Lamps, table, Juno.....	Each	1.75
28465	Jugs, claret, decorated crystal.....	Each	4.80	25586	Lanterns, Dietz.....	Each	.38
27539	Jugs, Concord, No. 2694, Doulton.....	Each	.35		Lids for saucapans (see Covers).....		
28582	Jugs, Concord, D-3647.....	Each	.82	25372	Litters, stove cover.....	Each	.04
27575	Jugs, cream, A-4807, Minton.....	Each	.60	27332	Line, clothes.....	Hand	.43

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
25357	Locks, Yale, 1".....	Each	\$0.62	25448	Pans, sauce, 8-quart, enamel.....	Each	\$0.58
27935	Locks, Yale, 1½", No. 801-B.....	Each	.63	25466	Pans, sauce, 2-quart, enamel.....	Each	.29
25369	Locks, Yale, 1½", No. 803-B.....	Each	.78	26178	Pans, sauce, 3-quart, enamel.....	Each	.26
27986	Locks, Yale, 1½", No. 803-B.....	Each	.78	26179	Pans, sauce, 10-quart, enamel.....	Each	.68
27983	Locks, Yale, 1½", No. 830.....	Each	.83	26564	Pans, sauce, 4-quart, enamel.....	Each	.38
25358	Locks, Yale, 2".....	Each	2.05	27449	Pans, sauce, 6-quart, enamel.....	Each	.50
25355	Locks, Yale, 2".....	Each	.97	28211	Pans, sauce, 7", aluminum.....	Each	.88
27984	Locks, Yale, 2", No. 850.....	Each	1.45	28212	Pans, sauce, 8", aluminum.....	Each	1.00
27987	Locks, Yale, 2".....	Each	.79	28213	Pans, sauce, 8½", aluminum.....	Each	1.29
25356	Locks, Yale, 3".....	Each	2.05	28366	Pans, sauce, ½-pint, aluminum.....	Each	.22
	Marking sets, laundry (see Sets).			28367	Pans, sauce, 1-quart, aluminum.....	Each	.28
25483	Mashers, potato, wood.....	Each	.06	28368	Pans, sauce, 1½-quart, aluminum.....	Each	.38
6961	Mats, door, cocoa fiber, 25" x 41".....	Each	2.50	28369	Pans, sauce, 2½-quart, aluminum.....	Each	.50
7682	Mats, door, cocoa fiber, 18" x 28".....	Each	1.30	28371	Pans, sauce, 3-quart, aluminum.....	Each	.63
6621	Matting, 36", Japanese, blue.....	Yard	.19	28378	Pans, sauce, 1-quart, aluminum.....	Each	.46
28479	Matting, 36", Japanese, green.....	Yard	.19	28379	Pans, sauce, 4-quart, aluminum.....	Each	.97
28481	Matting, 36", Japanese, brown.....	Yard	.19	28381	Pans, sauce, 6-quart, aluminum.....	Each	1.15
35111	Mattresses, hair, single.....	Each	7.50		Paste, polishing, (see Polish).		
35112	Mattresses, fiber, double.....	Each	5.25	25499	Percolators, No. 01.....	Each	5.45
35113	Mattresses, fiber, single.....	Each	3.30	25511	Percolators, No. 005.....	Each	6.25
35243	Mattresses, baby crib.....	Each	4.05	25585	Percolators, No. 059.....	Each	7.15
35329	Mattresses, hair, double.....	Each	18.20	27156	Picks, ice.....	Each	.08
25437	Measures, ½-pint, agate.....	Each	.14	35115	Pillows, feather.....	Each	1.20
25439	Measures, 1-quart, agate.....	Each	.19	35114	Pillows, hair.....	Each	.95
25441	Measures, ½-gallon, agate.....	Each	.29	25586	Pins, clothes.....	Doz.	.02
28355	Measures, 1-pint, agate.....	Each	.15	28433	Pins, rolling, wood.....	Each	.15
	Measuring glasses (see Glasses).			26482	Pipe cleaners.....	Each	.01
27165	Mills, coffee, 1-lb., glass canister.....	Each	.50	28341	Pipes, briar.....	Each	.12
25798	Mixers, liquor, nickel plated.....	Each	.80	28342	Pipes, briar.....	Each	.16
28421	Mops, dish.....	Each	.05	28343	Pipes, briar.....	Each	.21
27947	Mops, dust, Howard.....	Each	1.25	27152	Pipes, calabash.....	Each	1.16
25791	Mops, heads only.....	Each	.11	27286	Pipes, calabash.....	Each	3.00
27292	Mops, heads only.....	Each	.05	26481	Pipes, clay.....	Each	.01
28554	Mops, with handles, O'Cedar.....	Each	.95	25226	Pipes, cob.....	Each	.02
	Mop wringer and bucket (see Buckets).			26664	Pipes, meerschaum.....	Each	4.00
27425	Mugs, Jubilee, small, Doulton.....	Each	.26	26665	Pipes, meerschaum.....	Each	3.40
25165	Mugs, shaving, gold band.....	Each	.12	26666	Pipes, meerschaum.....	Each	4.60
27153	Nails, upholstering.....	Pkg.	.07	28558	Pipes, meerschaum.....	Each	5.00
26982	Nappies, cut glass.....	Each	.75	25244	Pitchers, 1½-quart, plain glass.....	Each	.25
27428	Nappies, pressed glass.....	Each	.05	26699	Pitchers, 3-quart, agate.....	Each	.78
28463	Nappies, glass, decorated crystal.....	Each	1.30	26756	Pitchers, 4-quart, agate.....	Each	.51
27624	Nipples for nursing bottles.....	Each	.03	27799	Pitchers, 2-quart, plain glass.....	Each	.31
26628	Oil, Three-in-One.....	Bot.	.07	28477	Pitchers, glass, decorated crystal.....	Each	4.80
25336	Oilers, sewing machine.....	Each	.05	26698	Plates, bread and butter, Meakin.....	Each	.03
25365	Openers, can, Never Slip.....	Each	.07	27157	Plates, bread and butter, Wedgwood.....	Each	.20
27971	Openers, can.....	Each	.05	27195	Plates, bread and butter, No. 8721, Minton.....	Each	.97
	Ovens for New Perfection stoves (see Stove parts).			27213	Plates, bread and butter, H-1935, Minton.....	Each	1.15
	Padlocks, (see Locks).			27216	Plates, bread and butter, A-4807, Minton.....	Each	.35
	Pails, dinner, (see Carriers).			27418	Plates, bread and butter, Doulton.....	Each	.38
	Pails (see also Buckets).			27542	Plates, bread and butter, Luria.....	Each	.09
25581	Pails, Chamber.....	Each	.70	27586	Plates, bread and butter, G-6262, Minton.....	Each	1.15
28414	Pails, plant, 11" x 9".....	Each	.40	27657	Plates, bread and butter, No. 6131, Booth's.....	Each	.08
26567	Pans, bread, 9½" x 4½" x 3", agate.....	Each	.15	27772	Plates, bread and butter, No. 7881, Booth's.....	Each	.26
25792	Pans, dish, 10-quart, enameled.....	Each	.40	27995	Plates, bread and butter, 6", E-4772, Doulton.....	Each	.20
26563	Pans, dish, 14-quart, enameled.....	Each	.47	28516	Plates, bread and butter, No. 3480.....	Each	.03
25778	Pans, drip, 9" x 14".....	Each	.03	28529	Plates, bread and butter, No. 3140.....	Each	.03
27618	Pans, drip, 9" x 14", enameled.....	Each	.38	28543	Plates, bread and butter, No. 3178.....	Each	.06
28409	Pans, drip, 12½" x 17½".....	Each	.29	26767	Plates, breakfast, 8", Coalport's.....	Each	1.20
27129	Pans, dust, tin, Japanese.....	Each	.13	26926	Plates, breakfast, 9", Minton.....	Each	1.40
28408	Pans, dust, tin, Japanese.....	Each	.07	26927	Plates, breakfast, 8", No. H-1935, Minton.....	Each	1.55
25395	Pans, fry, 8½", steel, lippe.....	Each	.07	26928	Plates, breakfast, 9", No. 4807, Minton.....	Each	.50
25393	Pans, fry, 10", steel, lippe.....	Each	.09	28513	Plates, breakfast, No. 3480.....	Each	.14
26641	Pans, fry, 12", steel.....	Each	.12	28526	Plates, breakfast, No. 3140.....	Each	.13
28386	Pans, fry, 7", aluminum.....	Each	.46	28539	Plates, breakfast, No. 3178.....	Each	.10
28387	Pans, fry, 8½", aluminum.....	Each	.63	27615	Plates, cake, 10", Luria.....	Each	.25
25534	Pans, jelly cake, 8", tin.....	Each	.03	27681	Plates, cake, No. 6131, Booth.....	Each	.20
27357	Pans, jelly cake, 10", enamel.....	Each	.13	28391	Plates, cake, C-4772, Doulton.....	Each	.39
27358	Pans, jelly cake, 10", enamel.....	Each	.13	28425	Plates, cake, No. 7881, Booth.....	Each	.26
27124	Pans, muffin, 8-cup, enamel.....	Each	.27	28587	Plates, coupé, 8", G-8721.....	Each	1.45
27125	Pans, muffin, 12-cup.....	Each	.36	28592	Plates, coupé, 8", A-4807.....	Each	.41
28228	Pans, omelet, 8", aluminum.....	Each	.52	28597	Plates, coupé, 8", H-1935.....	Each	1.55
28191	Pans, poache 1 egg, aluminum.....	Each	.75	26922	Plates, dessert, No. 1935, Minton.....	Each	1.30
28362	Pans, poached egg, aluminum.....	Each	.49	27153	Plates, dessert, 7", Wedgwood.....	Each	.35
25443	Pans, pudding, 2-quart, enamel.....	Each	.13	27215	Plates, dessert, 7", A-4807, Minton.....	Each	.45
25444	Pans, pudding, 1-quart, enamel.....	Each	.11	27296	Plates, dessert, Doulton.....	Each	.72
26797	Pans, pudding, 3-quart, enamel.....	Each	.15	27297	Plates, dessert, Doulton.....	Each	.44
				27543	Plates, dessert, 8", Luria.....	Each	.11

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
27587	Plates, dessert, 7", No. 6262, Minton.....	Each	\$1.40	27953	Platters, meat, 12", Luria.....	Each	\$0.56
27631	Plates, dessert, 7", No. 7881, Booth's.....	Each	.20	27958	Platters, meat, Meakin.....	Each	.15
27658	Plates, dessert, 8", No. 6131, Booth's.....	Each	.10	27959	Platters, meat, 10", Luria.....	Each	.47
27994	Plates, dessert, 8", E-4772, Doulton.....	Each	.25	28313	Platters, meat, 10", No. 4772, Doulton.....	Each	.68
28624	Plates, dessert, 7", Minton.....	Each	1.25	28314	Platters, meat, 12", No. 4772, Doulton.....	Each	1.00
26696	Plates, dinner, white, 9", Meakin.....	Each	.04	28316	Platters, meat, 14", C-4772, Doulton.....	Each	1.40
26799	Plates, dinner, agate.....	Each	.12	28523	Platters, meat, 12", No. 3480.....	Each	.25
27193	Plates, dinner, 10", No. 8721, Minton.....	Each	1.60	28524	Platters, meat, 16", No. 3480.....	Each	.74
27212	Plates, dinner, 10", H-1935, Minton.....	Each	1.85	28536	Platters, meat, 12", No. 3140.....	Each	.23
27214	Plates, dinner, 10", A-4807, Minton.....	Each	.50	28537	Platters, meat, 16", No. 3140.....	Each	.69
27599	Plates, dinner, 9 1/2", Luria.....	Each	.20	28549	Platters, meat, 12", No. 3178.....	Each	.17
27629	Plates, dinner, 9", No. 7893, Booth's.....	Each	.26	28551	Platters, meat, 16", No. 3178.....	Each	.55
27657	Plates, dinner, No. 6131, Booth's.....	Each	.12	28589	Platters, meat, 12", G-8721, Minton.....	Each	3.35
28174	Plates, dinner, 10", Doulton.....	Each	.34	28591	Platters, meat, 10", G-8721, Minton.....	Each	2.40
28515	Plates, dinner, No. 3480.....	Each	.16	28594	Platters, meat, 10", H-1935, Minton.....	Each	2.50
28528	Plates, dinner, No. 3140.....	Each	.15	28595	Platters, meat, 12", H-1935, Minton.....	Each	3.50
28542	Plates, dinner, No. 3178.....	Each	.12	28616	Platters, meat, 10", No. 6262, Minton.....	Each	2.75
28614	Plates, dinner, 10", No. 6262, Minton.....	Each	1.95	28617	Platters, meat, 12", No. 6262, Minton.....	Each	3.85
28517	Plates, fruit, No. 3480.....	Each	.07	28627	Platters, meat, 14", No. 8721, Minton.....	Each	5.65
28531	Plates, fruit, No. 3140.....	Each	.07	26686	Pliers, side cutting, 4".....	Each	.35
28544	Plates, fruit, No. 3178.....	Each	.05	26687	Pliers, side cutting, 5".....	Each	.48
27773	Plates, Hors D'Oeuvres, No. 7881, Booth's.....	Each	.65	28338	Polish, floor, Jap-a-lac, quart.....	Tin	.43
28478	Plates, ice, decorated crystal.....	Each	1.10	28339	Polish, floor, Jap-a-lac, 1/2-pint.....	Tin	.11
27295	Plates, pie, tin.....	Each	.03	28625	Polish, floor, O' Cedar, quart.....	Tin	.81
27457	Plates, pie, enamel.....	Each	.16	28626	Polish, floor, O' Cedar, 4-oz.....	Bot.	.20
28349	Plates, pie, wooden.....	Doz.	.05	28347	Polish, floor, wax, pint.....	Tin	.38
27563	Plates, sauce, 6", G-8721, Minton.....	Each	.97	26655	Polish, furniture.....	Bot.	.11
27564	Plates, sauce, 6", A-4807, Minton.....	Each	.31	26657	Polish, knife powder.....	Can	.05
27565	Plates, sauce, 6", H-1935, Minton.....	Each	1.05	25111	Polish, metal, Sillicon Electro.....	Box	.07
27577	Plates, sauce, 6", A-300, Minton.....	Each	.34	26582	Polish, metal, Radua.....	Tin	.10
27691	Plates, sauce, 6", No. 6131, Booth's.....	Each	.08	27333	Polish, metal, Putz Pomade.....	Can	.08
27768	Plates, sauce, No. 7881, Booth's.....	Each	.14	26656	Polish, plate powder.....	Bot.	.05
28593	Plates, sauce.....	Each	.24	28405	Pots, Azalea, 6".....	Each	.05
28598	Plates, sauce, H-1935, Minton.....	Each	.95	28406	Pots, Azalea, 9".....	Each	.22
26697	Plates, soup, white, 9", Meakin.....	Each	.05	28407	Pots, Azalea, 12".....	Each	.60
27188	Plates, soup, 9 1/2", H-170, Minton.....	Each	1.70	28332	Pots, bean, 1-pint.....	Each	.12
27196	Plates, soup, 9 1/2", No. 8721, Minton.....	Each	1.55	28333	Pots, bean, 1-quart.....	Each	.16
27211	Plates, soup, 9 1/2", H-1935, Minton.....	Each	1.85	28334	Pots, bean, 2-quart.....	Each	.20
27217	Plates, soup, 9 1/2", A-4807, Minton.....	Each	.60	25465	Pots, coffee, 2-quart., enamel.....	Each	.38
27359	Plates, soup, agate.....	Each	.13	25878	Pots, coffee, 1-quart, enamel.....	Each	.31
27611	Plates, soup, 9 1/2", Luria.....	Each	.18	26812	Pots, coffee, 1 1/2-quart, enamel.....	Each	.27
27628	Plates, soup, 9 1/2", No. 7881, Booth's.....	Each	.22	26813	Pots, coffee, 1-quart, enamel.....	Each	.34
27656	Plates, soup, No. 6131, Booth's.....	Each	.14	27692	Pots, coffee, No. 6131, Booth.....	Each	.53
28514	Plates, soup, No. 3480.....	Each	.17	27769	Pots, coffee, No. 7881, Booth.....	Each	.82
28527	Plates, soup, No. 3140.....	Each	.16	28229	Pots, coffee, 1-quart, aluminum.....	Each	1.10
28541	Plates, soup, No. 3178.....	Each	.13	28364	Pots, coffee, 1-quart, aluminum.....	Each	1.15
28615	Plates, soup, 9 1/2", No. 6262, Minton.....	Each	1.95	28365	Pots, coffee, 2-quart, aluminum.....	Each	1.30
27569	Platters, chop, 14", No. 6262, Minton.....	Each	2.25	27733	Pots, flower, 4".....	Each	.06
27589	Platters, chop, 14", G-8410, Minton.....	Each	6.70	28401	Pots, flower, 5".....	Each	.03
27593	Platters, chop, 14", No. 1935, Minton.....	Each	5.85	28402	Pots, flower, 7".....	Each	.09
27685	Platters, chop, 14 1/2", No. 6131, Booth's.....	Each	.70	28403	Pots, flower, 9".....	Each	.15
27778	Platters, chop, No. 7881, Booth's.....	Each	2.20	28404	Pots, flower, 12".....	Each	.60
28464	Platters, chop, No. 4807, Minton.....	Each	1.65	28583	Pots, mustard, Booth, 6131.....	Each	.27
28622	Platters, chop, 14", G-8721.....	Each	5.85	25459	Pots, tea, 1-quart, enamel.....	Each	.32
28618	Platters, fish, 20", G-6262, Minton.....	Each	17.20	28317	Pots, tea, 1-quart, H-1935, Minton.....	Each	4.25
25126	Platters, meat, 10", white, oval.....	Each	.15	25461	Pots, tea, 1 1/2-quart, enameled.....	Each	.36
25733	Platters, meat, 6", individual.....	Each	.03	25462	Pots, tea, 2-quart, enameled.....	Each	.41
27571	Platters, meat, 14", A-4807, Minton.....	Each	2.20	27356	Pots, tea, 3-quart, enameled.....	Each	.45
27573	Platters, meat, 16", A-4807, Minton.....	Each	3.15	27769	Pots, tea, No. 7881, Booth.....	Each	.82
27583	Platters, meat, 16", A-300, Minton.....	Each	3.30	28426	Pots, tea, Y-2715, Wedgwood.....	Each	1.45
27591	Platters, meat, 14", G-8410, Minton.....	Each	5.65	28429	Pots, tea, No. 6923, Wedgwood.....	Each	1.45
27592	Platters, meat, 16", Minton.....	Each	8.50	28466	Pots, tea, No. 4807, Minton.....	Each	1.55
27612	Platters, meat, 14", Luria.....	Each	.80	28588	Pots, tea, G-8721, Minton.....	Each	3.80
27613	Platters, meat, 16", Luria.....	Each	1.20	28566	Pots, watering, 10-quart.....	Each	.52
27633	Platters, meat, 10", No. 7892, Booth's.....	Each	.49	28416	Pots, watering, 4-quart, brass spout.....	Each	2.30
27634	Platters, meat, 14", No. 7893, Booth's.....	Each	.87	27338	Pouches, tobacco, buckskin.....	Each	.54
27662	Platters, meat, 12", No. 6131, Booth's.....	Each	.56	27798	Pouches, tobacco, buckskin.....	Each	.50
27684	Platters, meat, 14", Booth's.....	Each	.72	26253	Pounders, steak.....	Each	.11
27721	Platters, meat, 14", H-1935, Minton.....	Each	5.65		Powder, plate (see Polish, metal).....		
27722	Platters, meat, 16", H-1935, Minton.....	Each	8.15	26448	Pulleys, clothes line.....	Each	.04
27723	Platters, meat, 16", G-8721, Minton.....	Each	7.25	27164	Racks, clothes.....	Each	.50
27758	Platters, meat, 10", No. 6131, Booth's.....	Each	.24	28396	Racks, towel, folding.....	Each	.70
27775	Platters, meat, 10", No. 7881, Booth's.....	Each	.55	28394	Racks, towel, bars, nickel plated.....	Each	.30
27776	Platters, meat, 14", No. 7881, Booth's.....	Each	.90	25631	Razors, safety, Gillette.....	Each	3.70
27777	Platters, meat, 16", No. 7881, Booth's.....	Each	1.45	25632	Razors, safety, ivory strop.....	Each	3.70
27938	Platters, meat, 10", A-4807, Minton.....	Each	1.10	25659	Razors, Swedish, ivory handle.....	Each	1.80
27939	Platters, meat, 12", A-4807.....	Each	1.45	27154	Razors, safety, Keen Cutter.....	Each	2.45



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
27265	Razors, Reppenhausen.....	Each	\$1.05	25641	Spoons, tea, electro plated.....	Each	\$0.17
27433	Razors, Krop.....	Each	1.05	25642	Spoons, tea, silver plated.....	Each	.13
27523	Razors, safety, Ever Ready.....	Each	.67	25643	Spoons, tea, silver plated.....	Each	.05
25697	Rollers, towel.....	Each	.05	27218	Spoons, tea, electro plated.....	Each	.12
7469	Rugs, Crex, plain, 6' x 9'.....	Each	3.00	28128	Spoons, tea, Jacobean.....	Each	.23
7471	Rugs, Crex, 8' x 10'.....	Each	4.75	28351	Spoons, wooden.....	Each	.10
28469	Rugs, Crex, red, 8' x 10'.....	Each	4.75	27956	Sprayers, insect powder.....	Each	.07
28468	Rugs, Crex, brown, 8' x 10'.....	Each	4.75	35215	Springs for single bed.....	Each	4.80
28467	Rugs, Crex, green, 8' x 10'.....	Each	4.75	35128	Springs for double bed.....	Each	1.85
7472	Rugs, Crex, 9' x 12'.....	Each	6.60	35169	Springs for double bed.....	Each	5.50
28473	Rugs, Crex, red, 9' x 12'.....	Each	6.60	35331	Springs for baby crib.....	Each	1.40
28472	Rugs, Crex, brown, 9' x 12'.....	Each	6.60	25674	Sprinklers, clothes.....	Each	.11
28471	Rugs, Crex, green, 9' x 12'.....	Each	6.60	28415	Sprinklers, plant, rubber.....	Each	.95
7466	Rugs, Crex, 27" x 54".....	Each	.66		Squeezers, lemon (see Extractors, juice).		
28437	Rugs, Crex, red, 27" x 54".....	Each	.66	25194	Stands, match box.....	Each	.55
28436	Rugs, Crex, brown, 27" x 54".....	Each	.66		Sticks, mop (see Handles).		
28435	Rugs, Crex, green, 27" x 54".....	Each	.66	28492	Stoves, fireless cookers, 3 compartments....	Each	14.55
7467	Rugs, Crex, 30" x 60".....	Each	.80	25491	Stoves, lamp, No. 1.....	Each	.55
28441	Rugs, Crex, red, 30" x 60".....	Each	.80	25489	Stoves, lamp, No. 2.....	Each	1.05
28439	Rugs, Crex, brown, 30" x 60".....	Each	.80	25488	Stoves, lamp, No. 3.....	Each	1.60
28438	Rugs, Crex, green, 30" x 60".....	Each	.80	26634	Stoves, New Perfection, 1-burner.....	Each	4.90
7468	Rugs, Crex, 36" x 72".....	Each	1.05	26635	Stoves, New Perfection, 2-burner.....	Each	6.90
7473	Rugs, Crex, 36" x 72".....	Each	1.15	26636	Stoves, New Perfection, 3-burner.....	Each	9.80
28444	Rugs, Crex, red, 36" x 72".....	Each	1.15		Stove parts:		
28443	Rugs, Crex, brown, 36" x 72".....	Each	1.15	28489	Collars for New Perfection stove.....	Each	.14
28442	Rugs, Crex, green, 36" x 72".....	Each	1.15	27811	Drums for New Perfection stove.....	Each	.75
25328	Rules, folding, 24".....	Each	.25	28491	Flame spreaders for New Perfection stove.....	Each	.20
28325	Rules, zig zag, 72".....	Each	.25	25987	Ovens for New Perfection stove, No. 2.....	Each	2.35
28411	Saucers, fiber, for flowerpots, 7".....	Each	.11	26478	Ovens for New Perfection stove, No. 1.....	Each	1.85
28412	Saucers, fiber, for flowerpots, 9".....	Each	.14	26477	Strainers, extension.....	Each	.11
28413	Saucers, fiber, for flowerpots, 12".....	Each	.30	26593	Strainers, soup, wire.....	Each	.10
	Saucepans (see Pans).			28498	Strainers, soup, aluminum.....	Each	.08
27517	Saws, carpenter's.....	Each	1.05	25296	Strainers, tea, spout, wire.....	Each	.03
27942	Saws, carpenter's.....	Each	1.05	25895	Strainers, tea, wire.....	Each	.03
27943	Saws, carpenter's.....	Each	1.00	28495	Straps, trunk, 6-foot.....	Each	.22
28337	Saws, carpenter's.....	Each	1.40	28496	Straps, trunk, 8-foot.....	Each	.24
25699	Scales, family.....	Each	1.15		Sulkies (see Carriages, baby).		
2385	Scissors, cuticle.....	Pair	.39	27416	Tacks, carpet, leather head.....	Pkg.	.07
2384	Scissors, nail.....	Pair	.50	28399	Tacks, carpet, tinned.....	Pkg.	.02
27621	Scissors, 4 1/2".....	Pair	.23	25282	Tacks, copper, 1/4".....	Pkg.	.08
27262	Scissors, 6".....	Pair	.27	28457	Tires, rubber, for baby carriages.....	Each	.17
28422	Scissors, 7".....	Pair	.44	28458	Tires, rubber, for baby carriages.....	Each	.25
27263	Scissors, 8".....	Pair	.45	28459	Tires, rubber, for baby carriages.....	Each	.26
26489	Screwdrivers, ratchet.....	Each	1.10	25286	Toothpicks.....	Box	.03
28555	Sets, laundry marking.....	Set	.21		Tool sets (see Sets).		
25221	Sets, table, 4 pieces, glass.....	Set	.51	26219	Tops for percolators.....	Each	.05
27497	Sets, tea (1 teapot, 1 sugar bowl, 1 cream jug) Doulton.....	Set	2.60	27574	Tops for salt and pepper shakers.....	Each	.02
26613	Sets, tool, with handle.....	Each	.37	28419	Traps, mouse.....	Each	.04
25789	Sets, water (1 pitcher, 6 glasses).....	Set	.68	28493	Trays, decorated crystal, 12".....	Each	8.80
25514	Shades, electric light.....	Each	.28	27422	Trays, medium, No. 3804, Doulton.....	Each	.30
25516	Shades, opal, for Juno lamp.....	Each	.25	27423	Trays, large, No. 3804, Doulton.....	Each	.36
25925	Shades, Berlin student lamp.....	Each	.19	27717	Trays, Japan, 20" x 14".....	Each	.14
26437	Shakers, salt and pepper.....	Each	.05	25532	Trays, Japan, oval, 28".....	Each	.41
27822	Sharpeners, knife.....	Each	.20	27414	Trays, oval, 14" x 11 1/2".....	Each	.08
28417	Shears, pruning.....	Pair	1.30	28418	Trowels, garden, 6".....	Each	.11
25535	Shovels, stove.....	Each	.02	9374	Trunks, 36" high.....	Each	13.50
25293	Sifters, flour.....	Each	.08	28323	Trunks, 36" high.....	Each	7.20
	Silicon (see Polish, metal).			28324	Trunks, 36" high.....	Each	6.45
25545	Skimmers, agate.....	Each	.08	28562	Trunks, 36" high.....	Each	15.90
	Spanners (see Wrenches).			28565	Trunks, 36" high.....	Each	11.30
25346	Spoons, basting, 12".....	Each	.05	8872	Trunks, 32", steamer.....	Each	5.70
28434	Spoons, basting, aluminum.....	Each	.14	9376	Trunks, 32", steamer.....	Each	13.15
25638	Spoons, coffee, silver plated.....	Each	.14	11329	Trunks, 32", steamer.....	Each	4.35
28124	Spoons, coffee, Jacobean.....	Each	.19	8873	Trunks, 36", steamer.....	Each	7.80
25644	Spoons, dessert, silver plated.....	Each	.25	9638	Trunks, 36", steamer.....	Each	7.70
25647	Spoons, dessert, electro plated.....	Each	.30	9639	Trunks, 36", steamer.....	Each	8.95
28127	Spoons, dessert, Jacobean.....	Each	.40	28563	Trunks, 36", steamer.....	Each	13.90
27174	Spoons, gravy, silver plated.....	Each	.71	28564	Trunks, 36", steamer.....	Each	10.50
25344	Spoons, mustard, wooden.....	Each	.01	28346	Tubs, foot, oval, agate.....	Each	.54
28122	Spoons, soup, Jacobean.....	Each	.47	25485	Tugs, wash, galvanized, No. 1.....	Each	.68
25645	Spoons, table, silver plated.....	Each	.28	27522	Tubs, wash, galvanized, No. 2.....	Each	.78
25646	Spoons, table, electro plated.....	Each	.40	25487	Tubs, wash, galvanized, No. 3.....	Each	.88
25649	Spoons, table, silver plated.....	Each	.10	25371	Turners, cake.....	Each	.04
27219	Spoons, table, silver plated.....	Each	.35		Wax, floor (see Polish).		
28123	Spoons, table, Jacobean.....	Each	.45	27713	Waxers, flat iron.....	Each	.04
25639	Spoons, tea, Tudor.....	Each	.14	25536	Wicks, for Rochester lamps.....	Each	.03

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
25537	Wicks for Imperial student lamps.....	Each	\$0.02	26594	Wicks for percolators.....	Each	\$0.03
25538	Wicks for Fletcher lamps.....	Each	.01	26725	Wicks for New Perfection stove.....	Each	.15
25539	Wicks for Berlin Student lamps.....	Each	.02	28356	Wire, picture, bronze, 25-yard.....	Roll	.08
25541	Wicks for Juno lamps.....	Each	.03	28354	Wrenches, bicycle.....	Each	.09
25542	Wicks for Dietz lanterns.....	Each	.03	27997	Wringers, clothes.....	Each	2.70
25544	Wicks for Radiant stoves.....	Each	.03				

## OFFICIAL CIRCULARS.

## Conditions Governing the Furnishing of Oil to Vessels at Balboa.

THE PANAMA CANAL.  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., September 17, 1915.

To all concerned.—1. No charge for wharfage will be made against vessels while obtaining oil from the oil cubs at Balboa, whether such oil is obtained from The Panama Canal or commercial companies.

2. No charge for wharfage will be made against vessels while occupying a berth alongside the steel pier (pier No. 4) for the purpose of obtaining oil, whether from The Panama Canal or commercial companies, when such vessels have been placed there for the convenience of The Panama Canal; nor will wharfage be charged for the time a vessel occupies a berth alongside the steel pier solely for the purpose of obtaining oil after having been placed there in order to load or unload cargo or passengers, or to receive other supplies from The Panama Canal or Panama Railroad Company.

CHESTER HARDING,  
Acting Governor.

## Customs Sale.

Sealed bids will be received at the office of the Division of Civil Affairs, Balboa Heights, C. Z., until noon of October 9, 1915, and then opened, for the purchase of four (4) Panama hats seized at Cristobal on August 23, 1915. These hats may be inspected on application at Room 320, Administration Building, Balboa Heights, C. Z. Bids should be marked "Bid for purchase of Panama hats," and addressed to the Chief of Division of Civil Affairs, Balboa Heights, C. Z. Purchasers will be required to pay the import duty prescribed in the customs tariff of the Republic of Panama, except that employees buying hats for their personal use may secure the release of same without payment of duty by filing application therefor on form C. E.-403. The right to reject any or all bids is reserved.

## Proposals for Furnishing Green Coffee to Commissary Branch.

Sealed proposals will be received at the office of the Depot Commissary, Cristobal, C. Z., until 4 p. m. October 11, 1915, and then opened, for furnishing the commissary branch with 45,000 pounds of green coffee. Specifications and form of proposal may be obtained upon application to the Depot Commissary, Cristobal, C. Z.

The Panama Canal reserves the right to reject any or all bids.

Bids should be marked "Proposal for furnishing green coffee, to be opened October 11, 1915," and addressed to the Depot Commissary, Cristobal, C. Z.

## Proposals for Furnishing Central American Sugar to Commissary Branch.

Sealed proposals will be received at the office of the Depot Commissary, Cristobal, C. Z., until 4 p. m. October 15, 1915, and then opened, for furnishing the commissary branch with 180,000 pounds of so-called Central American sugar.

Specifications may be obtained upon application to the Depot Commissary, Cristobal, C. Z.

The Government reserves the right to reject all bids or to accept any bid in part.

Bids should be marked "Proposals for furnishing Central American sugar, to be opened October 15, 1915," and addressed to the Depot Commissary, Cristobal, C. Z.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, October 6, 1915, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filing out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to

demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, October 8, 1915, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board.

GEORGE J. VANDERSLICE,  
Acting Recorder, Board of Local Inspectors.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., September 29, 1915.  
The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be secured upon request of the addressees:  
Bartlett, Herbert E., Co. F. Graham, Miss Edith  
Lenton, C. A. Helm, Miss Martha, care  
Boggs, W. B. Hoffstetter, Miss Celia  
Bouchard, Albert \*Kirsheimer, W. G.  
\*Bush, A. A. †A. Leman

\*Buterbaugh, F.  
Campbell, H. M.  
Casey, Matthew (Co. K, C. A. C.)  
Conner, Hugh  
\*Covey, Paul B.  
Cusker, C. C.  
Dona, Alfred  
\*Denton, Chas. W.  
\*Dunlap, J. F.  
Fox, Dr. E.  
Gavilan, Rutilio  
Gragg, Eugene  
\*Paper. †Special delivery.

## Rainfall from September 1 to 25, 1915, inclusive.

## STATIONS.

	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>		<i>Ins.</i>
Balboa.....	.69	11	3.23
Balboa Heights.....	1.22	15	3.28
Miraflores.....	1.01	15	5.05
Alto Mira.....	1.00	24	6.19
Rio Grande.....	1.25	19	8.00
<i>Central Section—</i>			
*Culebra.....	1.79	24	8.64
*Camacho.....	1.67	24	9.72
Empire.....	1.34	24	7.62
Gamboa.....	3.53	15	8.52
*Juan Mina.....	3.75	15	8.21
Alajuela.....	1.79	15	8.43
*Virgilio.....	1.43	15	8.82
*Frijoles.....	1.83	6	8.44
*Monte Lirio.....	3.95	15	12.51
<i>Atlantic Section—</i>			
Gatun.....	2.67	23	15.24
*Brazos Brook.....	2.30	23	13.71
Colon.....	2.81	19	12.83
*Bocas del Toro.....			

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values midnight to midnight.

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next five weeks are given in this table:

## SEPTEMBER.

DATE.	Time and height of high and low water.			
Wed., Sept. 29.....	1.9	14.0	1.6	13.2
	1.04	6.59	13.28	19.30
	2.8	13.2	2.5	12.3
Thurs., Sept. 30.....	1.46	7.37	14.14	20.13
	3	12.3	3.4	11.4

## OCTOBER.

DATE.	Time and height of high and low water.			
Fri., October 1.....	2.36	8.23	15.09	21.13
	1.6	11.4	13.1	10.7
Sat., October 2.....	3.34	9.28	16.14	22.31
	5.2	10.8	4.5	10.5
Sun., October 3.....	4.48	10.53	17.22	23.51
	5.5	10.9	5.4	10.9
Mon., October 4.....	5.58	12.10	18.24	24.51
	4.9	11.1	3.9	.....
Tues., October 5.....	0.51	6.55	13.09	19.15
	1.7	4.4	11.9	4.9
Wed., October 6.....	1.37	4.43	13.55	20.00
	12.8	2.7	12.9	2.0
Thurs., October 7.....	2.16	8.26	14.37	20.41
	1.9	14.1	16.0	2.4
Fri., October 8.....	2.53	9.06	15.16	21.23
	15.2	0.2	15.0	0.2
Sat., October 9.....	3.31	9.47	15.54	22.02
	14.3	1.6	16.2	2.2
Sun., October 10.....	4.08	10.28	16.33	22.44
	16.8	-1.4	16.2	-0.7
Mon., October 11.....	4.47	11.10	17.14	23.27
	3.5	12.6	16.2	-0.6
Tues., October 12.....	5.27	11.54	17.57	24.06
	16.9	-1.3	15.9	.....
Wed., October 13.....	0.12	6.12	12.40	18.44
	0.0	16.4	-0.6	15.2
Thurs., October 14.....	1.01	7.00	13.32	19.16
	0.8	15.3	0.4	14.2
Fri., October 15.....	1.56	7.56	14.30	20.39
	1.9	14.1	1.5	13.2
Sat., October 16.....	3.01	9.04	15.37	21.36
	2.9	13.0	2.4	12.5
Sun., October 17.....	4.16	10.28	16.51	23.21
	12.8	1.2	2.9	12.5
Mon., October 18.....	5.33	11.55	18.03	24.51
	3.5	12.2	2.8	.....
Tues., October 19.....	0.37	6.44	13.09	19.06
	13.9	1.9	12.2	2.4
Wed., October 20.....	1.38	7.41	14.05	20.00
	1.7	2.1	13.4	1.9
Thurs., October 21.....	2.27	8.30	14.52	20.46
	14.3	1.4	13.9	1.5
Fri., October 22.....	3.07	9.11	15.32	21.28
	14.8	0.7	14.4	1.2
Sat., October 23.....	3.44	9.51	16.09	22.07
	15.0	0.4	14.6	1.1
Sun., October 24.....	4.18	10.29	16.44	22.43
	15.0	0.3	14.5	1.3
Mon., October 25.....	4.51	11.05	17.17	23.21
	14.8	0.5	14.2	1.7
Tues., October 26.....	5.23	11.42	17.51	23.58
	14.4	0.9	13.8	2.2
Wed., October 27.....	5.57	12.20	18.27	24.31
	13.9	1.5	13.2	.....
Thurs., October 28.....	0.38	6.33	13.00	19.04
	2.9	13.2	2.2	12.5
Fri., October 29.....	1.20	7.09	13.44	19.47
	3.6	12.5	3.0	11.9
Sat., October 30.....	2.08	7.53	14.34	20.19
	4.3	11.7	3.6	11.4
Sun., October 31.....	3.05	8.49	15.32	21.43
	4.8	11.1	4.1	11.2

## NOVEMBER.

DATE.	Time and height of high and low water.			
Mon., Nov. 1.....	4.09	10.02	16.34	22.52
	4.8	10.9	4.1	11.4
Tues., Nov. 2.....	5.13	11.17	17.14	23.54
	4.4	11.1	3.8	12.1
Wed., Nov. 3.....	6.13	12.20	18.30	.....
	3.6	11.8	3.1	.....
Thurs., Nov. 4.....	0.46	7.04	13.14	19.20
	13.1	2.4	12.8	.....

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water.

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., September 26, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Sept. 20.	<i>Acajuto</i> .....	British.....	Salvador Railroad Company.....	Cristobal.....	Salina Cruz.....	General.....	671	1,219	627
Sept. 20.	<i>Maritime</i> .....	British.....	Union Steamship Co., Ltd.....	Norfolk.....	Puget Sound.....	Coal.....	7,500	6,279	4,520
Sept. 20.	<i>Saint Ursula</i> .....	British.....	British and Foreign S. S. Co.....	Newport News.....	Port Townsend.....	Ballast.....	5,608	4,165	
Sept. 21.	<i>Strathesk</i> .....	British.....	Strathesk S. S. Co., Ltd.....	Barry.....	Mejillones.....	Ballast.....		4,773	3,565
Sept. 21.	<i>Earl of Douglas</i> .....	British.....	Earl of Douglas S. S. Co., Ltd.....	Norfolk.....	Antofagasta.....	Coal.....	6,304	4,746	3,553
Sept. 22.	<i>Tewan Mori</i> .....	Japanese.....	K. Hashimoto.....	Philadelphia.....	Chempulpo.....	Petroleum.....	4,089	3,896	2,862
Sept. 22.	<i>Themis</i> .....	Norwegian.....	Wilhelmsens Dampsk. Akties.....	New York.....	Wellington.....	General.....	10,000	6,566	5,930
Sept. 23.	<i>Ranula</i> .....	British.....	Anglo-Saxon Petroleum Co.....	New Orleans.....	Moji, Japan.....	Petroleum.....	6,563	5,955	4,258
Sept. 23.	<i>Saint Leonards</i> .....	British.....	British and Foreign S. S. Co., Ltd.....	Philadelphia.....	Vladivostok.....	General.....	6,560	5,070	3,688
Sept. 23.	<i>Wellington</i> .....	British.....	Canadian Collier Company.....	Norfolk.....	Guaymas.....	Coal.....	2,013	2,043	1,330
Sept. 23.	<i>City of Colombo</i> .....	British.....	Ellerman Lines.....	New York.....	Vladivostok.....	General.....	8,712	6,711	4,971
Sept. 23.	<i>J. L. Luckenbach</i> .....	American.....	Luckenbach Line.....	New York.....	San Diego.....	General.....	3,931	5,114	3,258
Sept. 24.	<i>Ruana</i> .....	Norwegian.....	Andrew Olsen.....	Baltimore.....	Mollendo.....	Coal.....	4,603	3,169	2,304
Sept. 24.	<i>Arizona</i> .....	American.....	American-Hawaiian Line.....	New York.....	Lcs Angeles.....	General.....	10,103	8,989	6,864
Sept. 25.	<i>Tucson Prince</i> .....	British.....	Prinice Line.....	New York.....	Wellington.....	General.....	7,300	6,741	5,024
Sept. 25.	<i>Strathendrick</i> .....	British.....	Strathendrick S. S. Co., Ltd.....	Pensacola.....	Oregon.....	Ballast.....		4,642	3,392
Sept. 25.	<i>Toteau</i> .....	American.....	American-Hawaiian Line.....	New York.....	Los Angeles.....	General.....	7,109	6,819	4,606

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

No vessels were despatched from the Pacific entrance for transit through the Canal. Vessels arriving during the week, bound for the Atlantic, moored in the harbor at Balboa.

The vessels entering the Canal from the Atlantic, as shown above, lay in the anchorage basin in Gatun Lake, awaiting the opening of navigation through the Cut.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

Date	Vessel	Line	From
Sept. 21.....	<i>Nebraska</i> .....	American-Hawaiian Line.....	New York.
Sept. 25.....	<i>Clio</i> .....	Royal Dutch W. I. M. Co.....	Amsterdam.
Sept. 25.....	<i>Barrowmore</i> .....	Lochmore Steamship Co.....	Key West.
Sept. 26.....	<i>Norfolk</i> .....	Klaveness Dps. Akties.....	Norfolk.
Sept. 26.....	<i>Iroquois</i> .....	Anglo-American Oil Co.....	London.
Sept. 26.....	<i>Navaho</i> .....	Anglo-American Oil Co.....	London.
Sept. 26.....	<i>Masunda</i> .....	Glasgow United Shipping.....	New York.

\*Other than vessels which passed through the Canal.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC.

Date	Vessel	Line	From
Sept. 29.....	<i>Alaskan</i> .....	American-Hawaiian Line.....	San Francisco.
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
Sept. 22.....	<i>Corfu</i> .....	Corinthian Shipping Co.....	St. Lucia.
Sept. 25.....	<i>Coronado</i> .....	Elders & Fyffes.....	Port Limon.
Sept. 26.....	<i>Haiti</i> .....	French Line.....	St. Nazaire.

## \*DEPARTURES.

Date	Vessel	Line	To
Sept. 20.....	<i>Seythion</i> .....	Leyland Line.....	Galveston.
Sept. 22.....	<i>Tabar</i> .....	Earn Line.....	Daiquiri, Cuba.
Sept. 23.....	<i>Corfu</i> .....	Corinthian Shipping Co.....	Atlantic O. ea. i.
Sept. 23.....	<i>Coronado</i> .....	Elders & Fyffes.....	Bristol, way pts.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From
Oct. 1.....	<i>Haiti</i> .....	French Line.....	St. Nazaire.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	To
Oct. 1.....	<i>Haiti</i> .....	French Line.....	St. Nazaire.

\*Other than vessels which passed through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

Date	Vessel	Line	From
Sept. 22.....	<i>Yorktown</i> .....	U. S. Navy.....	.....
Sept. 23.....	<i>Olson &amp; Mahony</i> .....	Olson & Mahony.....	Calita Buena.

## \*DEPARTURES.

Date	Vessel	Line	To
Sept. 22.....	<i>J. A. Moffett</i> .....	Standard Oil Co.....	San Francisco
Sept. 22.....	<i>Barge No. 93</i> .....	Standard Oil Co.....	San Francisco.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From
Sept. ....	.....	.....	.....
Sept. ....	.....	.....	.....

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	To
Sept. ....	<i>Yorktown</i> .....	United States Navy.....	.....
Sept. ....	<i>Olson &amp; Mahony</i> .....	Olson & Mahony.....	.....

\*Other than vessels passing through the Canal.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Thursday to New Orleans, for all States, due at New Orleans on the following Tuesday.

Every Friday or Saturday to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week—on Friday when the vessel has not been sent through the Canal to Balboa from New York, and on Saturday if the vessel has been sent to Balboa. The day of departure from Cristobal is bulletined by the Panama Railroad Company several days in advance. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE—The sailings on Monday, October 18 and November 15, will not land mail in New York until

Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday boat to New Orleans. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Carrillo.....	U. F. C.	Sept. 22.....	Sept. 29
Colon.....	U. F. C.	Sept. 25.....	Sept. 29
Tenadores.....	U. F. C.	Sept. 25.....	Sept. 29
Santa Marta.....	U. F. C.	Sept. 29.....	Oct. 6
Advance.....	P. R. R.	Sept. 30.....	Oct. 7
Metapan.....	U. F. C.	Oct. 2.....	Oct. 11
Almirante.....	U. F. C.	Oct. 6.....	Oct. 13
Panama.....	P. R. R.	Oct. 7.....	Oct. 13

## CRISTOBAL-COLON TO NEW YORK.

Zacapa.....	U. F. C.	Sept. 30.....	Oct. 7
Allienca.....	P. R. R.	Oct. 1.....	Oct. 8
Calamarez.....	U. F. C.	Oct. 4.....	Oct. 11
Carrillo.....	U. F. C.	Oct. 7.....	Oct. 14
Colon.....	P. R. R.	Oct. 9.....	Oct. 15
Tenadores.....	U. F. C.	Oct. 11.....	Oct. 18
Santa Marta.....	U. F. C.	Oct. 14.....	Oct. 21

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba.....	U. F. C.	Sept. 22.....	Sept. 29
Heredia.....	U. F. C.	Sept. 25.....	Sept. 30
Abangarez.....	U. F. C.	Sept. 29.....	Oct. 6
Parismina.....	U. F. C.	Oct. 2.....	Oct. 7
Atenas.....	U. F. C.	Oct. 6.....	Oct. 13
Cartago.....	U. F. C.	Oct. 9.....	Oct. 14

## CRISTOBAL-COLON TO NEW ORLEANS.

Cartago.....	U. F. C.	Sept. 30.....	Oct. 5
Turrialba.....	U. F. C.	Sept. 30.....	Oct. 7
Heredia.....	U. F. C.	Oct. 7.....	Oct. 12
Abangarez.....	U. F. C.	Oct. 7.....	Oct. 14
Parismina.....	U. F. C.	Oct. 14.....	Oct. 19
Atenas.....	U. F. C.	Oct. 14.....	Oct. 21



# CANAL



# RECORD

Volume IX.

BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, OCTOBER 6, 1915.

No. 7.

## The Canal Record

Official publication of The Panama Canal.

The *Canal Record* is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis. Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The *Canal Record* at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### The Slide Situation.

On account of the continued movement of the slides at Culebra, which have blocked the channel at a point about 1,000 feet to the north of Gold Hill, it appears improbable that the Canal can be opened to navigation earlier than November 1. Word to this effect has been cabled to Washington and shipping people have been notified, directly and through statements given to the press.

The vigorous work of the men of the Dredging Division continues. In the 24 hours ending at 6 a. m., Tuesday, October 5, the 15-yard dipper dredge *Paraíso* established a new high record for a day by turning out 17,185 cubic yards. This was an average of 5,728½ cubic yards by each of the three shifts, and at the rate of 716 cubic yards an hour.

The development of high records during the period in which navigation has been suspended is an interesting example of continued work at high pressure by an organization of ambitious workers, and of the way such an organization of men, spurred by the sense of a common cause, develops greater and greater efficiency. On September 6 the *Gambua* made a run of 12,545 cubic yards, which surpassed anything done on the Isthmus before that time in hard material. Later the *Gambua* made a record of 15,145 cubic yards, while the *Paraíso* set a high mark, at 14,650. And on October 4 the *Paraíso* went as high as 17,185. The latest record is greater by 4,640 cubic yards than that of a month ago. It represents an output 37 per cent greater. The difference between the two records is equivalent to a good day's work for one of the 5-yard dipper dredges. In the month of

September the dredging fleet excavated 1,052,586 cubic yards from the Cut, setting a new high record for its work in that section. In addition, 63,066 cubic yards were re-handled. In August the excavation from the Cut amounted to 991,879 cubic yards; in July, to 692,109, of which 193,938 cubic yards were earth.

### New 15-Yard Dipper Dredge on the Way.

The new 15-yard dipper dredge *Cascadis* left Philadelphia for the Isthmus at 5 p. m. on Monday, September 27, in tow of the tug *M. E. Luckenbach*.

The *M. E. Luckenbach* is the tug which brought down the *Gambua* and the *Paraíso*, the voyages of which took 26 and 27 days, respectively. Allowing 27 days for the voyage of the *Cascadis*, she is due at Colon on October 24. Preparations are being made to put her in service as quickly as possible.

### Ships That are Waiting for Transit.

To the morning of Tuesday, October 5, there were 83 vessels tied up in the Canal, awaiting passage. Of these, 45 were on the Atlantic side, with an aggregate of approximately 167,000 tons of cargo, and 38 were on the Pacific side, with approximately 189,000 tons of cargo.

The vessels waiting on the Atlantic side are, in the order of arrival, the *Newburn*, *Strathrearn*, *Oliver J. Olson*, *Rio Pirahy*, *Tallac*, *Acajulla*, *Saint Ursula*, *Maritime*, *Earl of Douglas*, *Strathesk*, *Nebraskan*, *Tenzan Maru*, *Themis*, *Wellington*, *Saint Leonards*, *City of Colombo*, *Ranella*, *J. L. Luckenbach*, *Rauma*, *Tuscan Prince*, *Strathendrick*, *Arizonan*, *Clio*, *Iowan*, *Barrowmore*, *Iroquois*, *Navahoe*, *Masunda*, *Quilpue*, *Corfu*, *Magellan*, *Pentwyn*, *Eureka*, *Baron Cawdor*, *Rionu*, *Santa Cecilia*, *Taurus*, *Musicien*, *Harperley*, *Finland*, *Darnholme*, *Sverre*, *Strathbeg*, *Terrier*, *Polypenthus*.

The vessels waiting on the Pacific side are, in the order of their arrival, the *Newport*, *Poleric*, *Llandudno*, *Flamenco*, *Clan Alpine*, *Sullana*, *Hackensack*, *Rondo*, *Amista*, *Huallaga*, *Vinstra*, *Devian*, *Morazan*, *Tenpaisan Maru*, *Mars*, *Edith*, *Ohioan*, *Olson* and *Mahony*, *Admiral*, *Santa Catalina*, *Trader*, *Discoverer*, *Ortega*, *Iguitos*, *River Forth*, *Hammershus*, *Benedict*, *Manchester Civilian*, *Alban*, *Alaskan*, *Machaon*, *Strathairly*, *Aboukir*, *Grahamland*, *Victoria*, *Korea*, *Kentra*.

Most of the ships from the Atlantic are anchored in the anchorage basin in Gatun Lake, near the locks, and most of those from the Pacific are anchored in the outer harbor at Balboa.

### Distances by the Canal and by the Strait of Magellan.

The obstruction of the Canal and the possibility that some of the ships using it may be diverted temporarily to longer routes has focussed attention on the matter of relative distances and time required. The Official Handbook of the Canal gives, on pages 7 to

14, inclusive, a summary of distances saved and of days to be saved by vessels of nine, 10, 12, 14, and 16 knots speed, on the principal routes.

For the United States coastwise trade the Canal route is from 7,663 to 8,940 miles shorter than the route through the Strait of Magellan, depending on the ports between which the voyages are made. From New York to San Francisco is 5,262 miles by the Canal, 13,135 by Magellan.

In the South American trade, from New York to Iquique by the Canal is 4,004 miles; by Magellan, 9,143. For a vessel at Balboa to go around to Colon, following the coast of South America, would mean a voyage of 10,500 nautical miles, or to go to New York, as directly as possible, a voyage of about 11,130 miles. For a 10-knot ship this would mean about 46 days of travel, not including time for coaling. Iquique is 6,578 miles from Liverpool by way of the Canal and 9,510 miles by way of Magellan. To go from Balboa to Liverpool by way of Magellan would mean a voyage of about 11,500 miles, or 48 days at sea for a 10-knot vessel.

### Analysis of Coal Supplied to the Isthmus.

The Bureau of Mines of the United States Department of the Interior furnishes the Panama Railroad Company an analysis of a sample taken from every cargo of coal shipped to the company on the Isthmus. The coal is designated in the trade as Pocahontas standard, and the following is a sample analysis, of a recent shipment: *Coal as received*—Moisture, 1.96 per cent; British thermal units, 14,466. *Dry coal*—Volatile matter, 18.95 per cent; fixed carbon, 75.33 per cent; ash, 5.72 per cent; total, 100 per cent; British thermal units, 14,755. Percentage of lump, 30; percentage of nut and egg, 35; percentage of slack, 35.

The coal shipped to the Isthmus is all of practically the same grade. From the same cargo it is distributed for the use of locomotives, firing stationary boilers, etc., and for bunkering ships.

### Pilots Should be Advised of Ships' Peculiarities.

The attention of ships' masters is called to the importance of giving the Canal pilot complete information as to the peculiarities of the vessel in answering the helm, engine action, and so forth, if any exist, in order that the pilot may take these things into consideration in directing the maneuvering of the ship. In some parts of the Canal, notably in entering or leaving the locks, especially where relatively strong currents have been set up, very careful handling is required, and the pilot needs to know all about the peculiarities of the vessel. Accidents in the Canal have been very few, and most of those which have occurred have been due to unusual conditions.

## RECEIPTS AND EXPENSES.

## Comparison of Aggregate Expenditures and Revenues of Canal and Railroad during Fiscal Year.

By the earnings of tolls on vessels passing through the Canal during June, the excess of tolls over current expenses of operation and maintenance of the Canal for the month from June 1, 1915, to July 1, 1915, amounted to \$198,888.22.

This makes the excess of tolls earned over expenses during the entire fiscal year amount to \$276,656.38, and represents a profit of 6.7 per cent on the expenditure, for operation and maintenance alone, not counting anything for interest on the money invested or for depreciation of plant.

With respect to the other expenses involved in the operation of the Canal, exclusive of expenses for construction, which are not a regular part of the operating costs of the Canal, it may be noted that the other business operations of the concern, in addition to what has already been noted as operation and maintenance of the Canal proper, cost during the fiscal year, \$2,135,074.92; the Canal Zone government cost, \$288,887.60; the work done for the Army and Navy included in other business operations, for which reimbursement will be made, amounted to about \$548,000.

The operation of the Panama Railroad and Panama Railroad Steamship Line cost \$2,607,479.26 and \$2,142,603.68, respectively, offset by respective revenues of \$2,787,056.83 and \$2,642,457.10. Aggregate Panama Railroad profits from rail and steamship operations, were \$679,430.99. The commissary sales amounted to \$6,666,644.84, with cost of \$6,595,410.50.

The aggregate expenses and revenues may be summarized in this way:

EXPENSES.	
Operation and maintenance proper.....	\$4,066,727.31
Net cost of other business operations.....	2,469,642.42
Canal Zone Government.....	288,887.60
Operating expenses, Panama Railroad.....	2,607,479.26
Operating expenses, Panama Railroad Steamship Line.....	2,142,603.68
Cost of commissary operations.....	6,595,410.50
Cost of operating Hotel Washington.....	97,546.76
Cost of operating plantations.....	15,018.19
<b>Total expenses.....</b>	<b>\$18,283,315.72</b>
REVENUES.	
Tolls.....	4,343,383.69
Panama Canal other business operations.....	2,413,241.64
Canal Zone revenues.....	186,684.46
Operating revenues, Panama Railroad.....	2,787,056.83
Operating revenues, Panama Railroad Steamship Line.....	2,642,457.10
Receipts from commissary operations.....	6,666,644.84
Receipts from Hotel Washington.....	78,436.45
Receipts from plantations.....	6,362.83
Land rentals collected.....	112,550.23
<b>Total revenues.....</b>	<b>\$19,236,818.07</b>
Revenues in excess of expenses.....	953,502.35

From which it is seen that during the fiscal year the aggregate canal, railroad, and steamship enterprise shows an excess of revenues over expenses equivalent to 5.2 per cent of the total outlay.

In comparison with the reported earnings of the Suez Canal for the calendar year 1914, where the total receipts were 125,121,237.54 francs, and total expenses were 32,940,674.77 francs (a balance of income over expenditure amounting to 80,359,898.44 francs, or \$15,520,459.40), it is seen that the older canal is earning a handsome surplus.

The summary of the items charged to operation and maintenance, published herewith, shows that under this classification are included all the diversified expenditures which have been made for keeping the Canal open and in order, and the work of handling vessels through; and in addition are charged prorated parts of the general expenses of civil government, sanitary work, and administration. Approximately a third of the total overhead expense of the Canal at present is charged to operation and maintenance. With respect to the actual operation and maintenance, the Canal has met and exceeded expenses; but with respect to the total investment involved, and the total of current

expenditures, the receipts from tolls are not equalling expenses.

In the aggregate the combined Canal and railroad enterprise took in more in revenues than it expended, as will be seen from the tabulation given. If, however, consideration be given to the interest on the money invested, which is a regular consideration from the commercial point of view, the profit vanishes. The money invested by the United States in the enterprise is approximately \$360,000,000. The interest on this at three per cent a year (which is the rate of interest on the last bonds issued for the Canal work) amounts to \$10,800,000.

The tabulated statement of expenses charged to operation and maintenance follows:

ITEMS.	Month of June, 1915.	Month of May, 1915.	Total since June 30, 1914.
Civil Government, proportion.....	\$16,021.43	\$20,913.33	229,624.06
Health Department, proportion.....	23,725.92	24,732.91	247,352.91
Administration, proportion.....	91,669.76	76,580.76	903,428.56
Operation and maintenance:			
Admeasurement of vessels.....	744.59	770.96	9,926.54
Local inspection.....	216.80	423.87	3,926.98
Aids to navigation.....	3,749.27	4,210.39	48,059.59
Pilotage.....	5,855.98	7,757.46	61,513.50
Damages to vessels.....	217.35	175.50	755.28
Maintenance of transportation tracks.....	1,229.91	2,911.19	39,171.63
Gatun Locks:			
Superintendence.....	1,492.56	1,142.71	17,398.37
Operation.....	9,067.71	8,391.04	101,448.91
Maintenance of operating machinery and equipment.....	3,285.55	2,248.90	35,430.81
Maintenance and care of emergency dams.....	729.31	790.06	12,478.18
Maintenance of gates.....	188.63*	677.35	3,221.97
Maintenance of towing track system.....	561.50	462.45	6,672.71
Maintenance of towing locomotives, lines, and hawsers.....	1,566.12	1,924.65	14,804.94
Maintenance of lighting and telephone systems.....	312.85	43.13	2,760.35
Maintenance of power control and lighting cables.....	51.22	12.13	345.51
Maintenance of structures.....	2,220.51	2,893.49	25,772.17
Maintenance of backfill.....			6,382.96
Miscellaneous supplies and expenses.....	131.03	309.35	2,718.52
Gatun Spillway:			
Operation.....	79.90	48.00	1,128.50
Maintenance of operating machinery and equipment.....	120.14	87.05	1,237.70
Maintenance of gates and caissons.....	266.52	66.79	3,663.40
Maintenance of structures.....		747.19	6,082.60
Gatun Dam, maintenance.....	5,154.19	5,094.19	48,458.19
Pedro Miguel Lock:			
Superintendence.....	1,526.12	1,020.64	14,921.07
Operation.....	6,332.76	6,889.45	78,964.47
Maintenance of operating machinery and equipment.....	2,475.34	2,073.34	23,245.87
Maintenance and care of emergency dams.....	390.56	315.37	6,914.46
Maintenance of gates.....	112.67	451.94	1,941.63
Maintenance of valves.....			243.22
Maintenance of towing track system.....			4,448.34
Maintenance of towing locomotives, lines, and hawsers.....	916.50	1,563.69	9,808.40
Maintenance of lighting and telephone systems.....	500.52	378.14	2,489.34
Maintenance of power control and lighting cables.....	5.26		854.03
Maintenance of structures.....	1,153.66	1,351.94	9,584.93
Maintenance of backfill.....			15,800.96
Miscellaneous supplies and expenses.....	216.85	180.60	1,952.13
Pedro Miguel Dam, maintenance.....			42.00
Miraflores Lock:			
Superintendence.....	1,444.97	1,180.34	17,323.13
Operation.....	8,115.96	8,793.62	102,239.26
Maintenance of operating machinery and equipment.....	1,115.47	1,724.80	17,163.70
Maintenance and care of emergency dams.....	408.26	226.98	7,497.89
Maintenance of gates.....	116.57*	341.37	24,550.93
Maintenance of valves.....	149.53	353.60	10,616.73
Maintenance of towing track system.....			1,045.17
Maintenance of towing locomotives, lines, and hawsers.....	2,669.37	1,165.80	21,828.79
Maintenance of lighting and telephone systems.....	236.38	382.81	2,187.47
Maintenance of power control and lighting cables.....			135.43
Maintenance of structures.....	1,852.01	2,043.92	11,591.96
Maintenance of backfill.....			12,359.81
Miscellaneous supplies and expenses.....	88.73	438.34	3,324.44
Miraflores East Dam and Spillway:			
Operation.....	45.45		696.95
Maintenance of operating machinery and equipment.....	1,032.97	44.42	5,104.84
Maintenance of gates and caissons.....			3,118.43
Maintenance of structures.....	57.39	49.10	755.23
Miraflores West Dam, maintenance.....			377.17
Dredging:			
Atlantic entrance.....	1,365.20	1,104.11	125,563.30
Gaillard Cut.....	139,587.51	124,585.62	1,633,030.06
Miraflores Lake.....		2,253.44	2,253.44
Pacific entrance.....			8,628.79
Maintenance of Gatun Lake.....	1,088.50	1,130.82	14,488.51
Gatun-Mindi Levee, maintenance.....	957.16	3,317.32	26,939.54
Colon Breakwater, maintenance.....		51.91	134.54
Naes Island Breakwater, maintenance.....	1,793.58	2,236.70	4,492.21
Operation of harbor tugs.....	2,491.77		2,491.77
Shop expense, Balboa, balance.....			19,158.55
Loss on sales and services to outsiders.....			61,823.17
<b>Total, operation and maintenance.....</b>	<b>\$342,293.33</b>	<b>\$328,079.70</b>	<b>\$4,128,550.48</b>
<b>Tolls collected.....</b>	<b>\$41,181.55</b>	<b>\$47,054.60</b>	<b>4,343,383.69</b>
<b>Tolls collected in excess of expenses.....</b>	<b>\$198,888.22</b>	<b>\$218,974.90</b>	<b>\$214,833.21</b>

\*Figures in boldfaced type denote credit.

NOTE: The total of tolls earned to date does not include \$80,872.79 for tolls on United States colliers and transports, the Attorney General having ruled that no payment of tolls shall be made by other departments of the United States Government.

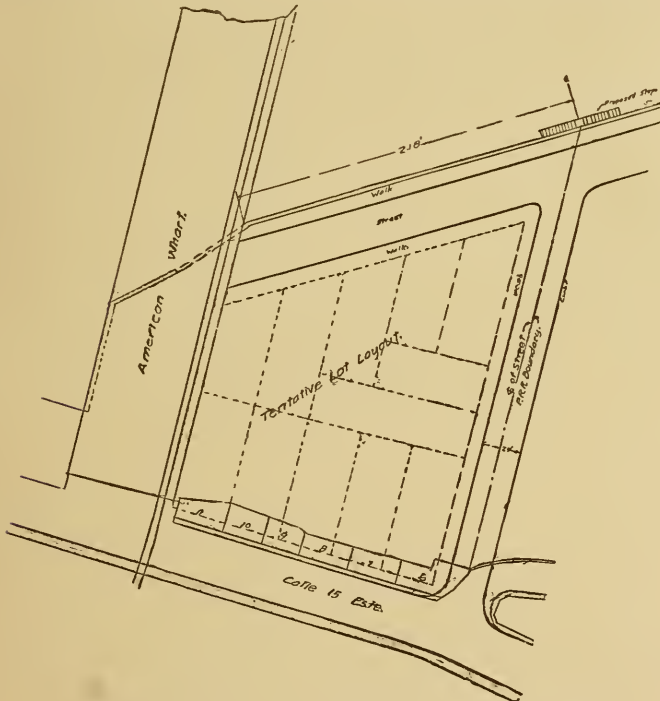


## RECLAMATION IN HARBOR.

## Additional Lots for Panama Railroad Company Adjoining the "American Wharf."

A portion of the tidal flat in the harbor of Panama City, lying between the city market and the old "American wharf," is to be reclaimed by the construction of a seawall beyond the present waterfront and filling in with spoil from a steamshovel borrow pit. The area will be available for building lots and will make an addition of several blocks.

The part of this area adjoining the south side of the American wharf and extending about 250 feet to the south of its center line will belong to the Panama Railroad. The railroad company owns the wharf and land on the present waterfront for about 230 feet to the south, known as the Montillo tract, and the part of the reclamation lying on the area subject to the riparian rights of the railroad company, based on its present waterfront holdings, will belong to the railroad. The section which will be added to the Panama Railroad holdings is shown in the accompanying chart. It covers 4,066 square meters (43,750 square feet) and will make approximately 10 new lots.



PROPOSED RECLAMATION OF PANAMA RAILROAD LAND ADJOINING AMERICAN WHARF.

The right to make the reclamation of an area on the beach extending to the northward from a point about 15 meters north of the city market was granted to several Panamanians by the National Assembly of Panama. The concessioners began the construction of their seawall from the end of an old retaining wall under the American wharf, about 200 feet from the land. When their purpose became known they were stopped by the Panama

Railroad Company, which alleged infringement on its riparian rights.

The rights of the railroad were recognized. After the recognition the concessioners agreed to fill in the area in front of the railroad company's land in consideration of the use of the railroad company's track from the American wharf to Diablo Hill, in the Canal Zone, or other hill along the line from which the concessioners may be authorized to borrow material for the fill. They are to construct a substantial seawall at their own expense to retain the fill; and the area filled in front of the railroad property shall be for the use and benefit of the railroad and the remainder of the fill shall be for the benefit of the concessioners.

The elevation of the top of the seawall is to be not less than 14 feet above mean sealevel, and the fill is to slope upwards toward the present waterfront at a grade of not less than one-half of one per cent. Work is to begin within 40 days of date of contract (September 17) and be completed within six months. The Panama Canal has agreed to rent equipment and rolling stock to the contractor who has charge of making the fill.

## Former Pacific Mail Vessels Expected to Pass through the Canal.

The steamship *Korea*, recently sold by the Pacific Mail Steamship Company to the Atlantic Transport Company, arrived at Balboa on October 3 for transit of the Canal. The ship is on the way to London, via Norfolk, and will go in service between New York and England. The agent of the Pacific Mail at Balboa states that the *Korea* and

the *Siberia*, her sister ship, are eventually to be operated in the coastwise trade in connection with the *Finland* and the *Kronland* of the Panama Pacific Line. This would enable the line to have passenger sailings from each coast at intervals of approximately 10 days. The *Korea* and the *Siberia* are nearly as large as the *Finland* and the *Kronland*, having gross tonnage of 11,284, length of 552 feet, and beam of 63 feet, compared with gross tonnage of 12,760, length of 560 feet, and beam of 60 feet. The *Finland* and the *Kronland* are the largest vessels to have passed through the Canal to date.

The steamships *Manchuria* and *Mongolia*, engaged in the former Oriental service of the Pacific Mail with the *Korea* and *Siberia*, and sold with them to the Atlantic Transport Company, are expected to clear shortly from San Francisco for New York, by way of the Canal, to enter service between New York and Europe. These ships are larger than the *Finland* and the *Kronland*. Their gross tonnage is 13,639, their length 600 feet, and their beam 65 feet. The disposition of the *China*, a smaller vessel, the last of the Pacific Mail Oriental fleet, which was also sold to the Atlantic Transport Company, has not been determined.

The coastal service of the Pacific Mail between Balboa and San Francisco, established shortly after the completion of the Panama Railroad, is to be continued for the present but the company has placed its vessels on the market. The vessels in this service are much smaller than those formerly in the Oriental service, and average about 6,000 tons gross, with length of about 300 feet. They are the *Aztec*, *City of Para*, *Newport*, *Pennsylvania*, *Peru*, *San Jose*, and *San Juan*. The agent at Balboa is attempting to dispose of the tug *Isabel* locally, failing which he expects to send her to San Francisco. The Pacific Mail has announced that it has been moved to sell its vessels and go out of business by the anticipated effects of the Act of Congress signed on March 4, 1915, entitled "An Act to promote the welfare of the American seaman in the merchant marine of the United States; to abolish arrest and imprisonment as a penalty for desertion and to secure the abrogation of treaty provisions in relation thereto; and to promote safety at sea."

## Change in Wharfage Charges.

The notice to steamship lines, published in THE CANAL RECORD of July 21, 1915, is modified by the following:

PANAMA RAILROAD COMPANY,  
BALBOA HEIGHTS, C. Z., AUGUST 27, 1915.  
Supplement No. 2 to Circular 500-A, Covering Charges for Wharfage, Cranage, Stevedoring, and Transferring Cargo, etc., Issued May 17, Effective July 18, 1915.  
Effective at once, Item No. 2, Wharfage, in the above circular, is amended as follows:—

6. When cargo is handled to or from ships in lighters, wharfage will be charged on the lighters at the docks while loading or unloading at the same rates applying to sailing vessels. A charge will also be made for the handling of lines, in accordance with Item No. 1 of the circular.

Supplement No. 3 to Circular 500-A, Covering Charges for Wharfage, Cranage, Stevedoring, and Transferring Cargo, etc., Issued May 17, Effective July 18, 1915.

The storage charge for local steamship cargo delivered in carloads at Panama, when not accepted complete within the grace period, will be charged for at the option of the Railroad either at three cents per 100 pounds per day, or \$5 per car per day.

CHESTER HARDING,  
2nd Vice-president.

S. W. HEALD,  
Acting Superintendent.



## ORNAMENTAL PLANTS.

### Ferns, Orchids, Violets, and Other Porch Box Plants for Quarters.

The greenhouse which has been established in Ancon by the Canal horticulturist, as a step in the movement to develop the plant possibilities in the Canal Zone for the beautification of quarters and villages, has on hand now a choice lot of plants suitable for porch boxes. Between 50 and 75 varieties are available for immediate delivery, and about 500 varieties are under propagation. It is desirable that advance orders be given for any of the varieties which are not kept in stock in large quantities. This will afford those desiring plants a much wider range of selection, and at the same time indicate to the horticulturist's forces what the people want, helping them the more completely to meet the demand.

Of the plants on hand for immediate delivery, there is an excellent collection of ferns, including the "asparagus" and maidenhair varieties, which are very popular on the Isthmus; roses, violets, coleus, caladiums, and many other less known varieties. Palms, hibiscus, and some new crotons are available for outdoor decoration, and experiments are under way looking to the acclimatization of phlox, pinks, geraniums, nasturtiums, basket plants, and other flowers familiar in the United States. The prices of the porch-box plants now on sale run five, 10, and 15 cents each, potted and fertilized. They are on sale from 8 to 11 a.m. and from 3 to 5 p.m. at the greenhouse, adjoining the Canal hotel at Ancon, and are purchased with commissary coupons. When more plants are available stocks will probably be placed in the various commissary stores, but at present the demand is consuming the supply and sales are made only at the greenhouse.

As a part of the general decorative scheme the horticulturist is propagating a number of the native orchids. Several varieties, including specimens of the sobralia, and the well known "Holy Ghost", are selling at prices from 50 cents to \$1 and \$1.50, according to the variety and the development of the specimen.

For the fertilization of the soil to which the plants may be transferred the Supply Department has constructed a compost pit

and its product is now available for sale at \$1 a two-mule-team wagon load, plus cost of delivery (39 cents an hour for the team), or at 50 cents a cartload. All sorts of potting soils and plant fertilizers are in stock at the greenhouse, and there is also a good stock of pots, fibre saucers, plant sprinklers, and other accessories.

The development of indoor ornamentals is a new branch of the horticulturist's work. It has been carried on primarily for the benefit of individual occupants of quarters, and a charge is made for the plants accordingly. The municipal and landscape development is another branch of the work, and for this the plants are furnished by the Canal as a part of the general work of the Government. The two, however, intermingle inevitably, both in the propagation and in effect, for the plants of the individual householder help beautify the community, while the community plants may afford pleasure to all the occupants of quarters roundabouts.

### No Free School Privileges for Alien Employees Living Outside of the Canal Zone.

On account of shortage of funds it has been decided that the children of employees not citizens of the United States and not living in the Canal Zone will not be granted free school privileges in the Canal Zone schools. This means that the children of alien employees living in Colon or Panama will not be entitled to attend the Canal Zone schools. The former Ancon colored school is to be closed, though one will be maintained at La Boca for colored children living near the southern end of the Canal. Colored schools will be operated at La Boca, Paraiso, Gatun, and Cristobal, which are now the centers of population of colored people within the Zone. There is no compulsory education law in the Canal Zone.

The former Ancon colored school, situated on the east side of the Panama Railroad on the outskirts of the city of Panama, is on territory which has become a part of the city of Panama by the latest boundary convention.

Seven colored teachers have been released by the Division of Schools by this curtailment. The shortage of funds is due to the fact that the allotment was based on an estimated organization which anticipated a reduction in the number of children attend-

ing school. During the last school year, however, the average daily attendance was generally slightly higher than during the preceding year, and as there has been no evident decrease since last year it was found necessary to cut down the number of teachers and to restrict the privilege of attendance in order to keep the expenses of the division within the allotment.

### Spanish Study in Canal Zone Schools.

The schedule for instruction in Spanish in the graded schools of the Canal Zone provides for classes twice a week at Ancon, Balboa, Pedro Miguel, Gatun, and Cristobal. The graded school classes are for all pupils in the fourth grade and above and, where practicable, third grade pupils are included with the fourth grade. Instruction in Spanish before the pupils reach the high school was begun last year, and in successive grades the pupils will have had several years' study of the language before reaching the high school, which pursues the work in advanced courses.

Spanish instruction in the high school has produced some excellent results. The most of the pupils read and write the language with facility and, which is more important, many are fluent in conversation.

Residence in the Canal Zone offers American boys an unusual opportunity not only to learn Spanish and familiarize themselves with its idioms among a population of which it is the native language, but by contact with the people of Panama to learn to know and understand the population of Latin America. Closer relations between North and South America may be expected to become a practical condition of increasing importance with the development of trade that will follow the opening of the Canal and the awakening efforts of American business to expand in this field. In such case, familiarity with Spanish and a first-hand understanding of the customs and characteristics of the Spanish-speaking people of America would in some conditions be a valuable asset to a man in business, since the basis of trade as well as of friendship is understanding.

### Dance at Taboga.

Another dance will be held at Hotel Aspinwall, Taboga, on Saturday evening, October 16, and in addition to the regular launch service extra launches will stand by, both at Balboa and Taboga, to accommodate all passengers. In spite of the heavy rain during the dance on Saturday evening, October 2, there were numbers of visitors, who enjoyed not only the dance, but fishing, swimming, and strolling about the island on the following day.

### Obituary.

Harold P. Potter, an enlisted man in the 40th Company of the Coast Artillery, stationed at Fort Grant, died at Ancon Hospital on September 20. His residence in the United States was in Binghamton, N. Y.

Mrs. C. G. Peterson, a native of the United States and wife of Mr. C. G. Peterson, who is employed in the fire department at Cristobal, died at Ancon Hospital on September 24.

### Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Baynes, Claudius, alias Boyce.	22468	St. Vincent.	Panama.	Dredging Div.	Sept. 14, 1915.
Gray, James.	47523	Montserrat.	Colon.	Car inspector.	Sept. 15, 1915.
Gibson, Charles.	42654	Barbados.	Colon.	Coaling plant.	Sept. 17, 1915.
Glasson, Henry.	87447	Gaundoupe.	Colon.	P. R. R.	Sept. 25, 1915.
Joseph, Mathew.	88606	Antigua.	Colon.	P. R. R.	Sept. 28, 1915.
Dennis, Charles A.	48614	Jamaica.	Panama.	Balboa dry dock.	Sept. 23, 1915.

### Insane Employees.

Name.	Check No.	Native of	Isthmian Residence	Employed by	Date of commitment
Gillen, James.	76200	Jamaica.	Paraiso.	Dredging Div.	Sept. 22, 1915.

The estates of the abovenamed deceased and insane employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once.

## OFFICIAL CIRCULARS.

## Releasing Cars under Load.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., October 4, 1915.

To all concerned—A number of owners and charterers of vessels now detained awaiting transit through the Canal are making arrangements for exchange of bottoms and transfer of cargo across the Isthmus by rail.

The Superintendent of the Panama Railroad advises that out of about 800 box cars and 500 flat cars now in service, not more than 75 empties, all told, are available to handle transfer cargo, the remainder being detained under load.

In order to expediently handle this heavy exchange of cargo now confronting us, by rail, it is necessary to open up a vigorous campaign on the immediate releasing of all stock, box, flat, and Lidgerwood cars under load.

I desire that the heads of all departments immediately get in touch with their subordinates and leave nothing undone to release every car possible, advising this office within 48 hours, with a copy to the Superintendent of the Panama Railroad, of the numbers and kinds of cars now under load and the number that can be immediately released.

CHESTER HARDING,  
Acting Governor.

## Additional Ratings for Silver Employees.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., September 28, 1915.

HEADS OF DEPARTMENTS AND DIVISIONS:

1. Please forward to this office not later than the morning of October 5, a list of any additional ratings for silver employees which you would recommend be included in circular No. 666-Revised.

2. State after each proposed rating whether it should be "regular" or "special." By "regular" is meant a rating suitable for general application, and by "special" a rating to apply only to special cases existing or which may possibly arise; and state the necessity for such special ratings.

3. Also submit any other suggestions you care to offer relative to the rates provided in circular No. 666-Revised.

CHESTER HARDING,  
Acting Governor.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., September 29, 1915.

CIRCULAR No. 104:

Effective October 1, 1915, Mr. H. H. Morehead is designated an accountable official of The Panama Canal, vice Mr. J. T. Smith, and as such will account for stock charged to Gatun store and nonexpendable property in use in the Gatun quartermaster's district.

H. A. A. SMITH,

Approved: Auditor, The Panama Canal.

CHESTER HARDING,  
Acting Governor.

## In Charge of Engineering Work for Building Division Designing.

THE PANAMA CANAL,  
BUILDING DIVISION,

BALBOA HEIGHTS, C. Z., September 30, 1915.

To all concerned—During the absence of Assistant Engineer T. C. Morris on leave, effective September 30, 1915, Mr. R. C. Comer will be in charge of the engineering section of the designing work of the Building Division.

GEO. M. WELLS,  
Resident Engineer.

## Acting Chief Plumbing Inspector.

THE PANAMA CANAL,  
DIVISION OF MUNICIPAL ENGINEERING,

BALBOA HEIGHTS, C. Z., September 30, 1915.

To all concerned—Effective October 1, 1915, and during the absence of Mr. J. J. Reidy on leave, Mr. Wm. Fullman is designated acting chief plumbing inspector.

W. J. SPALDING,  
Acting Municipal Engineer.

## Weighing of Cars.

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., September 29, 1915.

CIRCULAR No. 152:

To all concerned—Effective October 1, 1915, the weighing of all cars, loaded and empty, for the different departments and divisions of The Panama Canal will be handled by the Panama Railroad Company, now operating track scales at Cristobal and Balboa yards.

The Acting Governor has authorized the Panama Railroad Company to make a charge of \$1 each for the weighing of loaded cars and 50 cents each for the weighing of empty cars.

The weighmasters at Cristobal and Balboa will keep an accurate record of all cars weighed, showing on weighmaster's daily report the department or division for which cars are weighed, furnishing the Auditor of The Panama Canal with a copy of this report so that regular monthly bill can be rendered by the Auditor against the different departments or divisions of the Canal.

The salaries of weighmasters will be paid by the Panama Railroad and they will report to the terminal trainmasters at their respective stations.

S. W. HEALD,  
Acting Superintendent.

## Acting Physiologist.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,

BALBOA HEIGHTS, C. Z., September 21, 1915.

To all concerned—During the absence of Mr. Geo. C. Bunker on leave, effective September 24, 1915, the duties of the physiologist will be performed by Mr. E. J. Tucker as acting physiologist.

W. J. SPALDING,  
Acting Municipal Engineer.

Approved:

J. J. MORROW,  
Assistant to the Engineer of Maintenance.

## Change in Bus Service.

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., September 23, 1915.

CIRCULAR No. 150:

To all concerned—Effective Monday, September 27, 1915, the motor buses will discontinue running to Fort Amador along the radio road, and will only run to the end of the new road recently constructed on top of dump.

S. W. HEALD,  
Acting Superintendent.

## Train No. 4 to Stop at Cristobal Commissary.

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., September 24, 1915.

CIRCULAR No. 89:

To all concerned—Commencing October 4, 1915, and until further notice, train No. 4 will stop at the commissary crossing, Cristobal, daily except Saturdays and Sundays, to allow school children to get off.

F. S. HIRSCH,  
Chief Dispatcher.

Approved:

S. W. HEALD,  
Acting Superintendent.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., September 25, 1915.

CIRCULAR No. 105:

Effective this date Commander H. I. Cone is designated an accountable official of The Panama Canal, vice Capt. Hugh Rodman, and as such will account for all nonexpendable property in the service of the Marine Division.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:

CHESTER HARDING,  
Acting Governor.

## Sale of Band Instruments.

Sealed proposals will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 3 p. m., October 12, and then opened in public, for the purchase of any or all of a lot of band instruments, list of which follows:

Three altos; one baritone, "B" flat, No. 53, N. P.; one cornet, "B" flat; two cornets, "B" flat, No. 9, N. P.; one pair cymbals No. 3, 13"; one drum, base, No. 35, with stick and sling; one drum, snare, No. 31; one trombone, slide; two trombones, tenor valve, "B" flat; one tuba (bass horn).

These instruments may be examined and full information obtained upon application to the Storekeeper, Mount Hope. The Panama Canal reserves the right to reject any or all bids.

Proposals should be marked, "Proposal for purchase of band instruments," and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## JOINT LAND COMMISSION.

## Joint Land Commission Calendar.

The calendar heretofore set for the week ending October 9 is revoked, and the following calendar is set for the remainder of the week:

Thursday, October 7—Docket 978, Isaac Lowe; docket 982, Maria Jil Roanes; docket 984, Joseph Malabre; docket 987, José L. Arias.

Friday, October 8—Docket 1007, Alfred Darby; docket 1011, Nicholas Arrocha; docket 1015, Zachariah Bell; docket 1018, Rosa Carranza and José A. Cianca.

The following is a calendar of claims set for hearing for the week ending October 16:

Monday, October 11—Docket 854, Claris McMakin; docket 855, Antolino Garcia; docket 867, Abraham Johnson; docket 873, Joseph Osborne; docket 877, Mrs. Ann Williams; docket 879, Loice Loyed.

Tuesday, October 12—Docket 919, Narcisca Aravejo; docket 923, Charles P. Hartley; docket 928, Carlos Creyes; docket 936, Bonifacio Segura; docket 937, Avelino Rivera; docket 939, Victor Neira; docket 940, Juan Palomero; docket 941, Vicente Ruiz.

Wednesday, October 13—Docket 942, Juan Rodriguez; docket 946, José Fernandez; docket 952, Popo Paul; docket 967, Emma Muir; docket 975, Mrs. Charlotte Phillips; docket 977, Geo. Hurdle; docket 981, Peter Grant.

Thursday, October 14—Docket 986, Gabina Mora; docket 988, Dionisio Alveo; docket 989, Juan Bautista Rodriguez; docket 990, Calletano Arauz; docket 993, Encarnacion Mangina.

Friday, October 15—Docket 996, Jesus Moran; docket 997, José Altamar; docket 998, Joaquin Garcia; docket 1005, Antonio Ayvilla.

WILLIAM TAYLOR, Secretary.

## Award and Dismissal.

In the matter of the claim of Juana Miranda for property designated as Barro Colorado Arriba, award No. 94, docket No. 1662 and, A, September 10, 1915—An award is hereby made against the United States, in favor of the person hereinafter named, in the sum of \$687.50 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 10th day of October, 1915, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

Juana Miranda, docket No. 1662 and A—For all her right, title, and interest in and to the lands of Barro Colorado Arriba, such interest being the unshared part of said Barro Colorado Arriba tract lying between the Chagres River and the Frijolito River, the sum of \$687.50 United States currency.

The claim of said Juana Miranda to any other portion of Barro Colorado Arriba, or to the lands of Frijol and Palanquillo, is hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

In the matter of the claim of Arturo Muller, as attorney-in-fact for E. N. Cornell, for property designated as Juan Mina, rule of dismissal No. 197, docket No. 1044, September 29, 1915—On this 29th day of September, 1915, the day set for the hearing of this claim, evidence was presented by counsel for the United States, Hon. Frank Feuille and Walter F. Van Dame, Esq., claimant herein, E. N. Cornell, transferred his interest in the Juan Mina lands, referred to in the above-numbered claim, to Charles E. Campbell, on October 1, 1909, by instrument No. 865, executed before notary No. 1 of Panama, and that the said Charles E. Campbell, on the 10th day of June, 1913, sold all of the said interest acquired by him from the said Cornell in the said Juan Mina lands, to Richard E. Dorsey, by instrument No. 506, executed before notary No. 1 of the city of Panama, and that thereafter the said Campbell ratified said sale to the said Dorsey, before the Panamanian consul at Chicago, Illinois, by instrument No. 676 of August 5, 1914, and that subsequently the said Richard E. Dorsey conveyed all of the Juan Mina lands so acquired from the claimant, Cornell, to the United States of America, by deed executed February 10, 1915, which deed was duly recorded in the real estate records of the Canal Zone.

Substantially all these allegations were admitted by claimant's counsel, Messrs. Fabrega & Arias, in a communication addressed to this Commission on this date.

In view of such settlement and admission thereof, this claim calls for no further action by the Commission and the claim is accordingly hereby dismissed.

R. J. ALFARO, NICHOLAS CORNET, LEVI M. KAGY, R. ARIAS F., JR., Commissioners.



## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective October 7 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions which will be effective October 7, 1915.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

## FRESH BEEF.

	Price.
Beef, suet, special, per lb.	.13
Beef suet, native, per lb.	.034
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.05
Soup bone, special, per lb.	.034
Soup bone, native, per lb.	.023
Stew beef, special, per lb.	.11
Stew beef, native, per lb.	.08
Plate beef, special, per lb.	.08
Plate beef, native, per lb.	.08
Chuck roast (3 lbs. up), special, per lb.	.12
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (3 lbs. up), special, per lb.	.12
Rib roast, 2d cut (3 lbs. up), native, per lb.	.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Pot roast, native, per lb.	.20
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse roast, special, per lb.	.32
Porterhouse roast, native, per lb.	.16
Chuck steak, special, per lb.	.13
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.16
Rump steak, native, per lb.	.12
Porterhouse steak (14 lbs. up), choice, per lb.	.34
Porterhouse steak (11 lbs. up), choice, per lb.	.23
Porterhouse steak (14 lbs. up), native, per lb.	.17
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25

## FRESH MEATS.

Lamb chops, per lb.	.29
Lamb chops, shoulder, per lb.	.20
Lamb, legs, 5 to 10 lbs., per lb.	.15
Lamb, shoulder, trimmed, not less than 3 1/2 lbs. per lb.	.24
Lamb, stewing, per lb.	.12
Mutton chops, special, per lb.	.12
Mutton chops, shoulder, per lb.	.17
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.09
Pork hams, fresh (see footnote), per lb.	.23 1/2
Pork loins, chops, or roast, per lb.	.18
Pork, shoulders, fresh (see footnote), per lb.	.19 1/2
Veal cuds, per lb.	.20
Veal chops, shoulder, per lb.	.20
Veal cutlets, per lb.	.36
Veal, loin for roasting, per lb.	.30
Veal, shoulder for roasting, not under 4 lbs., per lb.	.15
Veal, stewing, per lb.	.12

## MISCELLANEOUS.

Bologna, per lb.	.11
Bluefish, per lb.	.16 1/2
Brauns, calves', per lb.	.07
Calves' heads, ea.	.78
Cadfish, dried, per lb.	.11
Haddock, smoked, per lb.	.11
Halibut, fresh, per lb.	.10
Kidneys, beef, per lb.	.10
Livers, beef, per lb.	.07
Livers, calves', per lb.	.07
Oysters, fresh, per qt.	.30

Pates de foie gras, jar.	.67
Peel citron, per lb.	.11
Peel, lemon, per lb.	.17
Peel, orange, per lb.	.15
Pigs feet, fresh, per lb.	.04
Pigs head, fresh, whole, ea.	.23
Pigs' heads, fresh, 1 head, half.	.42
Salmon, fresh, per lb.	.10
Sausage, Bologna, per lb.	.11
Sausage, frankfurter, per lb.	.08 1/2
Sausage, frankfurters, imported, tin.	.08 1/2
Sausage, liebowitz, per lb.	.09 1/2
Sausage, pork, per lb.	.17 1/2
Sausage, pork, homemade, per lb.	.23
Spare ribs, pork, per lb.	.14 1/2
Steak, hamburger, pkg.	.17
Steak, hamburger, 20-pound container, per lb.	.18
Swiss bread, beef, per lb.	.08
Tails, ox, per lb.	.18
Tongue, beef, native, whole, per lb.	.20
Whitefish, smoked, per lb.	.18 1/2
Yeast, cake.	.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.27 1/2
Bacon, breakfast, sliced, per lb.	.28 1/2
Bacon, sliced, jar.	.30
Bacon, sliced, tin.	.30
Bacon, squabs, whole square, per lb.	.19
Bacon, strips, whole strip.	.20
Beef, corned—No. 1, per lb.	.15
Beef, corned—No. 2, per lb.	.12
Ham, genuine Westland, per lb.	.50
Ham, lunch, per lb.	.40
Ham, minced, "Bologna style", per lb.	.12
Ham, real York and Cumberland, per lb.	.43
Ham, shoulders, boned, sugar cured, whole shoulder, per lb.	.14
Ham, sugar cured (whole) per lb.	.19
Ham, sugar cured (half) per lb.	.21
Ham, sugar cured, boned, per lb.	.25
Ham, sugar cured, boiled (whole) per lb.	.25
Ham, sugar cured, boiled (half).	.27
Ham, sugar cured, boiled (sliced).	.33
Pig feet, pickled, per lb.	.08 1/2
Pork, bellies, per lb.	.12
Pork, clear, per lb.	.12
Pork, standard, per lb.	.14
Tongue, beef, corned native, per lb.	.09
Tongue, ox, whole, 3 to 5 lbs., per lb.	.24
Tongue, pigs', per lb.	.22

## POULTRY AND GAME.

Broilers, coin fed, per lb.	.30 1/2
Broilers, milk fed, per lb.	.35 1/2
Capons, per lb.	.24
Chickens, fancy, corn fed, per lb.	.32 1/2
Chickens, fancy roasting, milk fed, per lb.	.32 1/2
Duckings, per lb.	.25 1/2
Ducks, mallard, 2 to 2 1/2 lbs. ea.	2.35
Eggs, light, per lb.	.22
Fowls, western, dry pickled, per lb.	.23 1/2
Geese, per lb.	.17
Grouse, ea.	1.00
Pheasants, ea.	.36
Squabs, ea.	.17
Turkeys, per lb.	.29

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	.38
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.37
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, ea.	1.1
Cheese, Edam, tin.	.26
Cheese, Gouda, per lb.	.26
Cheese, Parmesan, per lb.	.38
Cheese, Philadelphia cream, cake.	.42 1/2
Cheese, Roquefort, per lb.	.42 1/2
Cheese, snappy, cake.	.42 1/2
Cheese, Swiss, per lb.	.34
Cheese, Young America, per lb.	.30 1/2
Cream, 30 per cent, 1 pt.	.15 1/2
Cream, 30 per cent, pt.	.25 1/2
Cream, 30 per cent, qt.	.40
Eggs, fresh, per doz.	.36 1/2
Eggs, fresh, 1/2 doz. (only).	.18
Fer-mil-lac, bottle.	.25 1/2
Ice cream, (see footnote) qt.	.25 1/2
Ice cream, (see footnote) 1 gal.	.30 1/2
Milk, Sheffield farms, qt.	.15 1/2
Oleomargarine, per lb. carton.	.29

## VEGETABLES.

Beets, per lb.	.02
Cabbage, per lb.	.02
Carrots, per lb.	.02
Celery, per doz.	.13 1/2
Celery, per head.	.05 1/2
Cucumbers, per lb.	.04
Egg plant, per lb.	.03
Leituce, per lb.	.08
Onions, per lb.	.03 1/2
Parsnips, per lb.	.04
Peppers, green, per lb.	.03
Plantains, per doz.	.12
Potatoes, white, per lb.	.03
Potatoes, sweet, per lb.	.02
Squash, per lb.	.02 1/2
Tomatoes, per lb.	.01 1/2
Turnips, per lb.	.01 1/2
Yams, luca, per lb.	.03

## FRUITS.

Apples, evaporated, per lb.	.11
Apples, fresh, per lb.	.05
Artichoke, evaporated, per lb.	.11 1/2
Bananas, per bunch.	.38

Bananas, ea.	.001
Cocoanuts, ea.	.04
Citrus, cleaned, per lb.	.12
Figs, dried, 12-oz pkg.	.14
Grapes, Malaga and Tokay, per lb.	.08
Grapefruit, select, ea.	.10
Grape fruit, tropical, ea.	.03
Lemons, per doz.	.12 1/2
Limes, per 100.	.32
Oranges, select, ea.	.05
Oranges, tropical, doz.	.16
Peaches, evaporated, per lb.	.06 1/2
Peaches, fresh, per lb.	.05
Pears, alligator, ea.	.07
Pears, evaporated, doz.	.23
Pears, fresh, per lb.	.07 1/2
Plums, fresh, per lb.	.06
Prunes, stewing, per lb.	.11
Raisins, seed, pkg.	.13
Raisins, table cluster, per lb.	.18
Tangerines, ea.	.01 1/2

\* Indicates advance from preceding list.

\*\*Indicates five cents allowed for return of bot. le.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1 ham or 1/2 shoulder of fresh pork will be sold.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

The other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and other sailing days of Panama Railroad vessels.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective October 2:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Ribbon, yd.	\$6.03	\$6.02
Fruits, khaki, lining, pr.	2.35	2.15
Sugar corn, gallon tin.	.48	.58
Oil, kerosene, 5-gallon tin.	.77	.69
Ribbon, fancy, yd.	.16	.08
Ribbon, fancy, yd.	.09	.05
Ribbon, fancy, yd.	.24	.12
Ribbon, fancy, yd.	.30	.15
Ribbon, fancy, yd.	.46	.23
Ribbon, fancy, yd.	.59	.27
Ribbon, fancy, yd.	.87	.44
Ties, black, Windsor, ea.	.25	.20
Broilers, wire, ea.	.55	.39
Pans, fry, ea.	.12	.08
Tacks, carpet, pkg.	.02	.03

## Additions to Stock.

Soap, facial, Woodbury, cake.	\$0.20
Ties, silk, four-in-hand, with ring, ea.	.36
Pipes, briar, ea.	3.50
Polish, O' Cedar, quart tin.	.81
Polish, O' Cedar, 4-oz. bot.	.20
Platters, G-8721, 14", 7" Minton, ea.	5.65
Sail-lub, 24-oz. tin.	.18
Blankets, 4 x 78, 1/2 doz.	1.30
Voile, reception, yd.	.20
Ribbon, fancy, yd.	.16
Ribbon, fancy, yd.	.09
Ribbon, fancy, yd.	.24
Ribbon, fancy, yd.	.30
Ribbon, fancy, yd.	.46
Ribbon, fancy, yd.	.59
Ribbon, fancy, yd.	.81
Lace, beading, yd.	.05
Lace, beading, yd.	.08
Lace, beading, yd.	.11
Lace, beading, yd.	.13
Lace, beading, yd.	.15
Fig preserves, jar.	.12
Biscuits, chocolate, Cadbury's, 1 tin.	.43
Grape juice, Welch's, adinv't, b.	.07

## Tubago Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p. m.; Monday, Thursday, Saturday, and Sunday, at 9.40 a. m.

Leave Tubago—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier); Monday, Thursday, and Saturday at 1.30 p. m.; Sunday at 7.15 p. m. The 9.40 a. m. trips from Balboa await the arrival of Panama Railroad trains.

There will be no 5.30 p. m. trip from Balboa on Sundays and holidays, unless the number of guests desiring transportation from Tubago exceeds the number that the launch is able to take in one trip; in which case a trip will be started from the Aspinwall landing at 3 p. m., reaching Balboa in time to leave again at 5.30.



## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next five weeks are given in this table:

OCTOBER.				
DATE.	Time and height of high and low water.			
Wed., October 6.....	1:37	7:43	13:55	20:00
Thurs., October 7.....	12:8	2:7	12:9	2:0
14:0	8:26	14:37	20:41	
14:0	1:5	14:0	1:0	
Fri., October 8.....	2:53	9:06	15:16	21:23
15:2	0:2	0:0	0:2	
Sat., October 9.....	3:31	9:47	15:54	22:02
16:1	-0:8	15:8	-0:4	
Sun., October 10.....	4:08	10:28	16:33	22:44
16:8	-1:4	16:2	-0:7	
Mon., October 11.....	4:47	11:10	17:14	23:27
17:1	-1:6	16:2	-0:6	
Tues., October 12.....	5:27	11:54	17:57	.....
16:9	-1:3	15:9	.....	
Wed., October 13.....	0:12	6:12	12:40	18:44
0:0	16:3	-0:6	15:2	
Thurs., October 14.....	1:01	7:00	13:32	19:36
0:8	13:7	2:4	12:5	
Fri., October 15.....	1:56	7:56	14:30	20:39
1:9	14:1	1:5	13:0	
Sat., October 16.....	3:01	9:04	15:37	21:56
2:9	13:3	2:4	12:5	
Sun., October 17.....	4:16	10:28	16:51	23:21
3:5	12:2	2:9	12:5	
Mon., October 18.....	5:33	11:55	18:03	.....
12:2	12:2	3:8	14:2	
Tues., October 19.....	0:37	6:44	13:09	19:06
13:0	2:9	12:7	2:4	
Wed., October 20.....	1:38	7:41	14:05	20:00
13:7	13:4	1:9	12:5	
Thurs., October 21.....	2:27	8:30	14:52	20:46
14:3	1:4	13:9	1:5	
Fri., October 22.....	3:07	9:11	15:32	21:28
14:8	0:7	14:4	1:2	
Sat., October 23.....	3:44	9:51	16:09	22:07
15:0	0:4	14:6	1:2	
Sun., October 24.....	4:18	10:29	16:44	22:43
15:0	0:3	14:4	1:3	
Mon., October 25.....	4:51	11:05	17:17	23:21
14:8	0:5	14:2	1:7	
Tues., October 26.....	5:23	11:42	17:51	23:58
14:2	0:2	14:2	2:2	
Wed., October 27.....	5:57	12:20	18:27	.....
13:9	1:5	13:2	.....	
Thurs., October 28.....	0:38	6:32	13:00	19:04
13:0	1:4	13:4	1:3	
Fri., October 29.....	1:20	7:09	13:44	19:47
3:6	12:5	3:0	11:9	
Sat., October 30.....	2:08	7:53	14:34	20:39
4:3	11:7	3:6	11:4	
Sun., October 31.....	3:05	8:49	15:32	21:43
4:8	11:1	4:1	11:2	

## NOVEMBER.

DATE.	Time and height of high and low water.			
Mon., Nov. 1.....	4:09	10:02	16:34	22:52
4:8	10:9	4:1	11:4	
Tues., Nov. 2.....	5:13	11:17	17:34	23:54
4:4	11:1	3:8	12:1	
Wed., Nov. 3.....	6:10	12:20	18:30	.....
3:6	11:8	3:1	.....	
Thurs., Nov. 4.....	0:46	7:04	13:14	19:20
13:1	2:4	12:8	2:2	
Fri., Nov. 5.....	1:42	7:51	14:01	20:06
14:2	1:2	13:8	1:3	
Sat., Nov. 6.....	2:20	8:36	14:47	20:51
15:2	0:0	14:8	0:0	
Sun., Nov. 7.....	3:00	9:20	15:37	21:37
16:2	-1:0	15:7	-0:2	
Mon., Nov. 8.....	3:43	10:04	16:13	22:23
16:8	-1:6	16:2	-0:5	
Tues., Nov. 9.....	4:20	10:50	16:58	23:09
17:1	-1:8	16:3	-0:5	
Wed., Nov. 10.....	5:12	11:37	17:45	23:58
16:9	-1:5	16:0	0:0	
Thurs., Nov. 11.....	6:00	12:26	18:35	.....
16:3	-0:9	15:4	.....	

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign be before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 06 (midnight) to 24 (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., October 4, 1915.  
Following insufficiently addressed letters, originating in the United States and its possessions, have

been received at the office of the Director of Posts and may be procured upon application of the addressees:  
Atkinson, Lieutenant  
Brenneman, W. O.  
Campbell, William C.  
Chisholm, Howard  
Cov. Sergt. E. A.  
Curley, Hugh L.  
Dean, Tom  
Dean, Miss Clara Marian  
Dorman, Ed.  
Doyle, John  
Greening, P.  
Hertnett, Dan  
Lawson, Lieut. G.  
Maguire, G.  
McKie, Mrs. Florella E.  
McQuirk, Mrs. Edwin\*  
Marchant, Dr. P. C.  
Mosley, H. M.  
Murphy, Jas., Jr.\*  
Orcutt, Raymond R.  
Pratt, Jos.  
Ratcliff, John  
Salmon, Mrs. E. L.  
Souders, Mrs. Harry L.  
Staley, Robert  
Wichita Well Works  
\*Puper.

## Rainfall from September 1 to 30, 1915, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Balboa.....	.69	11	3.59
Balboa Heights.....	1.22	15	3.69
Miraflores.....	1.01	15	6.12
Pedro Miguel.....	1.00	24	6.78
Rio Grande.....	1.25	19	8.21
<b>Central Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Culebra.....	1.79	24	9.51
Camacho.....	1.67	24	10.70
Empire.....	1.34	24	8.21
Gambou.....	3.53	15	9.91
Juan Mina.....	3.75	15	9.60
Alhajuela.....	1.79	15	10.37
Vigia.....	1.43	15	9.84
Frijoles.....	1.83	6	9.84
Trinidad.....	3.20	15	11.14
Colon.....	3.95	15	14.87
<b>Atlantic Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Gatun.....	2.67	23	16.12
Brazos Brook.....	2.30	23	14.51
Monte Lirio.....	2.84	19	13.85
*Boas del Toro.....	6.16	16	2.55

\*Standard rain gauge—readings at 5 p. m. daily.

Automatic rain gauge at unstarred stations—values midnight to midnight.

## September Rainfall for Three Years.

STATIONS.	1913	1914	1915	Station Av.	Years of record	Rainy days, '15
<b>Pacific Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Balboa.....	9.01	7.72	3.59	6.79	17	17
Balboa Heights.....	11.43	9.60	6.12	7.58	19	15
Miraflores.....	8.92	6.12	9.27	8.11	23	23
Pedro Miguel.....	8.92	7.97	6.78	8.45	9	23
Rio Grande.....	8.95	8.76	8.51	10.52	11	22
<b>Central Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Culebra.....	10.55	11.12	9.21	10.69	26	22
Camacho.....	6.75	9.17	10.70	10.44	10	21
Empire.....	9.14	9.65	8.21	8.48	12	24
Gambou.....	9.45	11.50	9.91	10.48	33	23
Juan Mina.....	8.22	17.98	9.02	11.43	5	23
Alhajuela.....	8.82	16.98	9.60	11.64	17	28
Vigia.....	7.50	18.06	10.37	12.48	8	28
Frijoles.....	11.61	10.55	9.84	10.98	4	23
Trinidad.....	11.30	15.03	10.14	12.18	8	22
Colon.....	14.42	15.38	14.87	15.12	8	18
<b>Atlantic Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Gatun.....	9.95	10.95	16.12	10.43	11	26
Brazos Brook.....	11.96	13.28	14.51	12.07	10	26
Monte Lirio.....	9.90	14.80	13.85	12.55	45	20

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, October 2, 1915:

DAY AND DATE.	Vigia.	Alhajuela.	Gambou.	Gatun Lake.	Miraflores Lake.
Sun., Sept. 26.....	128.40	94.15	96.06	86.07	54.29
Mon., Sept. 27.....	127.75	94.05	95.86	85.86	54.35
Tues., Sept. 28.....	128.80	94.48	95.86	86.04	54.00
Wed., Sept. 29.....	130.85	95.20	96.02	86.06	53.63
Thurs., Sept. 30.....	131.00	96.10	96.02	86.06	53.11
Fri., Oct. 1.....	131.00	96.10	96.02	86.06	53.15
Sat., Oct. 2.....	131.00	95.82	96.06	86.10	54.35
Heights of low water to nearest foot.....	125.0	91.0			

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Thursday to New Orleans, for all States, Due at New Orleans on the following Tuesday.

Every Friday or Saturday to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week—on Friday when the vessel has been sent through the Canal to Balboa from New York, and on Saturday if the vessel has been sent to Balboa. The day of departure from Cristobal is bulletined by the Panama Railroad Company several days in advance. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE—The sailings on Monday, October 18 and November 15, will not land mail in New York until Tuesday of the following week, hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday boat to New Orleans. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the two sailings mentioned above.

## Fuel and Supplies.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 400 and 650 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies as approximately 45 shillings per ton of seven barrels.

Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

All standard lubricants, light and heavy hardware, cordage, and miscellaneous ship chandlery supplies are sold from the storehouses at Cristobal and Balboa.

Ice may be obtained in any reasonable quantity. The price is 35 cents per 100 pounds at either Cristobal or Balboa.

Repairs to vessels may be made to any extent, except turning of the largest crank shafts or longest line shafts or work requiring dry docking of large vessels.

The Government hospital service is fully equipped for the treatment of medical and surgical cases. The charge for consultation at the dispensaries is \$3; for hospital treatment for seamen in ward the charge is \$1.50 per day.

Subsistence supplies, including a large stock of fresh meats, vegetables, canned groceries, fruits, bakery products, etc., are available for quick delivery at retail prices. Prices are generally lower than the retail prices in the United States, and compare favorably with prices in any part of the world.

Laundry is handled quickly, and no advance notice is required. The following are representative charges for ship's laundry: Trousers—dressed in jackets—five cents each; aprons, caps, sheets, tablecloths, napkins, towels, one cent each.

Application for supplies, or for services, should be made to the Captain of the Port, Cristobal or Balboa.

Mail, other than registered, and cablegrams for men on ships which will call at the terminal ports, or pass through the Canal, may be addressed in the care of the captains of the ports, if desired; or may be addressed to Cristobal or Balboa, general delivery, with the name of the vessel written plainly; or, in case the vessel has a known representative on the Isthmus, in care of such representative.

Firms sending their vessels to the Canal do not need to employ agents on the Isthmus to take care of their interests in regard to the payment of tolls and minor charges.

Delays and expense may be avoided by doing business direct with The Panama Canal. The Canal organiza-

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., October 3, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Sept. 27.....	<i>Iroquois</i> .....	British	Anglo-American Oil Co., Ltd.	London	San Francisco	Ballast	.....	9,374	6,363
Sept. 27.....	<i>Sommersd.</i> .....	Norwegian	Klavness Dmpsk. Akties.	Norfolk	Vladivostok	Railway material	8,696	4,268	3,177
Sept. 27.....	<i>Narvohoe</i> .....	British	Anglo-American Oil Co., Ltd.	London	San Francisco	Ballast	.....	7,882	6,862
Sept. 27.....	<i>Outback</i> .....	British	Pacific Steam Navigation Co.	Cristobal	Guayaquil	General	2,046	3,922	2,231
Sept. 28.....	<i>Corfu</i> .....	British	Corinthian Shipping Co., Ltd.	Sea	Humboldt Bay	Ballast	.....	4,022	3,050
Sept. 28.....	<i>Clio</i> .....	Dutch	Royal Dutch West India Mail Co	Amsterdam	Valparaiso	General	112	3,005	2,110
Sept. 28.....	<i>Masanda</i> .....	British	Glasgow United Shipping Co.	New York	Honolulu	Cass oil	7,500	5,517	4,200
Sept. 28.....	<i>Magellan</i> .....	French	Anto. Dom. Bordes & Fils	La Pallice	Iquique	Ballast	.....	6,421	4,343
Sept. 28.....	<i>Burroughmore</i> .....	British	Lochnore S. S. Co., Ltd.	Key West	Faite, Peru	Ballast	.....	4,327	3,097
Sept. 28.....	<i>Cyrus W. Field</i> .....	American	U. S. mine planter	Cristobal	Gatun Lake	Ballast	.....	376	204
Sept. 28.....	<i>Pentwyn</i> .....	British	Pentwyn S. S. Co., Ltd.	Newport News	Vancouver, B. C.	Ballast	.....	4,264	3,181
Sept. 29.....	<i>Eurola</i> .....	American	Pacific Coast Company	New York	Portland	General	2,864	2,421	1,726
Sept. 30.....	<i>Santa Cecilia</i> .....	American	W. R. Grace & Co.	New York	Los Angeles	General	3,600	6,747	4,476
Oct. 1.....	<i>Taurus</i> .....	Norwegian	Wilhelmssens Dmpsk. Akties.	Philadelphia	Vladivostok	General	6,500	4,697	3,516

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

No vessels were despatched from the Pacific entrance for transit through the Canal. Vessels arriving during the week, bound for the Atlantic, moored in the harbor at Balboa.

The vessels entering the Canal from the Atlantic, as shown above, lay in the anchorage basin in Gatun Lake, awaiting the opening of navigation through the Cut.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

Date	Vessel	Line	From	Date	Vessel	Line	From
Sept. 29.....	<i>Baron Casador</i> .....	Hogarth Shipping Co., Ltd.	New York	Oct. 5.....	<i>Lady Carrington</i> .....	Carrington S. S. Co.	Portland
Sept. 29.....	<i>Rionda</i> .....	Nedamv. Maats. New York	London	Oct. 5.....	<i>Netherthorn S. S. Co.</i>		
Oct. 1.....	<i>Musican</i> .....	Harrison Line	Liverpool	Oct. 5.....	<i>Victoria</i> .....	Pacific Steam Nav. Co.	Valparaiso
Oct. 1.....	<i>Harperley</i> .....	J. & C. Harrison, Ltd.	Port Hunter	Oct. 8.....	<i>Corongo</i> .....		Australia
Oct. 1.....	<i>Finland</i> .....	Panama Pacific Line	New York				
Oct. 3.....	<i>Durnholme</i> .....	T. Smiles & Sons S. S. Co.	Kingston, Ja.				
Oct. 3.....	<i>Serre</i> .....	Akties Dmpsk. Sverre	New York				

\*Other than vessels which passed through the Canal.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	To
Sept. 26.....	<i>Haiti</i> .....	French Line	St. Nazaire	Oct. 1.....	<i>Haiti</i> .....	French Line	St. Nazaire
Oct. 1.....	<i>Wegadesk</i> .....	Earn Line	Norfolk				
Oct. 1.....	<i>Tres Amigos</i> (sch.)	Robert Wilcox	Kingston, Ja.				

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	To
Oct. 7.....	<i>Savioia</i> .....	Italian Line	Genoa	Oct. 5.....	<i>Wegadesk</i> .....	Earn Line	Felton, Cuba.
				Oct. 10.....	<i>Savioia</i> .....	Italian Line	Genoa and way pts.
					<i>Tres Amigos</i>	Robert Wilcox	Coast ports.

\*Other than vessels which passed through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	To
Sept. 27.....	<i>Santa Cotelina</i> .....	Atlantic and Pacific S. S. Co	Tacopilla	Sept. 30.....	<i>Alaskan</i> .....	American-Hawaiian Line	Taboga
Sept. 29.....	<i>Jamaica</i> .....	Pacific Steam Nav. Co.	Taboga	Sept. 30.....	<i>Santa Catalina</i> .....	Atlantic and Pacific S. S. Co	Taboga
Sept. 23.....	<i>Peru</i> .....	Pacific Steam Nav. Co.	Guayaquil	Sept. 30.....	<i>Peru</i> .....	Pacific Steam Nav. Co.	Valparaiso
Sept. 30.....	<i>Alaskan</i> .....	American-Hawaiian Line	San Francisco				
Oct. 3.....	<i>Columbia</i> .....	Wilson Bros. & Co.	Tacoma				

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	To
					<i>Columbia</i> .....	Wilson Bros. & Co.	

\*Other than vessels passing through the Canal.

tion has been developed to handle vessels with all possible despatch, and to attend to their wants fully in the matter of supplies, fuel, water, repairs, etc., to the extent of the available facilities.

Deposits to cover tolls or the purchase of supplies may be made with any of the Assistant Treasurers of the United States, who are to be found at the larger seaports, or with the Assistant Auditor of The Panama Canal at Washington, D. C. As soon as these deposits are made, cable information is sent to The Panama Canal.

It is advisable that deposits be made somewhat in excess of the anticipated charges, to cover minor charges which may not have been anticipated, such as pilotage and towage. Pilotage is at the rate of \$1 per foot of maximum draft, but is not charged on a vessel which makes the transit of the Canal without taking on or discharging freight or passengers in a terminal port. Tug service, which is at the rate of \$15 per hour, will not be charged on steam vessels of less than 15,000 gross tonnage.

The cable address of The Panama Canal, on the Isthmus, is "Panacanal, Panama;" in the United States, "Panacanal, Washington."

Shipping people addressing The Panama Canal by mail, should address "The Panama Canal, Balboa Heights, Canal Zone," for delivery on the Isthmus, and "The Panama Canal, Washington, D. C." for delivery in the United States.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.			
Vessel.	Line.	Sails.	Arrives.
Santa Marta.....	U. F. C.	Sept. 29.....	Oct. 6
Advance.....	P. R. R.	Sept. 30.....	Oct. 7
Metapan.....	U. F. C.	Oct. 2.....	Oct. 11
Almirante.....	U. F. C.	Oct. 6.....	Oct. 13
Panama.....	P. R. R.	Oct. 6.....	Oct. 13
Pastores.....	U. F. C.	Oct. 9.....	Oct. 17
Zacapa.....	U. F. C.	Oct. 13.....	Oct. 20
Allianca.....	P. R. R.	Oct. 14.....	Oct. 20
Calamares.....	U. F. C.	Oct. 16.....	Oct. 24
Carrillo.....	U. F. C.	Oct. 20.....	Oct. 27

## CRISTOBAL-COLON TO NEW YORK.

Vessel.	Line.	Sails.	Arrives.
Colon.....	P. R. R.	Oct. 6.....	Oct. 12
Carrillo.....	U. F. C.	Oct. 7.....	Oct. 14

Tenadores.....	U. F. C.	Oct. 11.....	Oct. 18
Santa Marta.....	U. F. C.	Oct. 14.....	Oct. 21
Advance.....	P. R. R.	Oct. 15.....	Oct. 22
Metapan.....	U. F. C.	Oct. 18.....	Oct. 26
Almirante.....	U. F. C.	Oct. 21.....	Oct. 28
Panama.....	P. R. R.	Oct. 22.....	Oct. 28

## NEW ORLEANS TO CRISTOBAL-COLON.

Abangarez.....	U. F. C.	Sept. 29.....	Oct. 6
Parismia.....	U. F. C.	Oct. 2.....	Oct. 7
Advance.....	U. F. C.	Oct. 6.....	Oct. 13
Cartago.....	U. F. C.	Oct. 9.....	Oct. 14
Turrialba.....	U. F. C.	Oct. 13.....	Oct. 20
Heredia.....	U. F. C.	Oct. 16.....	Oct. 21
Abangarez.....	U. F. C.	Oct. 20.....	Oct. 27
Parismia.....	U. F. C.	Oct. 23.....	Oct. 28

## CRISTOBAL-COLON TO NEW ORLEANS.

Heredia.....	U. F. C.	Oct. 7.....	Oct. 12
Abangarez.....	U. F. C.	Oct. 7.....	Oct. 14
Parismia.....	U. F. C.	Oct. 14.....	Oct. 19
Atenas.....	U. F. C.	Oct. 14.....	Oct. 21
Cartago.....	U. F. C.	Oct. 21.....	Oct. 26
Turrialba.....	U. F. C.	Oct. 21.....	Oct. 28
Heredia.....	U. F. C.	Oct. 28.....	Nov. 2
Abangarez.....	U. F. C.	Oct. 28.....	Nov. 4



# CANAL



# RECORD

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No. 8.

## The Canal Record

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All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### The Slide Situation.

Due to continued earth movements, the condition of the channel at the bases of the east and west Culebra slides is essentially the same as it was a week ago, the material removed during that period being about equal to the slide movement into the prism. It is deemed inadvisable, therefore, at this time to predict any approximate date of reopening the Canal, and shipping interests are being advised to use some other route until further notice, which will be given as soon as material is removed sufficiently to insure more stable conditions.

The dredging organization has continued its work at high pressure and removed a total of 208,731 cubic yards of spoil from the prism in the seven days ending at 6 a. m., Tuesday, October 12.

### Papers for Transhipping Some of the Cargo.

With a view of doing all that is possible to lessen the hardships resulting from the temporary cessation of traffic through the Canal, preparations have been made, where the lines interested can effect an exchange of bottoms, to tranship rush and perishable cargo across the Isthmus by rail.

To meet the exceptional conditions at this time, a flat rate of \$3 per ton has been made by the Panama Railroad Company, which is to include all wharfage, craning, stevedoring, and transfer charges on the dock as well as the rail haul. This charge is approximately the cost of such service and is not intended as a precedent for the services of the railroad on future movements of this kind.

In former times, prior to the opening of the Canal and when the Panama Railroad participated as a cocarrier between the regularly

established lines on the Pacific and Atlantic Oceans, the railroad received, in addition to the regular wharfage, craning, stevedoring, and transfer charges, a proportion of the through rates, arrived at on a percentage basis from various points to various points. The special arrangement of the \$3 flat rate at this time is adopted only as an emergency measure to relieve vessels now being detained.

There were about 375,000 tons of cargo in the vessels awaiting transit through the Canal, before any of them left to go by longer routes. At the height of its activity, the Panama Railroad hauled a total of 643,178 tons of through freight between the seaboard in 12 months. The railroad has neither the rolling stock nor the terminal facilities adequate to this unusual situation, but that it can not handle all the cargo does not imply it can not render valuable help in transshipping parts of it, especially for those lines having vessels at each end.

The following vessels are discharging cargo at Balboa for shipment over the Isthmus by rail: the *Hattie Luckenbach*, *Santa Catalina*, *Harry Luckenbach*, *Columbia*, *Edith*, *Pachitea*, *Aysen*, *Cauca*, and *Clan Alpine*. The following are discharging at Cristobal: the *J. L. Luckenbach*, *Florence Luckenbach*, *Pacific*, and *Santa Clara*.

### Ships That are Waiting for Transit.

In the morning of Tuesday, October 12, the vessels waiting on the Atlantic side were, in the order of arrival, the *Newburn*, *Oliver J. Olson*, *Tallac*, *Acajulla*, *Maritime*, *Wellington*, *City of Colombo*, *J. L. Luckenbach*, *Arizonan*, *Clio*, *Iowan*, *Quilpue*, *Corfu*, *Pentwyn*, *Eureka*, *Baron Cawdor*, *Rionua*, *Santa Cecilia*, *Musician*, *Darnholme*, *Strathbeg*, *Florence Luckenbach*, *Greystoke Castle*, *Bellgrano*, *Prophet*, *Buford*, *City of Birmingham*, *Santa Clara*, *Gambia River*, *Nevadan*, *Carmino*, *Pacific*, and *Panama Transport*.

Vessels which have left, to go by longer routes are the *Kim*, *Strathearn*, *Rio Pirahy*, *Saint Ursula*, *Earl of Douglas*, *Strathesk*, *Nebraska*, *Tenzan Maru*, *Themis*, *Saint Leonards*, *Ranella*, *Raxma*, *Tuscan Prince*, *Strathendrick*, *Barrowmore*, *Iroquois*, *Navahoe*, *Masunda*, *Magellan*, *Taurus*, *Harperley*, *Finland*, *Terrier*, *Sierre*, *Polyphemus*.

The vessels waiting on the Pacific side are, in the order of their arrival, the *Newport*, *Llandudno*, *Flamenco*, *Clan Alpine*, *Sultana*, *Hachensack*, *Rondo*, *Amista*, *Vinstra*, *Devian*, *Morazan*, *Tenpaisan Maru*, *American*, *Edith*, *Olson* and *Mahony*, *Admiralen*, *Santa Catalina*, *Trader*, *Ortega*, *Iquitos*, *River Forth*, *Hammershus*, *Benedict*, *Manchester Civilian*, *Alban*, *Mochaon*, *Strathairly*, *Aboukir*, *Grahamland*, *Columbia*, *Victoria*, *Korea*, *Kentra*, *Derwent River*, *Strathfilan*, *Lena*, *Strinda*, *Caldergrove*, *Netherpark*, *Polymnia*, *Orange River*, *Vellore*, *Corango*, *Saint Louis*, *Giisella*, *Navajo*, *Siberia*, *Chimu*, *Toromeo*.

Those which have left during the past

week are the *Poleric*, *Huallaga*, *Mars*, *Ohioan*, *Discoverer*, *Alaskan*.

### Trestle for East Breakwater Completed.

The trestle for the East Breakwater in Limon Bay was completed in the afternoon of Thursday, October 7.

All but the inner 1,280 feet of the 5,693 feet of trestle leading from the shore to the site of the breakwater proper, and all but 136 feet of the 3,805 feet of trestle driven for the breakwater proper, were swept away by the northers of February 8-10 and April 3-5, 1915. The reconstruction of trestle since the last norther, in a period of five and five-sixths months, has involved the building of 5,937 feet of single-track trestle and 3,767 feet of double-track trestle. For a period of two months the trestle was being constructed at two points. At the outer end of the breakwater, the depth of good bottom has required piling at least 115 feet long, and scarcity of piles has sometimes delayed the work.

In September a new record for trestle construction was established. One thousand six hundred and fourteen linear feet of double-track trestle were built, at the rate of 64 feet per working day. The previous record was made in August, 1914, when 1,591 linear feet of double-track trestle were built. It is believed that this is the record for trestle construction under conditions such as are met at the East Breakwater.

The dumping of core rock for the fill for the breakwater has followed closely behind the pilerdriver, and the dumping of the large armor rock has followed the building up of the core. The use of rock for the fill, which was suspended by the destruction of the trestles, was resumed on July 29. Dredged material was dumped ahead of the advancing trestle, and coral fill is now being supplied by a pipeline suction dredge and delivered along the trestle through relay stations for dumping with the rock to form the core. The core for the breakwater fill is 60 per cent completed. For a distance of 3,100 feet, the core fill has been brought to elevation -12, and is ready for the armor rock to be placed. It is hoped to have the fill well armored before the coming of the next norther.

Four trains of 28 Lidgerwood cars of rock from the Sosa Hill quarry are dumped daily. At 19 cubic yards to the car this is approximately 2,128 cubic yards a day. The rock supplied to the breakwater averaged about 82 per cent core and 18 per cent large armor rock in September. The minimum size of the rock acceptable for armoring is 54 cubic feet per piece, which means a weight of over four tons. Some of the pieces weigh as high as 24 tons.

### Signal Mast at Gatun.

A signal mast has been erected alongside the lighthouse section headquarters at Gatun at the south end of the concrete wharf near the railroad station, for communicating with the vessels anchored in Gatun Lake.



## CANAL TRAFFIC IN AUGUST.

## Commodities Shipped through the Panama Canal in August, 1915.

Less Than in July, but Exceeding Other Months in Number of Vessels.

The number of oceangoing vessels passing through the Canal during the month of August was 161. Of these, 89 moved from the Atlantic to the Pacific, or westbound, and 72 from the Pacific to the Atlantic, or eastbound. The aggregate number exceeded the numbers in the preceding months except July, when a total of 170 vessels made the transit of the Canal.

The cargo carried through the Canal during August amounted to 575,337 tons. This was less than the quantities in March, May, June, and July, but exceeded the quantity during any other month since the opening of the Canal, on August 15, 1914. The August movement brings the grand total of cargo to 6,250,598 tons.

Cargo moving from the Atlantic to the Pacific amounted to 249,119 tons. That moving from the Pacific to the Atlantic amounted to 326,218 tons.

A comparison of the traffic during August with that in the preceding months is afforded by this tabulation of the movements by months from Atlantic to Pacific, or westbound, and from Pacific to Atlantic, or eastbound, since the opening of the Canal to commercial traffic:

Month	Atlantic-Pacific		Pacific-Atlantic		Total.	
	Ves-	Cargo	Ves-	Cargo	Ves-	Cargo
	sels	tons	sels	tons	sels	tons
August.....	13	49,106	11	62,178	24	111,284
Sept.....	27	141,762	30	180,276	57	322,038
Oct.....	44	168,069	40	253,288	84	421,357
Nov.....	54	206,510	38	242,291	92	448,801
Dec.....	43	179,235	57	271,219	100	450,454
Jan, 1915	44	208,082	54	240,925	98	449,007
Feb.....	39	150,987	53	276,078	92	427,065
March.....	57	217,447	80	417,610	137	635,057
April.....	59	237,384	60	285,457	119	522,841
May.....	67	246,534	75	332,174	142	578,708
June.....	83	320,619	60	282,561	143	603,180
July.....	93	316,773	77	388,696	170	705,469
August.....	89	249,119	72	326,218	161	575,337
Total.....	712	2,691,627	707	3,558,971	1,419	6,250,598

The aggregate movement of 6,250,598 tons in the period of 12½ months is at the rate of 500,047.8 tons per month. This is equivalent to 6,000,574 tons per year, or 16,440 tons per day.

The greater part of the traffic was moving over the five great routes which have been used by the great majority of the vessels passing through the Canal. The distribution during August was as follows:

ATLANTIC TO PACIFIC.			
	Ves-	Net	Tons of
	sels	tonnage	cargo.
United States coastwise.....	13	51,876	67,102
Europe to west coast of North America.....	5	20,362	8,853
Europe to South and Central America.....	2	9,097	4,728
United States to South and Central America.....	9	28,740	36,431
United States to Australia and Far East.....	16	67,286	103,745
Atlantic terminus to South and Central America.....	13	24,737	14,319
Miscellaneous.....	2	7,255	13,590
Vessels in ballast.....	29	78,841	
Total.....	89	288,194	249,119
PACIFIC TO ATLANTIC.			
United States coastwise.....	15	61,858	83,643
West coast of North America to Europe.....	3	9,866	14,460
South and Central America to Europe.....	7	24,341	40,121
South and Central America to United States.....	23	77,673	139,738
Australia and Far East to United States.....	5	20,496	32,798
South and Central America to Atlantic terminus.....	13	21,507	14,458
Miscellaneous.....	1	441	1,000
Vessels in ballast.....	8	20,675	
Total.....	72	236,857	326,218

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Agricultural implements.....	398		398	New York to San Francisco, San Diego, Sydney.
Alcohol.....	3		3	New York to San Francisco.
Alfalfa meal.....		70	70	San Francisco to New York.
Antimony ore.....		1,254	1,254	Chile and San Francisco to New York and England.
Asphalt.....	100	403	503	San Francisco to New York; New York to Maji.
Automobiles.....	300		300	New York to Kobe, Sydney, and Vladivostok.
Bark.....		343	343	Valparaiso, San Francisco to England.
Barley.....		8,494	8,494	See comment.
Beans.....	50	124	174	San Francisco to New York; Cristobal to Valparaiso.
Beans, vanilla.....		1	1	New York to London.
Benzine.....	2		2	San Francisco to Chile.
Borax.....		1,522	1,522	Antofagasta to London and Liverpool.
Brass.....	19	50	69	New York to San Francisco; San Francisco to New York.
Cacao.....	17	2,466	2,483	New York to San Francisco; South Pacific ports to Colon.
Canned goods—				
Fish.....	239	5,277	5,516	See comment.
Fruit.....	85	6,042	6,127	See comment.
Meat.....	23	82	105	Liverpool and New York to Valparaiso and Sydney; San Francisco to New York and London.
Vegetables.....	21	111	132	New York, San Francisco, Los Angeles.
Miscellaneous.....		550	550	Astoria to New York.
Canvas.....		1,000	1,000	New York to Antofagasta.
Cement.....		4,430	4,430	New York and Cristobal to Chile and Peru.
Cereals.....	150	45	195	Cristobal to Valparaiso; Callao and Valparaiso to Cristobal and Liverpool.
Chemicals.....	2,081	388	2,469	Liverpool, New York, West coast, Orient.
Chrome.....		6,645	6,645	New Calidonia to Baltimore.
Coal.....	45,513		45,513	See comment.
Coca leaves.....	50	10	60	Barry to Pacific Ocean; Chile and Peru to Cristobal.
Coffee.....	55	556	611	New York to North Pacific ports; west coast to Colon and London.
Copper.....	76	12,798	12,874	See comment.
Copper ore.....		7,972	7,972	See comment.
Cotton.....	1,766	2,173	3,939	See comment.
Earthenware.....		56	56	Liverpool and New York to San Francisco and south Pacific ports.
Electrical supplies.....	32		32	New York to San Francisco.
Enamelware.....	67		67	New York to San Francisco and San Diego.
Explosives.....	184		184	New York to California and Australia.
Fertilizer.....		149	149	San Francisco to New York.
Flour.....		312	312	New York and Cristobal to west coast; Portland, Oreg., to New York.
Fruit, dried.....		3,061	3,061	San Francisco to New York and London.
Fruit, fresh.....		950	950	San Francisco and Hilo to New York and Philadelphia.
Furniture.....	57		57	New York to San Francisco.
Galvanized sheets.....	167		167	New York to San Francisco and Los Angeles.
Gasoline.....	100		100	New York to San Diego.
General cargo.....	105,413	19,401	124,814	See comment.
Glassware.....	107		107	New York to San Francisco and San Diego.
Gold.....		2	2	Chile to Cristobal.
Goose feathers.....		35	35	San Francisco to New York.
Guano.....	250	44	294	New York to Melbourne; San Francisco to New York.
Hair, cattle.....		48	48	Chile and San Francisco to Liverpool and New York.
Hay.....		1	1	San Francisco to London.
Hemp.....		4,18	4,180	Manila, Hilo, and Vancouver to New York and London.
Honey.....		40	40	San Francisco to London.
Hops.....		14	14	San Francisco to New York.
Indigo.....		5	5	Ecuador to Cristobal.
Iodine.....		41	41	Chile to Cristobal and Liverpool.
Iron.....		2,963	2,963	Europe, New York, and Philadelphia to west coast.
Iron ore.....		20,400	20,400	Cruz Grande to Philadelphia.
Ivory nails.....		1,160	1,160	Liverpool and New York to Colon.
Jute.....		25	25	Cristobal to Valparaiso.
Lard.....		663	663	Liverpool, New York, and Cristobal to west coast.
Lead.....		1,710	1,711	West coast, New York and Cristobal.
Leather.....		20	28	New York to Melbourne; Guayaquil to Colon.
Linoleum.....		22	22	New York to San Francisco.
Liquors.....		270	270	Liverpool and New York and Cristobal to west coast and Kobe.
Lumber.....		825	21,479	See comment.
Macaroni.....		17	17	New York to Los Angeles.
Manganese.....		58	58	San Francisco and Chile to New York and Cristobal.
Manufactured goods—				
Iron and steel.....	14,912		14,912	See comment.
Machinery.....	8,452		8,452	See comment.
Railroad material.....	6,231		6,231	See comment.
Textiles.....	566		566	Liverpool and New York to west coast and New Zealand.
Miscellaneous.....	1,426	10	1,436	San Francisco to New York.
Marble.....	52		52	New York to San Diego.
Milk, evaporated.....	6	12	18	Liverpool to south Pacific ports; San Francisco to London.
Mineral waters.....	4		4	Liverpool to south Pacific ports.
Nails, wire.....	631		631	New York to San Francisco and Yokohama.
Nitrates.....		134,793	134,793	See comment.

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Nuts.....		42	42	San Francisco to New York.
Oil, crude.....	14,225	23	14,225	See comment.
Oil, lubricating.....	1,858	1,881	3,739	New York to west coast and Orient.
Oil, vegetable.....	408	400	808	New York and Cristobal to west coast and New Zealand; China to New York.
Oyster shells.....	100		100	Baltimore to Los Angeles.
Paint.....	240		240	Liverpool and New York to west coast.
Panama hats.....		21	21	Ecuador and Chile to Cristobal.
Paper.....	3,814		3,814	Europe and New York to west coast and Orient.
Paper ware.....	101		101	New York and San Francisco.
Pearl shells.....		8	8	San Francisco to New York.
Pencil wood.....		115	115	San Francisco to New York.
Petroleum, refined.....	17,447	345	17,792	See comment.
Phosphates.....	250		250	New York to Talcahuano.
Pipes, iron.....	657		657	New York to California and Yokohama.
Pulp.....	2,400		2,400	Copenhagen to Japan.
Quillay.....	76		76	Chile to Cristobal and New York.
Rags.....		122	122	San Francisco to New York.
Resin.....	300		300	New York to Melbourne.
Rubber.....		430	430	San Francisco to New York.
Rubber, old.....	2	93	95	China and west coast to Colon and New York.
Salt.....		1,200	1,200	New York to San Francisco; San Francisco to New York.
Scrap metal.....	300	544	844	Singapore to New York; New York to Melbourne; west coast to Cristobal, New York, and England.
Seeds.....		145	145	Peru to England.
Shooks, box.....	100		100	New York to Talara.
Silver.....		107	107	Chile to Cristobal.
Silver sulphides.....		107	107	Chile to Cristobal and England.
Skins and hides.....	10	2,486	2,496	See comment.
Slate.....	44		44	New York to San Francisco.
Soap.....	203		203	New York and Liverpool to west coast.
Soda.....	100		100	New York to Sydney.
Stone.....	500		500	Copenhagen to San Francisco.
Sugar.....		48,497	48,497	See comment.
Tea.....	6	200	206	Liverpool to south Pacific ports; China to New York.
Textiles, miscellaneous.....	351		351	Cristobal to Valparaíso.
Tin.....	1,277	1,108	2,385	Liverpool and New York to west coast and Yokohama.
Tin ore.....			149	Chile and Peru to Cristobal and Liverpool.
Tin plates.....	64		64	Liverpool and New York to west coast.
Tobacco.....	545		545	Liverpool, New York, Cristobal to west coast, Australia, and New Zealand.
Turpentine.....	14		14	New York to San Francisco.
Wax.....	540	41	581	Liverpool and New York to west coast and Japan; Chile to Liverpool and Cristobal.
Wheat.....	9	1,500	1,509	New York to San Francisco; Talcahuano to Liverpool.
Wines.....	108	1,784	1,892	See comment.
Wire.....	2,290		2,290	New York to west coast and Orient.
Wood, hard.....	462	276	738	New York to San Francisco and Orient; Corinto and Talcahuano to Colon and Liverpool.
Wool.....	175	1,009	1,184	See comment.
Zinc.....		46	46	West coast to Cristobal, New York, and England.
Totals.....	249,119	326,218	575,337	

One hundred and twenty-two commodities; 35 commodities going through in both directions.

With respect to nationality, the British vessels outnumbered those of any other nation, being 76 as compared with the 52 American vessels, which came next in number to the British. The ships of other nationalities, in order of number, were: Norwegian, eight; Chilean, seven; Peruvian, five; Panamanian, four; Dutch, three; Japanese, two; and Danish, Italian, and Swedish, one each. A classification of the vessels using the Canal,

by nationalities, by months, is given in an appended table.

The miscellaneous shipments from Atlantic to Pacific were 3,300 tons of coal from Barry to the Pacific Ocean, and 10,650 tons of crude oil from Tampico to Balboa.

The miscellaneous shipment from the Pacific was 1,000 tons of lumber from Aberdeen to Havana.

# PRINCIPAL COMMODITIES.

The nature and general distribution of the cargo passing through the Canal during the month are shown in the accompanying table of commodities. The table is based on the cargo declarations made out by the masters of the vessels. The masters listed 122 different commodities during the month, of which 35 were carried through the Canal in both directions.

The principal commodities passing through the Canal during August were barley, canned fish, canned fruit, coal, copper, copper ore, cotton, general cargo, lumber, manufactured goods of iron and steel, machinery, railroad material, nitrates, crude oil, refined petroleum, skins and hides, sugar, wines, and wool. Of these, nitrates of soda were the largest by far.

Barley amounted to 8,494 tons, of which 1,387 tons were shipped from Antofagasta to London; all the rest came from San Francisco, 2,104 tons going to London and 5,003 tons to New York.

Canned fish to the extent of 239 tons passed through the Canal from the Atlantic to the Pacific; 50 tons from Christiania to San Francisco, 11 tons from Liverpool to Valparaíso, 15 tons transhipped from Cristobal to Valparaíso, 10 tons from New York to San Francisco, and 153 tons from New York to Melbourne. In the movement from the Pacific, 2,000 tons were shipped from Vancouver and Seattle to London, 977 tons from San Francisco to London, and 2,300 tons from Seattle to Boston.

Canned fruit amounting to six tons was shipped from Liverpool to the west coast of South America; New York shipped 79 tons, one to San Francisco, five to Central America, and 73 to Sydney. From the Pacific, San Francisco shipped 5,292 tons, of which 4,168 tons went to London and 1,124 to New York; and 750 tons came from Honolulu, consigned to Delaware Breakwater.

Coal amounted to 45,313 tons, all from the Atlantic side, and all but 3,300 tons (from Barry for the Pacific Ocean) from the United States. Of the 42,213 tons to the west coast of South America, 10,428 tons to Cavite.

The 12,798 tons of copper were in 20 shipments. The west coast of the United States shipped 3,082 tons, of which 750 tons went to London and the remainder to New York. The west coast of South America shipped 9,716 tons, about evenly divided between New York and Europe.

Copper ore amounted to 7,972 tons, of which 1,180 tons were shipped from Tacoma to New York, and the remainder, 6,792 tons, came from the west coast of South America, 5,758 tons going direct to New York, 792 tons

SUMMARY OF TRAFFIC THROUGH THE PANAMA CANAL SINCE ITS OPENING TO COMMERCIAL TRAFFIC.

Month.	Atlantic to Pacific				Pacific to Atlantic.				Total.			
	Ves- sels	Canal to is		Cargo tons	Ves- sels	Canal tons		Cargo tons	Ves- sels	Canal tons		Cargo tons
		Gross	Net			Gross	Net			Gross	Net	
August, 1914.....	13	58,233	41,931	49,106	11	62,049	44,047	62,178	24	120,282	85,978	111,284
September.....	27	151,878	109,694	141,762	30	151,568	111,375	180,276	57	303,446	221,059	322,038
October.....	44	240,925	174,472	166,067	40	220,179	153,744	253,288	84	461,104	328,216	421,357
November.....	54	247,479	172,825	206,510	55	205,071	149,906	242,291	92	452,550	322,731	448,801
December.....	43	204,776	145,676	179,255	57	280,896	198,618	271,219	100	485,672	344,294	450,454
January, 1915.....	44	239,456	169,728	208,062	54	251,083	171,984	240,925	98	490,571	347,212	449,007
February.....	38	209,822	147,339	150,987	53	245,522	175,523	276,078	92	455,344	322,862	427,065
March.....	57	269,901	187,563	217,447	80	405,380	288,416	417,610	137	675,281	475,984	635,057
April.....	59	279,139	199,213	237,354	60	290,738	205,326	285,457	119	569,877	404,539	522,841
May.....	67	345,701	240,098	246,534	75	360,104	252,252	332,174	142	703,805	492,350	578,708
June.....	83	412,535	296,694	320,619	60	286,330	201,116	282,561	143	698,855	497,810	603,180
July.....	93	465,726	297,329	316,773	77	356,145	250,041	388,696	170	821,871	547,370	705,469
August.....	89	416,463	289,194	249,119	72	353,298	236,857	336,218	161	769,761	525,051	575,337
Totals.....	712	3,540,054	2,470,251	2,691,627	707	3,463,365	2,445,205	3,558,971	1,419	7,008,419	4,915,456	6,250,598

direct to Liverpool, and 1,242 tons to Cristobal for transshipment.

Cotton amounting to 1,766 tons came through the Canal from the Atlantic to the Pacific. Three hundred tons came from Liverpool, for Callao and Valparaiso, and 1,466 tons from New York, 302 tons for Australia, 78 tons for Los Angeles and San Francisco, 95 tons for Valparaiso, and 991 tons for Vladivostok.

Of the goods described as "general cargo," the movement from Atlantic to Pacific amounted to 105,413 tons. Of this, 32,691 tons were in the United States coastwise trade, 4,484 tons were from Europe for the west coast of North America, 10,718 tons were from the United States for the west coast of South America, 131 tons were direct from Europe to South America, 12,180 tons were transhipped from Cristobal for the west coast of South America, and 45,209 tons went from the United States to Australia and New Zealand and the Far East.

General cargo from Pacific ports amounted to 19,401 tons, of which 15,230 tons were in the United States coastwise trade, 15 tons were from San Francisco for London, 75 tons were from Chile for England, 1,000 tons from China for New York, and 1,873 tons were from the west coast of South America, delivered at Cristobal for transshipment to the United States and Europe.

Iron ore amounted to 20,400 tons. It was all in transit from Cruz Grande to Philadelphia.

Lumber moving from the Atlantic to the Pacific amounted to 825 tons and was all from New York. Eighty tons were consigned to Melbourne, 31 tons to San Diego, and 714 tons to Callao and Mollendo. The eastward movement amounted to 20,654 tons, all in the United States coastwise trade, except 1,537 tons from San Francisco for London, and 1,000 tons from Aberdeen for Havana.

Manufactured goods of iron and steel amounting to 388 tons passed through during August from Europe for the west coast of South America, and 14,514 tons from the United States were distributed as follows: In the coastwise trade, 3,668 tons; to Australia and New Zealand, 4,186 tons; to the Philippine Islands, 400 tons; to Vladivostok, 5,270 tons; and to Chile and Peru, 1,000 tons.

Machinery amounting to 157 tons came from Liverpool for the west coast of South America, and New York shipped 8,295 tons, of which 251 tons went to San Francisco, and 19 tons to San Diego, 3,850 tons went to Australia, 2,000 tons to New Zealand, 650 tons to Peru and Chile, 525 tons to Japan, and 1,000 tons to Shanghai.

Railroad material amounting to 6,231 tons came from New York and Philadelphia, 3,400 tons for Australia and New Zealand, 1,747 tons for Vladivostok, 550 tons for Chile and Peru, and 534 tons for San Francisco.

Nitrates, all shipped from the west coast of South America, amounted to 134,793 tons. Fifteen shipments to the United States comprised 95,575 tons, and 39,218 tons were carried to Europe in eight shipments.

Crude oil amounted to 14,425 tons, of which 10,600 tons were from Tampico for Balboa, and the remainder was from New York, 925 tons for Australia and New Zealand, 700 tons for Kobe and Moji, and 2,000 tons for Valparaiso.

Refined petroleum, amounting to 17,447 tons, was from the Atlantic seaboard of the

United States, 7,500 tons for New Zealand, 135 tons for Kobe and Moji, 5,065 tons for Hankow, 2,000 tons for other Chinese ports, 1,500 tons for Sydney, 1,000 tons for Peru and Chile, 12 tons for Central America, and 235 tons for San Francisco.

New York shipped three tons of skins and hides to Sydney and seven to Vladivostok, and 2,486 tons came from Pacific ports. San Francisco shipped 163 tons to New York, 700 tons came from Hongkong for New York, and 1,623 tons came from the west coast of South America, apparently about equally divided in destination between the United States and Europe.

Sugar amounted to 48,497 tons of which 974 tons came from Peru, for transshipment at Cristobal, 9,750 tons came from the Philippine Islands for New York, and 37,773 tons from the Hawaiian Islands for Philadelphia, New York, and Boston.

Excepting five tons for the west coast of South America, the shipments of wines were all from Pacific ports. Eleven tons came from Chile to Cristobal, for transshipment, and San Francisco shipped 1,783 tons to New York.

Wool to the amount of 175 tons was shipped from Europe to Callao and Valparaiso, and 1,009 tons came from the west coast of North and South America, for the United States and Europe. Los Angeles shipped 430 tons to Boston, San Francisco shipped 404 tons to New York, and Peru and Chile shipped 175 tons, of which 125 tons went to New York and 50 tons to Liverpool.

#### TOLLS.

The tolls collected on vessels passing through the Canal during the month of August amounted to \$496,792.03; including the regular tolls on vessels of the United States Government which were not collected, the gross earnings in the month were \$528,827.23. The gross earnings and net collections by

months since the opening of the Canal to commercial traffic have been as follows:

	Gross earnings.	Net collections.
August 15-31, 1914..	88,401.80	\$38,401.80
September.....	266,513.23	265,600.30
October.....	375,787.44	366,786.48
November.....	381,533.23	369,161.28
December.....	410,043.60	407,914.80
January, 1915.....	419,037.12	398,601.12
February.....	388,904.96	383,904.96
March.....	569,784.96	551,091.56
April.....	442,415.49	442,415.49
May.....	517,054.60	522,676.95
June.....	541,181.55	539,129.05
July.....	606,578.77	573,365.67
August.....	528,827.23	496,792.03
Total.....	\$5,552,064.08	\$5,405,942.99

#### NOTICE TO MARINERS.

West Breakwater Light, Limon Bay, Colon and Cristobal Harbor.

On September 28, 1915, the intensity of the West Breakwater Light, Limon Bay, Colon and Cristobal Harbor was increased from 80 to 300 candle power. All other characteristics of this light remain unchanged.

CHESTER HARDING, Acting Governor.

BALBOA HEIGHTS, C. Z., September 28, 1915.

#### New Light is a Valuable Aid.

The new light marking the outer extremity of the West Breakwater is larger than any of the other aids to navigation in its immediate vicinity, is visible 15 miles from a bridge 30 feet above the surface of the water, and by its size and strength and elevation easily distinguishes this important point in making the Atlantic entrance to the Canal. It is a red light and flashes 12 times per minute, alternating one second light with four seconds dark.

Additional piles are being driven in the mooring station at the north end of the Cut, opposite the railroad station at Gamboa, and some of the original dolphins have been straightened.

NUMBER OF VESSELS OF VARIOUS NATIONALITIES PASSING THROUGH THE PANAMA CANAL.

Month	Atlantic to Pacific.														Total
	American	British	Chilean	Danish	Dutch	French	Honduran	Italian	Japanese	Nicaraguan	Norwegian	Panamanian	Peruvian	Russian	
August.....	12	13	1	1	1	1	1	1	1	1	1	1	1	1	13
September.....	13	13	1	1	1	1	1	1	1	1	1	1	1	1	27
October.....	15	27	1	1	1	1	1	1	1	1	1	1	1	1	44
November.....	25	26	1	1	1	1	1	1	1	1	1	1	1	1	43
December.....	29	18	2	2	2	2	2	2	2	2	2	2	2	2	44
January.....	26	10	2	2	2	2	2	2	2	2	2	2	2	2	44
February.....	18	15	2	2	2	2	2	2	2	2	2	2	2	2	39
March.....	25	24	2	2	2	2	2	2	2	2	2	2	2	2	41
April.....	25	25	2	2	2	2	2	2	2	2	2	2	2	2	57
May.....	29	25	2	3	1	1	1	1	3	4	4	1	1	2	69
June.....	25	42	3	1	1	2	2	3	7	7	7	3	3	3	83
July.....	33	41	2	3	1	1	1	6	6	6	6	4	3	3	93
August.....	23	42	4	1	3	1	1	1	2	2	2	4	3	3	89
Total.....	289	308	22	15	9	2	2	2	12	1	24	4	7	5	712

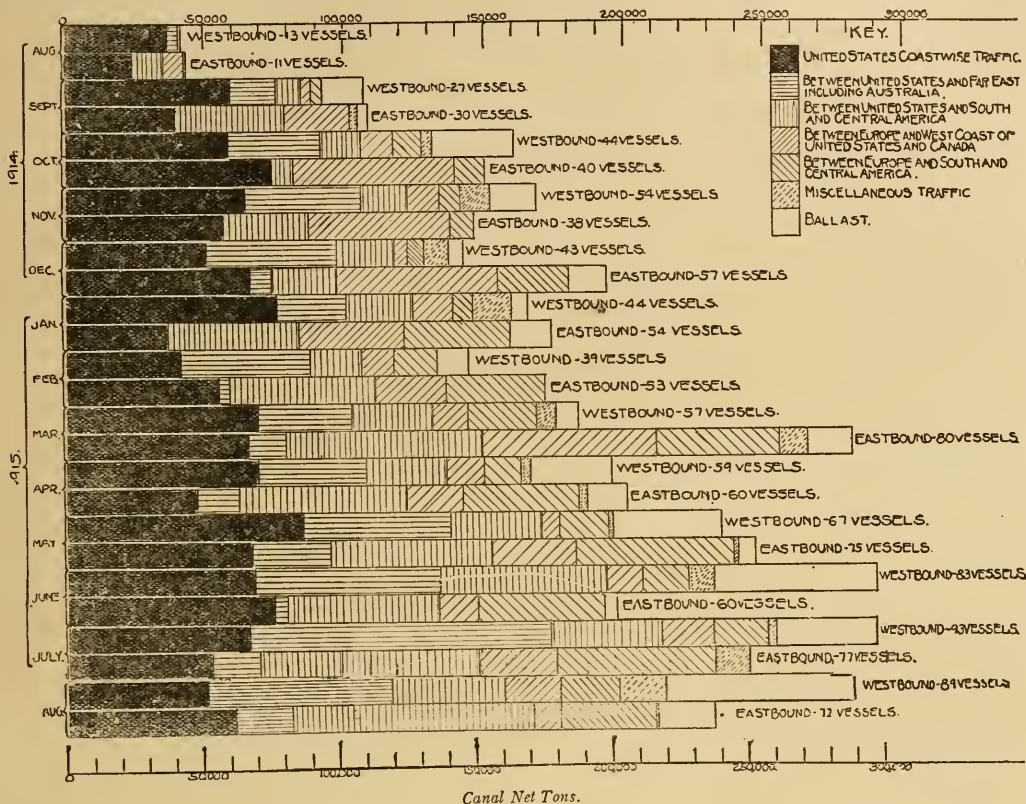
Month	Pacific to Atlantic.														Total
	American	British	Chilean	Danish	Dutch	French	Honduran	Italian	Japanese	Nicaraguan	Norwegian	Panamanian	Peruvian	Russian	
August.....	9	16	2	2	2	2	2	2	2	2	2	2	2	2	11
September.....	10	16	2	2	2	2	2	2	2	2	2	2	2	2	30
October.....	22	17	1	1	1	1	1	1	1	1	1	1	1	1	40
November.....	19	16	1	1	1	1	1	1	1	1	1	1	1	1	38
December.....	23	31	3	2	2	2	2	2	2	2	2	2	2	2	57
January.....	20	23	2	2	2	2	2	2	2	2	2	2	2	2	54
February.....	21	25	3	2	2	2	2	2	2	2	2	2	2	2	53
March.....	33	29	4	4	4	4	4	4	4	4	4	4	4	4	80
April.....	22	27	2	2	2	2	2	2	2	2	2	2	2	2	60
May.....	31	31	2	2	2	2	2	2	2	2	2	2	2	2	75
June.....	28	24	3	3	3	3	3	3	3	3	3	3	3	3	70
July.....	22	35	2	2	2	2	2	2	2	2	2	2	2	2	77
August.....	29	34	3	3	3	3	3	3	3	3	3	3	3	3	69
Total.....	289	308	24	16	2	2	3	1	3	1	32	2	5	1	*707
Grand total.	578	616	46	31	11	4	5	3	15	2	56	6	12	6	*1419

\* Including one Argentinean vessel.



## CHART OF NET TONNAGE OF TRAFFIC THROUGH THE CANAL.

The chart published below shows graphically the relative tonnage of ship movements through the Canal over the five great routes which constituted the course of over 97 per cent of the laden vessels passing through the Canal to September 1, 1915. The remainder of the traffic is over miscellaneous routings and of vessels in ballast, the relative proportions of which are also shown. The chart shows the aggregate net tonnage (Panama Canal measurement) of vessels moving in each direction, from Atlantic to Pacific and from Pacific to Atlantic, over each route every month. The abscissas at top and bottom of the chart indicate net Canal tonnage, in units of 10,000, and all the parts are drawn to scale.



Canal Net Tons.

## Additional Launch Service to Taboga.

Additional launch service between Balboa and Taboga will be furnished on Saturday and Sunday, on account of the dance which will be held at the Hotel Aspinwall on Saturday evening, October 16. The launch *Aspinwall* will leave Balboa at 5.30 and 8.10 p. m. on Saturday and the launch *Q* will be held in reserve, to be used if necessary, both on the 5.30 trip, and on the return trip at 7.15 p. m., Sunday night. The *Aspinwall* will leave Taboga on Sunday at 8 a. m., 3.30 p. m., and 7.15 p. m.

## Visit of the Twenty-Seventh Regiment.

The United States Army transport *Buford* arrived at Cristobal on Wednesday, October 6, with the Twenty-seventh Regiment of Infantry, on the way from Texas City to the Philippine Islands. On account of the obstruction in the Canal the *Buford* tied up at Cristobal and the troops disembarked. They have been distributed among the several military camps on the Canal Zone, pending orders for further movement.

## Naval Radio Officer, Canal Zone.

Effective October 14, Lieut. E. C. Ragnet, U. S. Navy, will assume the duties of radio officer of the Canal Zone, vice Lieut. R. S. Crenshaw, U. S. Navy, detached.

Arrival of the *Siberia*.

The steamship *Siberia*, formerly in the Oriental service of the Pacific Mail Steamship Company, arrived at Balboa on Sunday, October 10. The *Siberia* is a sister ship of the *Korea*, which arrived at Balboa on October 3. Both have been sold to the Atlantic Transport Company, a part of the International Mercantile Marine, and are to go into service in the Atlantic trade.

The freight steamship *Polymnia*, which passed through the Canal on August 15 in ballast, on the way from Norfolk to San Francisco, returned on October 10 with a cargo of 2,500 tons of oleum, consigned to Queenstown. The *Polymnia* belongs to the Cunard Line and is the first vessel of this line to have passed through the Canal. She is 290 feet in length by 38 feet in the beam.

## Band Concert at Gatun.

An open air concert will be given at Gatun Thursday evening, October 14, by the Twenty-ninth Infantry band.

## Proposals for the Purchase and Removal of Old French Scrap.

Sealed proposals will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, Canal Zone, until 3 p. m., October 19, 1915, and then opened in public, for the purchase and removal of all of a lot of old French dredges and claps at Balboa and also similar material on the French canal at Colon. This equipment may be examined and full information obtained upon application to the general storekeeper at Balboa. Purchaser will be required to remove the material at his own expense and cut down all old hulks to water line, or level of ground. Bidders should state in their bid what equipment would be required to be furnished by The Panama Canal and the terms of lease. The Panama Canal rate will be allowed in transporting this scrap across the Isthmus if so desired, and will also arrange for free entry into the United States. Bidders should state the length of time that will be required for the removal of material. The Panama Canal reserves the right to reject any or all bids. Proposals should be marked "Proposal for removal of old French equipment" and addressed to the Chief Quartermaster, Balboa Heights, Canal Zone.

## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

The following list of retail prices of cold storage provisions which will be effective October 14, 1915. The prices are indicated by 10 per cent. for sales to commercial and foreign naval vessels, and by 20 per cent. for sales to yachts:

## FRESH BEEF.

	Price.
Beef, suet, special, per lb.	\$.034
Beef suet, native, per lb.	03
Soup beef, special, per lb.	07
Soup beef, native, per lb.	05
Soup bone, special, per lb.	024
Soup bone, native, per lb.	021
Stew beef, special, per lb.	11
Stew beef, native, per lb.	08
Plate beef, special, per lb.	12
Plate beef, native, per lb.	08
Chuck roast (3 lbs. up), special, per lb.	12
Chuck roast (3 lbs. up), native, per lb.	08
Rib roast, 2d cut (3 1/2 lbs. up), special, per lb.	16
Rib roast, 2d cut (3 1/2 lbs. up), native, per lb.	09
Rib roast, 1st cut (3 1/2 lbs. up), special, per lb.	19
Rib roast, 1st cut (3 1/2 lbs. up), native, per lb.	11
Pot roast, special, per lb.	20
Pot roast, native, per lb.	12
Rump roast, special, per lb.	12
Rump roast, native, per lb.	12
Porterhouse roast, choice, per lb.	31
Porterhouse roast, special, per lb.	22
Porterhouse roast, native, per lb.	16
Chuck steak, special, per lb.	13
Chuck steak, native, per lb.	09
Round steak, bottom, special, per lb.	13
Round steak, bottom, native, per lb.	09
Round steak, top, special, per lb.	15
Round steak, top, native, per lb.	10
Sirloin steak, special, per lb.	20
Sirloin steak, native, per lb.	12
Sirloin steak, choice cut, special, per lb.	23
Sirloin steak, choice cut, native, per lb.	16
Rump steak, special, per lb.	12
Rump steak, native, per lb.	12
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	34
Porterhouse steak (1 1/2 lbs. up), special, per lb.	23
Porterhouse steak (1 1/2 lbs. up), native, per lb.	17
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	28
Porterhouse steak, short, special, per lb.	20
Porterhouse steak, short, native, per lb.	12
Tenderloin steak, special, per lb.	35
Tenderloin steak, native, per lb.	25

## FRESH MEATS.

Lamb chops, per lb.	29
Lamb chops, shoulder, per lb.	20
Lamb, legs, 5 to 8 lbs., per lb.	20
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	15
Lamb, stewing, per lb.	12
Mutton chops, short cut, per lb.	23
Mutton chops, shoulder, per lb.	17
Mutton, leg, 8 to 10 lbs., per lb.	19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	12
Mutton, stewing, per lb.	09
Pork loins, fresh (see footnote), per lb.	23 1/2
Pork loins, chops, or roast, per lb.	18
Pork, shoulders, fresh (see footnote), per lb.	19 1/2
Veal chops, per lb.	30
Veal chops, short, per lb.	20
Veal cutlets, per lb.	36
Veal, loin for roasting, per lb.	30
Veal, shoulder for roasting, not under 4 lbs., per lb.	15
Veal, stewing, per lb.	12

## MISCELLANEOUS.

Bologna, per lb.	11
Bluefish, per lb.	16
Brains, calves, per lb.	07
Calves' heads, ea.	78
Codfish, dried, per lb.	11
Haddock, smoked, per lb.	07
Hallbut, fresh, per lb.	11*
Kidneys, beef, per lb.	08 1/2
Livers, beef, per lb.	09
Livers, calves, per lb.	22
Oysters, fresh, per lb.	30
Pates de foie gras, jar.	67
Peel, citron, per lb.	21
Peel, lemon, per lb.	15
Peel, orange, per lb.	04
Pigs' feet, fresh, per lb.	04
Pigs' heads, fresh, whole, ea.	83
Pigs' heads, fresh, 1/2 whole, ea.	42
Salmon, fresh, per lb.	10
Sausage, bologna, per lb.	07
Sausage, frankfurter, per lb.	14
Sausage, frankfurter, imported, tin.	03
Sausage, liverwurst, per lb.	08
Sausage, pork, per lb.	13*
Sausage, pork, homemade, per lb.	23
Spare ribs, pork, per lb.	14
Steak, hamburger, pkg.	18
Steak, hamburger, per lb. and contained.	14
Stew bread, beef, per lb.	19
Tails, ox, per lb.	09*
Tongue, beef, native, whole, per lb.	20
Whitefish, smoked, per lb.	13
Yeast, per lb.	31
Yeast, cake.	02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	28*
Bacon, breakfast, sliced, per lb.	29*
Bacon, sliced, jar.	30

Bacon, sliced, tin.	27
Bacon, squares, whole square, per lb.	19
Bacon, strips, whole strip.	20
Beef, corned—No. 1, per lb.	15
Beef, corned—No. 2, per lb.	12
Bacon, genuine Westphalia, per lb.	20
Ham, lunch, per lb.	40
Ham, maced, "Bologna style", per lb.	12
Ham, mid York and Cumberland, per lb.	43
Ham, shoulders, boneless, sugar cured, shoulder, per lb.	14
Ham, sugar cured (whole) per lb.	20*
Ham, sugar cured (half) per lb.	22*
Ham, sugar cured (shoulder) per lb.	26*
Ham, sugar cured, boiled (whole) per lb.	26*
Ham, sugar cured, boiled (half) per lb.	28*
Ham, sugar cured, boiled (sliced) per lb.	34*
Pigs' feet, pickled, per lb.	08
Pork, bellies, per lb.	18
Pork, clear, per lb.	12
Pork, standard meat, per lb.	14
Tongue, beef, corned active, whole, per lb.	22
Tongue, ox, whole, 3 to 5 lbs., per lb.	24
Tongue, pigs, per lb.	22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	31*
Broilers, milk fed, per lb.	34*
Capons, per lb.	34
Chickens, fancy roasting, corn fed, per lb.	28
Chickens, fancy roasting, milk fed, per lb.	32
Ducklings, per lb.	24*
Ducks, mallard, 2 to 2 1/2 lbs., ea.	235
Fowls, light, per lb.	23
Fowls, west, dry picked, per lb.	24*
Geese, per lb.	25*
Grouse, ea.	100
Pheasants, ea.	135
Squabs, per lb.	26
Turkeys, per lb.	29

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	39*
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	38*
Butter, Sheffield farms, extra fancy, per lb.	58
Cheese, Edim, ea.	115
Cheese, Edim, tin	39
Cheese, Gouda, per lb.	36
Cheese, Parmesan, per lb.	38
Cheese, Philadelphia cream, cake.	09
Cheese, Roquefort, per lb.	43*
Cheese, swiss, cake.	09
Cheese, Swiss, per lb.	34
Cheese, Young America, per lb.	20
Cream, 30 per cent, 1 qt.	15**
Cream, 40 per cent, 1 qt.	23**
Cream, 30 per cent, qt.	45**
Eggs, fresh, per doz.	36
Eggs, fresh, 1 doz. (only)	18
Ice-cream, bottle.	25**
Ice cream, (see footnote) qt.	25*
Ice cream, (see footnote) 1 gal.	50*
Milk, Sheffield farms, qt.	15**
Oleomargarine, per lb. carton.	29

## VEGETABLES

Beets, per lb.	02
Cabbage, per lb.	02
Carrots, per lb.	02
Cauliflower, per lb.	11*
Celery, per head.	04*
Cucumbers, per lb.	04
Egg plants, per lb.	04
Onions, per lb.	03
Par-nips, per lb.	03 1/2
Pepp'ers, green, per lb.	03
Plantains, per doz.	12
Potatoes, white, per lb.	02
Potatoes, sweet, per lb.	02
Squash, per lb.	02
Tomatoes, per lb.	02
Turnips, per lb.	01
Yams, lucia, per lb.	03

## FRUITS.

Apples, evaporated, per lb.	11
Apples, fresh, per lb.	04
Apples, 1 ea select, per lb.	05
Apples, evaporated, per lb.	12*
Bananas, 8 hands and 7 hands, per bunch.	48
Bananas, 6 and 7 hands, per bunch.	42
Bananas, ea.	004
Coconuts, ea.	04
Figs, fresh, per lb.	11
Figs, dried, 12 oz pkg.	14
Grapes, Malaga and Tokay, per lb.	07*
Grapefruit, select, ea.	09*
Lemons, per doz.	15*
Limes, per 100	09*
Oranges, select, ea.	05
Peaches, evaporated, per lb.	06
Peaches, fresh, per lb.	05
Pears, evaporated, per lb.	23
Pears, fresh, per lb.	07
Prunes, stewed, per lb.	11
Raisins, dried, pkg.	11
Raisins, table cluster, per lb.	27*
Tangerines, ea.	014

\* Indicates advance from preceding list.  
 \*\* Indicates five cents allowed for return of bottle.  
 \* Indicates reduction from preceding list.  
 † Sold only from commissaries. no orders taken for delivery.

‡ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## OFFICIAL CIRCULARS.

## Appointment.

THE PANAMA CANAL,  
 EXECUTIVE OFFICE,  
 BALBOA HEIGHTS, C. Z., September 28, 1915.

CIRCULAR NO. 661-33:

Effective October 1, 1915, Commander H. I. Cone, U. S. N., is appointed Marine Superintendent, and Chairman of the Board of Almsurers, vice Capt. Hugh Rodman, U. S. N., relieved from duty with The Panama Canal.

CHESTER HARDING,  
 Acting Governor.

## Deductions from Payrolls.

THE PANAMA CANAL,  
 ACCOUNTING DEPARTMENT,  
 BALBOA HEIGHTS, C. Z., October 1, 1915.

Memorandum for the Chief Timekeeper and all concerned—It appears to be essential that all deductions on payrolls (with certain exceptions) be handled through the Auditor's office before any deduction is made. This applies to all miscellaneous deductions except for commissary coupon books, meal tickets, meals on floating equipment, lost metal checks, and lost property.

All requests for miscellaneous deductions from either The Panama Canal of Panama Railroad payrolls must be forwarded to the Auditor, and before the deductions is entered on the rolls the requests for such deduction will be initiated by the chief examiner.

H. A. SMITH,  
 Auditor, The Panama Canal.

## Report of Physical Examination.

THE PANAMA CANAL,  
 EXECUTIVE DEPARTMENT,  
 BALBOA HEIGHTS, C. Z., October 8, 1915.

To foremen, clerks, and others in charge of timekeeping—Herewith is sent to you a supply of form 369 (Report of physical examination of gold employees). Have each male "gold" employee on your time book fill out one of these forms. Then collect the forms, checking carefully to make sure that each gold employee has filled one out and return them to the Executive Secretary, Balboa Heights, within five days after their receipt.

E. W. PALMER,  
 Chief Timekeeper.

## Approved:

C. A. McILVAINE,  
 Executive Secretary.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, October 20, 1915, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same. The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, October 22, 1915, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board,  
 GEORGE J. VANDERLICE,  
 Recorder, Board of Local Inspectors.



## SHIPPING INFORMATION.

## November Weather Probabilities.

The weather conditions described hereafter may be expected to prevail at the Canal entrances during the month of November, 1915. Predictions are based on the November records taken at Colon and Ancon for the past eight and nine years, respectively.

**Winds**—Light and variable winds of an average hourly velocity of from six to 12 miles will continue throughout the month at the Atlantic entrance to the Canal. South-east and west winds will predominate, the former occurring during the early morning hours and the latter during the afternoon. Maximum velocities of from 30 to 40 miles an hour are possible during occasional rain or thunder squalls.

Over the interior and at the Pacific entrance, light northwest winds will prevail with a considerable percentage of variable wind during the daytime. The hourly velocity will range between five and eight miles, although maximum velocities of 30 miles an hour are liable to occur during rain or thunder squalls of short duration. At both the Atlantic and Pacific entrance the hours of maximum wind are from 2 to 3 p. m. and those of least wind are from 5 to 8 a. m.

**Rain**—The average November rainfall at Colon is 21.66 inches and on the Pacific side 10.45 inches, these averages being for periods of 44 and 18 years, respectively. Twenty-seven days with rain may be expected on the Atlantic side and about 23 on the Pacific, while the average numbers of days with heavy rain (1.00 inch or more) are nine and three, respectively. The greater part of the rainfall (about 70 per cent) occurs during the daytime at the Pacific entrance and over the interior, while along the Atlantic coast nearly half of the rain falls during the night time.

**Fogs**—A few fogs may be expected at the Pacific entrance but none are likely to occur on the Atlantic coast. The average number of nights during the month with light or dense fog over the Gaillard Cut section of the Canal is 14. These fogs should not prove a hindrance to its navigation in the daytime as practically all of them lift or become dissipated before 8.30 a. m.

**Temperature**—The average shade air temperature will be about 79 degrees Fahrenheit over both coasts. The temperature on the Atlantic coast is more equable than that on the Pacific side but the time of occurrence of the maximum and minimum temperatures is the same for both coasts, being from 12 noon to 2 p. m. and from 4 to 6 a. m., respectively. On the Atlantic coast the temperature is not likely to rise above 90° F., or fall lower than 70° F., while at the Pacific entrance the maximum temperature may be as high as 94° F. and the minimum so low as 67° F. The mean daily range is approximately eight degrees Fahrenheit on the Atlantic side and 14 degrees on the Pacific.

**Barometric pressure**—The average sea level atmospheric pressure will be about 29.85 inches. Local barometric readings are of little value in forecasting weather conditions, as, except for the diurnal change, fluctuations in air pressure on the Isthmus are very slight. The maximum pressure during the month may not be expected to exceed 29.98 inches or the minimum to fall lower than 29.68 inches.

**Relative humidity**—The relative humidity

of the atmosphere should average about 88 per cent over both coasts. The range is greater on the Pacific coast, the night time humidity being about 95 per cent and the average minimum during the day time about 75 per cent, while on the Atlantic coast they are 92 per cent and 83 per cent, respectively.

**Storms**—The so-called "northers" may extend as far south as the Atlantic entrance of the Canal during the month of November. These storms are characterized by steady, brisk, northerly winds ranging in velocity up to 30 or more miles an hour, and are usually accompanied by a heavy swell. Local wind, thunder, or rain squalls of more or less limited extent may be expected quite frequently during the month. Generally cloudy weather will continue over both coasts, and smooth to moderate seas may be expected at the Pacific entrance.

**Tides**—Tidal fluctuations need not be considered in navigating the Atlantic entrance to the Canal as the extreme range is about two feet. An average tidal range of about 13 feet occurs at the Pacific entrance, while the maximum range may reach 20 feet during spring tides.

Panama (Balboa) tide predictions for the remainder of October and for November are given below:

**Tide Predictions.**  
The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (−) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

Panama (Balboa) tide predictions until December 1 are given in this table:

## OCTOBER.

DATE.	Time and height of high and low water.		
Wed., October 13...	0:12	6:12	12:40
Thurs., October 14...	0:00	16:3	0:6
Fri., October 15...	1:07	7:00	13:35
Sat., October 16...	1:56	7:56	14:30
Sun., October 17...	2:19	8:14	1:5
Mon., October 18...	3:07	9:04	15:37
Tues., October 19...	2:9	13:0	2:4
Wed., October 20...	4:16	10:28	16:51
Thurs., October 21...	3:5	12:2	2:9
Fri., October 22...	5:03	11:55	18:02
Sat., October 23...	3:5	12:2	2:8
Sun., October 24...	0:37	6:44	13:09
Mon., October 25...	1:30	2:9	12:7
Tues., October 26...	2:18	7:41	14:5
Wed., October 27...	1:37	2:1	13:4
Thurs., October 28...	2:27	8:30	14:52
Fri., October 29...	14:3	1:4	14:9
Sat., October 30...	3:07	9:11	15:32
Sun., October 31...	14:8	0:7	14:4
Mon., October 1...	3:44	9:51	16:09
Tues., October 2...	15:0	0:4	14:6
Wed., October 3...	2:18	10:29	16:43
Thurs., October 4...	15:0	0:3	14:3
Fri., October 5...	4:51	11:05	17:17
Sat., October 6...	14:8	0:5	14:2
Sun., October 7...	5:23	11:42	17:51
Mon., October 8...	14:4	0:2	14:2
Tues., October 9...	5:57	12:20	18:27
Wed., October 10...	13:9	1:5	13:2
Thurs., October 11...	0:38	6:32	13:0
Fri., October 12...	2:9	13:2	12:5
Sat., October 13...	1:20	7:09	13:44
Sun., October 14...	3:6	12:5	3:0
Mon., October 15...	2:08	7:53	14:32
Tues., October 16...	4:3	11:7	16:3
Wed., October 17...	3:05	8:49	15:32
Thurs., October 18...	4:8	11:1	16:1

## NOVEMBER.

DATE.	Time and height of high and low water.			
Mon., Nov. 1.....	4:09	10:02	16:34	22:52
Tues., Nov. 2.....	4:8	10:9	17:34	11:4
Wed., Nov. 3.....	5:13	11:17	17:34	23:54
Thurs., Nov. 4.....	4:4	11:1	18:30	12:1
Fri., Nov. 5.....	6:13	12:20	18:30	12:1
Sat., Nov. 6.....	3:6	11:8	3:1	19:20
Sun., Nov. 7.....	0:46	7:04	13:14	19:20
Mon., Nov. 8.....	1:31	1:4	12:8	20:2
Tues., Nov. 9.....	1:32	7:51	14:01	20:06
Wed., Nov. 10.....	14:2	1:2	13:8	1:3
Thurs., Nov. 11.....	2:20	8:36	14:47	20:51
Fri., Nov. 12.....	1:5	9:20	15:2	21:37
Sat., Nov. 13.....	2:58	9:20	15:29	21:37
Sun., Nov. 14.....	16:2	1:0	15:7	0:2
Mon., Nov. 15.....	3:43	10:04	16:13	22:23
Tues., Nov. 16.....	16:8	1:4	16:2	0:5
Wed., Nov. 17.....	4:26	10:50	16:58	23:09
Thurs., Nov. 18.....	17:1	1:8	16:3	0:5
Fri., Nov. 19.....	5:12	11:37	17:45	23:58
Sat., Nov. 20.....	16:9	1:5	16:0	0:0
Sun., Nov. 21.....	6:00	12:26	18:35	.....
Mon., Nov. 22.....	16:3	0:9	15:4	.....
Tues., Nov. 23.....	0:50	6:51	13:18	19:30
Wed., Nov. 24.....	0:8	15:3	14:01	14:6
Thurs., Nov. 25.....	1:46	7:47	14:15	20:30
Fri., Nov. 26.....	1:7	14:1	1:1	13:7
Sat., Nov. 27.....	2:49	8:54	15:18	21:40
Sun., Nov. 28.....	1:3	10:10	16:24	21:1
Mon., Nov. 29.....	3:59	10:10	16:24	21:1
Tues., Nov. 30.....	3:1	12:2	2:8	12:8
Wed., Nov. 1.....	5:10	11:31	17:33	.....
Thurs., Nov. 2.....	11:9	3:1	.....	.....
Fri., Nov. 3.....	0:07	6:16	13:1	19:37
Sat., Nov. 4.....	12:9	3:0	12:1	3:1
Sun., Nov. 5.....	1:08	7:14	13:42	19:32
Mon., Nov. 6.....	1:3	15:5	12:6	2:9
Tues., Nov. 7.....	1:58	8:03	14:20	20:18
Wed., Nov. 8.....	13:5	2:0	13:1	2:6
Thurs., Nov. 9.....	2:40	8:47	15:11	21:01
Fri., Nov. 10.....	13:9	1:5	13:5	2:3
Sat., Nov. 11.....	3:18	9:36	15:48	22:45
Sun., Nov. 12.....	14:1	1:1	13:7	2:1
Mon., Nov. 13.....	3:54	10:05	16:24	22:21
Tues., Nov. 14.....	14:2	0:9	13:9	2:1
Wed., Nov. 15.....	4:20	10:41	16:58	22:59
Thurs., Nov. 16.....	14:2	0:9	13:8	2:2
Fri., Nov. 17.....	5:02	11:20	17:32	23:37
Sat., Nov. 18.....	14:1	1:0	13:7	2:4
Sun., Nov. 19.....	13:8	1:4	13:4	.....
Mon., Nov. 20.....	0:18	6:12	12:38	18:46
Tues., Nov. 21.....	2:8	13:4	1:18	13:0
Wed., Nov. 22.....	0:38	6:49	14:19	19:26
Thurs., Nov. 23.....	3:2	12:9	2:3	12:7
Fri., Nov. 24.....	1:44	7:39	14:04	20:08
Sat., Nov. 25.....	3:6	12:3	2:8	12:4
Sun., Nov. 26.....	2:8	8:17	14:52	20:57
Mon., Nov. 27.....	3:9	11:8	3:4	12:2
Tues., Nov. 28.....	3:28	9:15	15:46	21:53
Wed., Nov. 29.....	4:0	11:5	3:5	12:3

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, October 9, 1915:

DAY AND DATE.	STATIONS.				
	Vigia.	Alhajuela.	Gatun Lake.	Miraflores Lake.	
Sun., Oct. 3.....	129.57	95.10	86.06	86.00	54.36
Mon., Oct. 4.....	127.50	93.67	86.06	86.07	54.24
Tues., Oct. 5.....	130.29	95.06	86.06	86.10	54.11
Wed., Oct. 6.....	132.80	97.65	86.06	86.16	54.11
Thurs., Oct. 7.....	128.80	94.93	86.06	86.05	54.17
Fri., Oct. 8.....	128.85	94.93	86.06	86.03	54.90
Sat., Oct. 9.....	132.85	97.35	86.16	86.18	54.39

Heights of low water to nearest foot.....

## Misdirected Letters.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts, and may be procured upon application of the addressee:

Ball, Lieut. Horace C. \* Lockett, Joseph  
Boone, Allen \* Alasco, Oscar  
Brenner, Volney \* Marion, Oscar  
Caffery, Lieut. C. S. \* Marsburn, H. A.  
Chadwick, Joseph F. \* Martin, E. K.  
Conkling, W. \* Mayers, Gerald  
Connolly, Capt. E. \* Mulhern, P. T.  
Cutting, C. W. \* Munro, P. F.  
Fulton, Jas. E. \* Newman, A.  
Hanley, Henry \* Perkins, Lee R.  
Hill, Iver G. \* Reed, Robert E.  
Hunter, William \* Rhyno, Serg. J. G.  
Hyer, Henry \* Roberts, Miss Margueriet  
Kinnaird, J. D. \* Rehn, Miss Rebecca  
Knecht, Earl C. \* Steffen, Oscar F.  
Leford, Andrew M. J. \* Templeton, Mrs. F. E.  
Licari, Louis \* West, Charles

\*Paper, †Package.



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., October 10, 1915.)

THROUGH THE CANAL—ATLANTIC TO PACIFIC.									
Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Oct. 11.	Camino	American	Western Steam Navigation Co.	Philadelphia	San Francisco	Coal	2,700	3,325	2,207

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

No vessels were despatched from the Pacific entrance for transit through the Canal. Vessels arriving during the week, bound for the Atlantic, moored in the harbor at Balboa.

The vessel entering the Canal from the Atlantic, as shown above, lay in the anchorage basin in Gatun Lake, awaiting the opening of navigation through the Cut.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

Date	Vessel	Line	From	Date	Vessel	Line	From
Oct. 4.	Strathbeg	Strathbeg Steamship Co.	Norfolk, Va.	Oct. 12.	Volga	Volga S. S. Co.	Sou. Pacific ports.
Oct. 4.	Terris	Wilhelmshagen Dmsh. Akties.	New Orleans.	Oct. 14.	Cacicque	N. Y. & Pacific S. S. Co.	Portland.
Oct. 5.	Kim	P. Johannessen	Norfolk.	Oct. 15.	Torridge	Tatem St. Nav. Co.	Portland.
Oct. 5.	Florence Luckenbach	Luckenbach Line	New York.				
Oct. 5.	Greyhound Castle	Greyhound S. S. Co.	New York.				
Oct. 5.	Bellgrano	Bellgrano S. S. Co., Ltd.	New York.				
Oct. 6.	Prophet	John Gaff & Co.	Funchall.				
Oct. 6.	Buford	U. S. Army transport.	Galveston.				
Oct. 6.	City of Birmingham	Ellerman Lines, Ltd.	Galveston.				
Oct. 6.	Santa Clara	Atlantic & Pacific S. S. Co.	New York.				
Oct. 7.	Gambia River	British Empire Steam Nav.	New York.				
Oct. 8.	Nevadan	American-Hawaiian Line	New York.				
Oct. 11.	Pacific	Johnson Line	Christiana.				
Oct. 11.	Panama Transport	Empire Transport Co., Ltd	Baltimore.				

\*Other than vessels which passed through the Canal.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC.

Date	Vessel	Line	From	Date	Vessel	Line	From
Oct. 4.	Strathbeg	Strathbeg Steamship Co.	Norfolk, Va.	Oct. 12.	Volga	Volga S. S. Co.	Sou. Pacific ports.
Oct. 4.	Terris	Wilhelmshagen Dmsh. Akties.	New Orleans.	Oct. 14.	Cacicque	N. Y. & Pacific S. S. Co.	Portland.
Oct. 5.	Kim	P. Johannessen	Norfolk.	Oct. 15.	Torridge	Tatem St. Nav. Co.	Portland.
Oct. 5.	Florence Luckenbach	Luckenbach Line	New York.				
Oct. 5.	Greyhound Castle	Greyhound S. S. Co.	New York.				
Oct. 5.	Bellgrano	Bellgrano S. S. Co., Ltd.	New York.				
Oct. 6.	Prophet	John Gaff & Co.	Funchall.				
Oct. 6.	Buford	U. S. Army transport.	Galveston.				
Oct. 6.	City of Birmingham	Ellerman Lines, Ltd.	Galveston.				
Oct. 7.	Gambia River	Atlantic & Pacific S. S. Co.	New York.				
Oct. 8.	Nevadan	British Empire Steam Nav.	New York.				
Oct. 11.	Pacific	American-Hawaiian Line	New York.				
Oct. 11.	Panama Transport	Johnson Line	Christiana.				
Oct. 11.	Panama Transport	Empire Transport Co., Ltd	Baltimore.				

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	To
Oct. 7.	Savona	Italian Line	Genoa.	Oct. 5.	Vegadesk	Earn Line	Felton Cuba.
Oct. 9.	Contra	Elders & Fyffes	Port Limon.	Oct. 9.	Cayana	Elders & Fyffes	Bristol, via Jamaica.
Oct. 10.	Legaspi	Spanish Line	Barcelona.	Oct. 11.	Savona	Italian Line	Genoa.
Oct. 11.	Danube	Royal Mail Steam Pack. Co.	London.				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	To
Oct. 12.	Legaspi	Spanish Line	Barcelona.	Oct. 12.	Danube	Royal Mail Steam Pack. Co.	London.

\*Other than vessels which arrived for transit through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	To
Oct. 4.	Cauca	Pacific Steam Nav. Co.	Guayaquil.	Oct. 4.	Yorktown	U. S. Navy	Corinto.
Oct. 5.	Aysen	South American S. S. Co.	Lola.	Oct. 7.	Onitca	American-Hawaiian Line	New York.
Oct. 5.	Alaskan	American-Hawaiian Line	Tahoga.	Oct. 7.	Alaskan	American-Hawaiian Line	New York.
Oct. 6.	Solano	Solano S. S. Co.	Portland.	Oct. 10.	Hualloga	Peruvian Line	Mollendo.
Oct. 6.	Hottie Luckenbach	Luckenbach S. S. Co.	San Francisco.	Oct. 10.	Montanan	American-Hawaiian Line	New York.
Oct. 6.	Montanan	American-Hawaiian Line	Los Angeles.	Oct. 10.	Montanan	American-Hawaiian Line	New York.
Oct. 6.	American	American-Hawaiian Line	Tahoga.	Oct. 11.	Mars	U. S. Navy	San Francisco.
Oct. 6.	Pachito	Peruvian Line	Callao.				
Oct. 10.	Kronland	Panama Pacific Line	San Francisco.				
Oct. 10.	Jamaica	Pacific Steam Nav. Co.	Tumaco.				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	To
Oct. 11.	Pennsylvania	Pacific Mail S. S. Co.	San Francisco.	Oct. 11.	Kronland	Panama Pacific Line	San Francisco.
Oct. 11.	Pennsylvania	Pacific Mail S. S. Co.	San Francisco.	Oct. 11.	Jamaica	Pacific Steam Nav. Co.	San Francisco.
Oct. 11.	Pennsylvania	Pacific Mail S. S. Co.	San Francisco.	Oct. 11.	Columbia	Wilson Bros. & Co.	San Francisco.
Oct. 11.	Pennsylvania	Pacific Mail S. S. Co.	San Francisco.	Oct. 11.	Cauca	Pacific Steam Nav. Co.	Guayaquil.
Oct. 11.	Pennsylvania	Pacific Mail S. S. Co.	San Francisco.	Oct. 11.	Aysen	South American S. S. Co.	Valparaiso.
Oct. 11.	Pennsylvania	Pacific Mail S. S. Co.	San Francisco.	Oct. 14.	Pachito	Peruvian Line	Mollendo.

\*Including vessels arriving for transit through the Canal.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.				CRISTOBAL-COLON TO NEW ORLEANS.			
Vessel.	Line.	Sails.	Arrives.	Vessel.	Line.	Sails.	Arrives.
Almirante	U. F. C. Oct.	6.	Oct. 13	Parishmina	U. F. C. Oct.	14.	Oct. 19
Panama	P. R. R. Oct.	7.	Oct. 13	Atenas	U. F. C. Oct.	14.	Oct. 21
Pastores	U. F. C. Oct.	9.	Oct. 17	Atenas	U. F. C. Oct.	21.	Oct. 26
Zacapa	U. F. C. Oct.	13.	Oct. 20	Turrialba	U. F. C. Oct.	21.	Oct. 28
Allianca	P. R. R. Oct.	14.	Oct. 20	Heredia	U. F. C. Oct.	28.	Nov. 2
Calamares	U. F. C. Oct.	16.	Oct. 24	Abangarez	U. F. C. Oct.	28.	Nov. 4
Carrillo	U. F. C. Oct.	20.	Oct. 27	Parishmina	U. F. C. Nov.	4.	Nov. 9
Colon	P. R. R. Oct.	21.	Oct. 27	Atenas	U. F. C. Nov.	4.	Nov. 11
Tenadores	U. F. C. Oct.	23.	Oct. 31	Cartago	U. F. C. Nov.	11.	Nov. 16
Santa Marta	U. F. C. Oct.	27.	Nov. 3	Turrialba	U. F. C. Nov.	11.	Nov. 18
Advance	P. R. R. Oct.	28.	Nov. 4	Heredia	U. F. C. Nov.	18.	Nov. 23
Metapan	U. F. C. Oct.	30.	Nov. 8	Abangarez	U. F. C. Nov.	18.	Nov. 25
Almirante	U. F. C. Nov.	3.	Nov. 10				
Allianca	P. R. R. Nov.	4.	Nov. 10				

## CRISTOBAL-COLON TO NEW YORK.

Vessel.	Line.	Sails.	Arrives.	Vessel.	Line.	Sails.	Arrives.
Santa Marta	U. F. C. Oct.	14.	Oct. 21	Parishmina	U. F. C. Oct.	14.	Oct. 19
Advance	P. R. R. Oct.	15.	Oct. 22	Atenas	U. F. C. Oct.	14.	Oct. 21

# CANAL



# RECORD

Volume IX.

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No. 9.

## The Canal Record

Official publication of The Panama Canal.

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All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### The Slide Situation.

With respect to the obstruction in the Canal channel at the bases of the east and west Culebra slides, there is no essential change since last week. The excavation from the Culebra slides during the seven days ending at 6 a. m., Tuesday, October 19, amounted to 198,502 cubic yards. Other excavation in the Cut amounted to 28,311 cubic yards during the same period. The ladder dredge *Corozal* was out of service during the week, undergoing repairs at Paraiso, but resumed work on October 19.

### Ships That are Waiting for Transit.

In the morning of Tuesday, October 19, the vessels waiting on the Atlantic side were, in the order of arrival, the *Oliver J. Olson*, *Tallac*, *Acajulla*, *Wellington*, *Clio*, *Quilpué*, *Eureka*, *Strathbeg*, *Florence Luckenbach*, *Bufoad*, *Santa Clara*, *Camino*, *Pacific*, *Julandía*, *Herakles*, *Lewis Luckenbach*, and *California*.

Vessels which left Cristobal during the week to go by longer routes are the *Belgrano*, *Rauma*, *Maritime*, *Newburn*, *Arizonan*, *Nevadan*, *Gambia River*, *Baron Cawdor*, *Riouu*, *Musician*, *Iowan*, *City of Colombo*, *Thode Fagelund*, *Terrier*, *Santa Cecilia*, *Panama Transport*.

The vessels waiting on the Pacific side are, in the order of their arrival, the *Newport*, *Llandudno*, *Flamenco*, *Clan Alpine*, *Amista*, *Edith*, *Olson* and *Mahony*, *Admiralen*, *Santa Catalina*, *Trader*, *Iguitos*, *Manchester Civilian*, *Alban*, *Machaoa*, *Strathairly*, *Aboukir*, *Grahamland*, *Korea*, *Kentra*, *Strathfillan*, *Lena*, *Sirinda*, *Caldergrove*, *Netherpark*, *Polymnia*, *Orange River*, *Vellore*, *Corango*, *Saint Louis*,

*Gisella*, *Navajo*, *Siberia*, *Chimu*, *Toromeo*, *Edison Light*, *Harry Luckenbach*, *Newton*, *Lady Carrington*, *Bravo*, *Reading*, *Aspinet*, *Windber*.

Those which have left during the past week are the *Sullana*, *Hackensack*, *Rondo*, *Vinstra*, *Devian*, *Morazan*, *Tenpaian Maru*, *American*, *Ortega*, *River Forth*, *Hammershus*, *Benedict*, *Columbia*, *Victoria*, *Derwent River*.

### Tolls Refunded to Vessels which Leave on Account of Closing of Canal.

Those vessels which after entering the Canal have turned back to the ocean from which they came, to seek some other route instead of waiting for the opening of the Canal, are receiving refunds of the money paid for their tolls. Every ship entering the Canal has an account with the Collector against which are charged her tolls and any other indebtedness to the Canal which she may incur, such as for fuel, supplies, towage, etc., and when the ship leaves the Canal the account is closed, whatever balance lies to her favor being refunded to her operators unless request has been made for the maintenance of an open account. In the case of the ships which have turned back on account of the slides, the item of tolls is marked off of the account, and the refund to the operator increased by so much.

### Preparations for Manufacture of More Cement Tile Roofing.

The American Cement Tile Manufacturing Company, to which contract has been let for a total of approximately 2,200 squares of 100 square feet of cement tile roofing, is preparing to begin work on the execution of the contract, and has installed its equipment for the job in the former planing mill of the Cristobal shops. It is expected that manufacture will begin about October 27.

This is the company which supplied the roofing for the new Balboa shops, from a plant established in 1913 at Paraiso shops, and the assistant superintendent on the previous job is superintendent for the present contract. He has employed a number of the laborers who were employed on the first contract. The roofing now to be manufactured is mostly for Pier 7 at Cristobal, Pier 18 at Balboa, and to replenish the old stock of spares which was drawn upon to furnish the roof for the Panama Railroad station in Panama.

### Track for Dry Dock Crane.

The driving of caissons was begun last week to support a track for carrying the proposed 50-ton dry dock crane from the walls of the new dry dock No. 1 to section d-e of the quay wall at Balboa, which will be known as Dock 14. Four-foot steel shells are being used, and the penetration required to reach rock will be from 40 to 60 feet. The rails for the trucks of the crane will be 20 feet apart. The crane will weigh about 100 tons.

## WIRELESS TELEPHONY.

Darien Radio Station Has Received Aerial Telephone Messages since August 27.

In the recent tests of the wireless telephone, in the course of which speech was transmitted from the radio station at Arlington to Mare Island and San Diego, California, and to Pearl Harbor, Hawaii, the radio station at Darien played an interesting part which it has become permissible to reveal since the publication of the results in the United States.

In the development of the invention, begun early in the year, the American Telephone and Telegraph Company established a radio plant at Montauk Point, Long Island, from which messages were sent by aerial telephony to New York City, then to Wilmington, Del., 200 miles away, and finally to St. Simon's Island, which lies off the coast of Georgia, about 60 miles south by west from Savannah and about 1,000 miles from Montauk Point.

The success of this transmission led the company to secure the cooperation of the Navy Department for the use of the high power radio station at Arlington for the sending of messages and of other Navy stations for experiments in receiving them. It was agreed on account of the situation with respect to the patent on the device that entire secrecy should be preserved.

In the subsequent experiments the Darien station was the first of the remote stations to receive any of the test messages. The first satisfactory receipt of a message at Darien was on August 27, over a month in advance of the performance of September 29 in which transmission was made from Arlington to San Francisco, and following which the results of the tests were made public. Transmission to Darien, a distance of 2,100 miles from Arlington, was an important step beyond the 1,000-mile communication from Montauk Point to St. Simon's Island, and served as a practical assurance that transcontinental radiotelephony was feasible. The talk in the official test on September 29 was not heard by the men at Darien because they were not "listening in" at the time. A message telling them to listen at noon of the 29th had been sent by radiotelegraphy to New Orleans, to be relayed to Darien, but the blowing over of one of the towers of the New Orleans station by the most recent hurricane put that station out of business and delayed the transmission of the message to Darien until after the tests of September 29 were over. However, parts of the transmission of that day were heard by fortuitous listening, and many other messages have been received from time to time. In all the regular tests of transmission to Darien the engineer of the American Telephone and Telegraph Company stationed at Darien had at least one of the Navy men with him as a witness, in order that his reports might be corroborated officially.

The transmission to Darien was very clear, and frequently the voice from the receiver



could be heard at a distance of 25 feet from the instrument. The representative of the company could identify the voices of different ones of his colleagues at Arlington. It would be entirely practicable to connect the receiving instrument at Darien with the Canal Zone telephone system and have the message delivered to any instrument along the line. In the transmission to San Francisco, the president of the company spoke into his ordinary desk telephone in his office in New York and the sound was transmitted by long distance wire directly to the aerial transmitter at Arlington. That the wireless telephony works so satisfactorily in connection with wire systems at either end is regarded as of especial importance in making it of commercial service.

One of the sentences heard frequently at Darien was this, or its equivalent: "No, I am not shouting; I am talking in an ordinary voice."

So far in the tests the only transmission has been from Arlington, the other stations being equipped only with receiving apparatus. In the talking to San Francisco, long distance wire connection was provided for return speech, so that conversation was carried on by air in the one direction and by wire in the other. The engineer who was stationed at Darien has returned to the United States, but he left the receiver at the station and the men there occasionally catch transmissions from Arlington if they happen to listen at the right time.

In commenting on the tests, the chief engineer of the American Telephone and Telegraph Company stated that radiotelephony could never take the place of the wire telephone system, on account of the interference to which it is subject from natural and artificial causes, but he thinks it can be of tremendous assistance in communication, especially for reaching remote points not connected with wire systems.

#### Preparing to Complete Foundations for Unloader Wharf at Balboa Coaling Plant.

Additional sheet piling was driven last week in a portion of the cofferdam protecting the dry dock and unloader wharf of the coaling station at Balboa, so that excavation may be made for the outermost foundations of the unloader wharf. On account of the steep slope of the underlying rock the originally proposed site for the cofferdam was abandoned, and the fill was placed so that the cofferdam came as close as was practicable to the end of the unloader wharf site. To complete the unloader wharf it is necessary to cut away a part of the cofferdam, and the sheet piling is being driven for protection against leaks or slides which might cause inundation of the work now protected by the dam. The sheet piling is being driven by means of a steam hammer, working in 70-foot leads suspended from a long boom on a locomotive crane.

#### Special Train Service for Three Weeks.

For the three weeks beginning October 12 the Panama Railroad is providing special train service for the benefit of residents along the line who may desire to attend the performances of the opera company now playing at the National Theatre in Panama. The service provides no extra trains, but on the Las Cascadas branch, train No. 42, ordinarily leaving Panama at 10.40 p. m., will be set back two hours on Tuesday, Wednesday, Thursday, and Sunday nights leaving at 12.40 a. m.; and on the main line, train No.

10, Saturdays only, ordinarily leaving Panama at 11.30 p. m., will be set back half an hour, leaving at 12 midnight. Bulletins concerning these changes have been posted at all stations.

#### Insufficiently Addressed Mail.

A considerable amount of mail is received in the Canal Zone addressed simply "Panama Canal" or "Canal Zone" without the name of the post-office. This makes it necessary to advertise such mail in THE CANAL RECORD

and consequently delivery is delayed. A considerable portion of the mail forwarded from the Government departments in Washington and from military posts in the United States for officers and soldiers who have been transferred to the Canal Zone is insufficiently addressed, lacking the name of the post-office.

Patrons of post-offices should advise correspondents of their definite post-office address and have their mail so directed in order to avoid delay in delivery.

### \* LABOR FORCE AND QUARTERS IN SEPTEMBER

The force report of Wednesday, September 23, shows the actual working force of The Panama Canal on that date to have been 20,501; of the Panama Railroad, 2,921; and of contractors, 339, a total effective working force of 23,761. This is a decrease of 1,663 from the force on August 25, which was 25,424; is 3,144 less than the 26,905 employed on July 21; is 3,136 less than the 26,897 employed on June 23; is 2,673 less than the 26,434 employed on May 26; and 1,054 less than the 24,815 employed on April 21. It is, however, 387 more than the 23,374 employed on March 24, and 416 more than the 23,345 employed on February 24. The force employed on January 20 was 24,853, which is 1,092 more than that employed on September 23.

The gold force on the Isthmus on September 23, composed almost exclusively of white Americans, was 3,600, an increase of four over the 3,596 employed on August 25; 21 less than the 3,621 on July 21; seven more than the 3,593 employed on June 23; 15 less than the 3,615 on May 26; and 239 more than the 3,361 employed on April 21. The gold force on September 23, numbering 3,600, was distributed as follows: The Panama Canal, 3,159; the Panama Railroad, 332; contractors, 109. Detailed figures of the employment on the Isthmus on September 23 follow:

DEPARTMENT OR DIVISION.	SILVER EMPLOYEES*												Total silver.	Total gold.	Grand total.
	Artisan.						Laborers.								
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Euro- pean 16 cents.	13 cents.	10 cents.	7 cents.	5 cents.			
Operation and Main- tenance, locks & office	469	19	3	31	148	14	3	12	63	...	...	...	762	175	937
Terminal Construct'n	390	...	65	237	597	149	31	55	339	469	1	20	2,344	281	2,625
Building Division	110	1	369	553	602	16	36	4	338	357	2	10	2,398	183	2,581
Electrical	88	4	35	51	115	69	40	...	4	496	...	...	157	563	...
Municipal Eng.	297	...	50	166	217	155	31	37	204	786	12	32	1,987	85	2,072
Dredging	1,725	1	9	31	115	64	...	1	131	39	...	...	2,120	314	2,434
Mechanical	145	7	79	122	595	624	...	15	51	163	6	8	1,815	898	2,623
Marine Division	171	...	...	...	...	...	15	...	...	1	...	...	187	56	243
Fortifications	64	...	29	64	142	15	1	...	72	88	...	1	476	83	559
General Construct'n	5	...	...	...	1	1	...	1	10	51	...	1	70	1	71
Total	3,464	32	639	1,755	2,532	1,107	114	116	1,197	2,008	21	80	12,565	2,143	14,708
Supply; main office	782	...	4	5	14	15	234	1	...	110	15	...	1,181	169	1,350
Commissary	504	...	3	2	2	8	...	...	...	...	...	...	519	24	543
Quartermaster	803	50	70	70	70	...	15	10	237	760	...	4	2,040	80	2,120
Accounting	23	...	...	...	...	...	...	...	...	...	...	...	23	203	226
Health	371	3	2	4	16	...	3	...	29	391	10	19	850	169	1,019
Executive	112	1	1	1	...	...	...	...	...	...	...	...	114	357	471
Panama Railroad	317	80	42	163	325	112	449	2	631	443	7	13	2,589	332	2,921
Contractors	40	2	4	36	11	...	108	...	19	5	...	...	230	109	339
Grand total	6,416	168	765	1,536	2,971	1,242	925	144	2,103	3,717	53	121	20,161	3,600	23,761
Month previous	6,349	202	781	1,572	2,987	1,910	1,787	202	2,019	3,851	41	127	21,828	3,596	25,424
Changes	+67	-34	-16	-36	-16	-668	-862	-58	+84	-134	12	-6	-1,667	+4	-1,663

\*The wages are stated in United States currency.

#### QUARTERS.

A summary of the occupation of Government quarters on the Isthmus on September 30, 1915, is given below:

PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa	892	245	237	142	8	15	1,463	480	636
Ancon	959	420	358	...	...	...	230	18	...
Corozal	109	80	70	2	...	...	195	33	51
Pedro Miguel	217	112	142	9	...	...	237	38	47
Paraiso	305	79	92	98	6	18	379	108	154
Cablebra	16	9	12	3	2	7	459	282	331
Gatun	23	2	5	...	...	...	168	19	34
Gambou	231	172	224	20	3	5	310	162	122
Cristobal	1,017	347	407	84	...	...	1,526	184	385
Total	3,769	1,466	1,547	358	20	47	4,952	1,324	1,760

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 15 Asiatics. (3) Includes 17 American negroes, 68 Colombians and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores. (5) Includes 30 Panamanians. (6) Includes Empire, Las Cascadas, and Bus Oisop. (7) Includes 14 Panamanians. (8) Includes Colon Beach and Colon Hospital. (9) Includes 20 East Indians, 14 colored American citizens, and 148 Panamanians.



## INCREASED ACTIVITIES.

## Meeting of Extraordinary Traffic Situation by Canal Facilities.

The obstruction in the Canal, shutting off normal traffic and tying up numbers of vessels at the terminals, has caused a heavy increase in the demand for food supplies, has upset the normal conditions of supplying coal, and has placed an unusual burden of traffic on the Panama Railroad.

With respect to the food supply for the vessels waiting at the Canal, and for those which took supplies and left in preference to staying until the Canal is opened, there has been no difficulty in furnishing plenty of standard groceries, beef, and the staple vegetables handled in cold storage. A full 30 days' supply of these is always kept on hand and there has been no difficulty in increasing the orders in the United States in time to keep the local supply well ahead of the demand. The recently established abattoir at Cristobal affords means of slaughtering plenty of native cattle to meet the increased requirements for beef if there should be any hiatus in the movement of cold storage beef from the United States. The principal difficulty the commissary branch of the Supply Department has to contend with, excepting a shortage of ice, is that of maintaining a sufficient supply of the more perishable cold storage goods.

As soon as it became apparent that the Canal traffic would be tied up for a considerable time, supplementary orders were despatched by cable for increased shipments of the perishable cold storage goods. On account of the perishability it is possible to keep on hand only an eight or nine days' supply of such goods. And on account of the frequent troubles encountered by the purchasing agent in New York in filling the regular orders, it is customary to send the ordinary cold storage requisition, for goods to go forward on a designated steamer, approximately two weeks before the date of sailing, which is to say about three weeks before the goods will arrive on the Isthmus. The markets in New York usually have on hand enough for supplying the needs of the city about a day and a half or two days, so a sudden demand for large quantities can not be sure of supply. The Panama Railroad boats sail from New York on Thursdays. If a supplementary order of any size is to be shipped on a designated vessel it must be in the hands of the purchasing agent at least by Monday morning, and even then it is likely that not all of the items can be secured.

So far the commissary branch has been able to meet the demand for cold storage supplies. Extra quantities have been coming on every vessel since September 30, and increased orders have been placed in advance for all the Panama Railroad sailings in the near future. The quantity of goods needed is in excess of the cold storage carrying spaces of the ships, and the *Panama*, which arrived at Cristobal on October 13, brought a considerable quantity of perishable products in unrefrigerated compartments. The *Advance*, due to sail from New York on October 28, has 4,000 cubic feet of refrigerating space, and the cold storage goods ordered to be shipped on her will occupy about 14,000 cubic feet. It is probable that a large part of this shipment will be sent in a vessel of the United Fruit Company. This line has a sailing from New York every Wednesday.

The increased demand for ice has not been met with entire satisfaction. Even before the congestion the supply from the Canal plants was not sufficient for all the demands on it and supplementary purchases were made in Panama. These have been continued and the Canal plant is being pushed beyond its normal capacity. Every ship which applies receives some ice; perhaps about a third or one-half of the quantity desired, but enough to obviate great inconvenience. A new plant is under construction at Balboa.

The bakery has met the greater demands without any difficulty.

## COAL.

The tying-up of traffic with more vessels at the Pacific end than at the Atlantic, and the need of those leaving from the Pacific side of heavy bunkering for a long lap on the voyage, have reversed the ordinary conditions in supplying coal at the Canal. On account of the price being \$1 less per ton at Colon than at Balboa, the agency at Colon usually sells from five to six times as much coal as that at Balboa, the aggregate bunkering sales being about 30,000 tons a month in normal times. But during October, up to the morning of the 13th, the sales at Colon had amounted to 10,300 tons and those at Balboa to 14,000 tons. About 1,500 tons of coal are shipped from the stock pile at Mount Hope to Balboa every day. This adds to the traffic on the Panama Railroad, already burdened with transfer cargo, and makes delivery difficult at Balboa, where the temporary facilities provided during the erection of the permanent coaling station were designed for much lighter service. Every lighter and barge that is available has been put into service, and several lighters have been borrowed from the Pacific Steam Navigation Company.

The coal on hand at the stock pile in the morning of Monday, October 18, amounted to 66,564 tons, over a month's supply for shipping and for the local needs on the Isthmus. The Canal colliers *Achilles* and *Ulysses* and the Panama Railroad steamship *Ancon* deliver about 45,000 tons of coal on the Isthmus each month, and additional shipments are made by vessels of the Earn Line. There is no prospect of any shortage of coal.

## OIL.

Fuel oil supplies have not been equal

to the demand but no ships have been delayed in consequence. The tie-up of traffic caused a demand for oil in excess of the quantity available on the Isthmus but it has been possible to give every ship enough to travel to another port where oil is obtainable. The Union Oil Company is expecting a consignment of 42,000 barrels on October 24, and a shipment of about the same quantity is due to arrive on October 25 for the Panama Agencies Company, and on the same day The Panama Canal is to receive 60,000 barrels. The supply on the Pacific side will then be ample. On the Atlantic side the Huasteca Oil Company has furnished 20,000 barrels to the American-Hawaiian Line and 5,000 barrels to Grace and Company, sufficient to allow the vessels to go on their way. The Panama Canal is arranging for a cargo of oil for the Atlantic terminal tanks and it is expected to be on hand by the middle of November.

Diesel engine oil was required by two ships at the Atlantic end. In order to supply them The Panama Canal has been hauling the oil across the Isthmus from the supply of the Union Oil Company at Balboa. The oil is carried in the tenders of locomotives.

## CARGO.

The transferring of cargo by rail between the terminals, originally the principal work of the Panama Railroad but practically discontinued since November 17, 1914, when the railroad ceased to be a cocarrier on account of the opening of the Canal, has caused a revival of traffic such as existed in the old days. Between October 1 and October 18, the Panama Railroad carried 22,686 tons of transfer cargo from the Atlantic terminals to Balboa, for shipment to Pacific ports, and about 25,754 tons from Balboa to the terminals at Colon and Cristobal, for Atlantic ports. This is in addition to about 10,000 tons of local cargo.

Including coal shipments, the Panama Railroad is now handling between 4,000 and 5,000 tons of transisthmian freight per day. Two extra freight crews have been put on, making seven now working in chaingang, or rounds, first in, first out, on the through freight traffic. A run across the Isthmus requires about two hours and a half.

## Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Coleman, Alfred	90363	Jamaica	Colon	P. R. R.	Oct. 5, 1915.
Denis, Octavio	86136	Jamaica	Colon	P. R. R.	Oct. 3, 1915.
Moore, Glaston, alias Jim Murphy	64676	Barbados	Pedro Miguel	Supply Dept.	Oct. 1, 1915.
Weeks, Evans	102,136	Barbados	Colon	Term. Cons. Div.	Oct. 1, 1915.
Loes, John	44084	Barbados	Gatun	Supply Dept.	Oct. 6, 1915.
Walters, Aubrey	95845	Jamaica	Colon	P. R. R.	Oct. 4, 1915.
Avety, Alfred B.	4015	U. S. A.	Cristobal	Supply Dept.	Oct. 11, 1915.
Bennett, Wm.	34093	Jamaica	Gatun	O. & M.	Oct. 6, 1915.
Dawes, Wm.	90199	Jamaica	Colon	P. R. R.	Oct. 11, 1915.
Daley, Daniel	89368	Jamaica	Colon	P. R. R.	Oct. 8, 1915.
Greenidge, George	52948	Barbados	La Boca	Fortifications	Oct. 13, 1915.
Osten, John	6742	U. S. A.	Pedro Miguel	O. & M.	Oct. 14, 1915.
Richard, Alexander	90957	Jamaica	Colon	P. R. R.	Oct. 12, 1915.
Warto, James N.	110745	Barbados	Colpa	P. R. R.	Oct. 17, 1915.

The estates of the abovementioned deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 329, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## SUN VALVES ON GAS LIGHTS.

Five Installations on Canal Aids to Navigation Are Giving Satisfaction.

The new light marking the outer end of the West Breakwater in Limon Bay is the fifth of the aids to navigation connected with the Canal to be equipped with a sun valve. The sun valve, acting on the principle of the thermostat, causes the shutting off of the supply of gas by the expansion of a cylinder following the appearance of daylight. Conversely, as daylight fails the cooling cylinder contracts and opens a valve which allows a flow of gas to the burner. A small auxiliary flame, supplied through a separate connection from the gas tank and called the "pilot flame," burns all the time and causes ignition at the main burner when the sun valve opens, and after each period of darkness if the light is a flashing light, as are all of the gas lights of the Canal except one at Cristobal.

The five lights now using the sun valve are the recently established aids at Cape Mala, on Bona Island, and on Taboguilla Island, a beacon at Balboa, and the West Breakwater light. All of these are recent installations, made since the satisfactory conclusion of a test running all through the month of June, 1915, on a sun valve constructed with especial reference to the atmospheric conditions at the Canal. The first sun valves sent to the Isthmus were so affected by the climate as not to operate satisfactorily. Their troubles were studied and as a result the manufacturers produced a new valve, using in some of its essential parts the new monel metal, a combination of copper and steel only slightly subject to corrosion by the moisture in the air. The valve was set up at the lighthouse station at Gatun and its workings were observed carefully. This is the record, by days, of its opening and closing and of the time saved by it each day:

	Closed a. m.	Opened p. m.	Closed hrs. mins.	Time hrs. mins.
June 1.....	6.44	6.33	11	49
June 2.....	6.57	6.28	11	31
June 3.....	6.46	6.25	11	39
June 4.....	7.10	6.19	11	9
June 5.....	6.38	6.28	11	40
June 6.....	6.40	6.31	11	51
June 7.....	7.03	6.35	11	32
June 8.....	7.14	5.00	9	46
June 9.....	6.47	6.08	11	21
June 10.....	7.36	6.07	10	31
June 11.....	6.38	6.10	11	32
June 12.....	7.05	6.23	11	18
June 13.....	6.41	6.27	11	46
June 14.....	6.34	6.24	11	50
June 15.....	6.38	6.23	11	45
June 16.....	7.08	6.32	11	24
June 17.....	6.34	6.29	11	55
June 18.....	6.41	6.34	11	53
June 19.....	6.43	6.31	11	48
June 20.....	6.47	6.38	11	51
June 21.....	7.52	6.33	10	41
June 22.....	7.09	6.51	11	22
June 23.....	6.53	6.28	11	35
June 24.....	6.47	6.34	11	47
June 25.....	7.36	6.44	11	8
June 26.....	7.08	6.39	11	31
June 27.....	7.03	5.58	10	55
June 28.....	7.06	4.34	9	28
June 29.....	6.53	6.38	11	45
June 30.....	6.47	5.05	10	18

The aggregate saving in the month, or time when the light was not burning on account of the sun valve, was 340 hours and 22 minutes. This is equivalent to 14.18 days, or slightly over 47 per cent of the entire month. Considering the consumption of gas by the small pilot flame, which burns continuously to keep a spark for the main burner, it has been accepted as the rule in the lighthouse section that the sun valve saves 45 per cent of the gas used by a similar light not equipped with a sun valve.

The saving of gas at the West Breakwater light is typical. This is a single-burner, first order light, having a lens 500 millimeters or 19.7 inches in diameter, developing 1,010 candlepower of white light and rated at 300 candlepower through the red shade. It uses 141 cubic feet of gas per hour of actual burning. It is a flashing light, alternating one second of light with four seconds of darkness. It flashes 12 times in a minute, which is to say it is burning 12 seconds in a minute, or one-fifth of the time. In 24 hours it would burn 288 minutes. Being shut off, however, for 45 per cent of the time by the sun valve, the light actually burns during 55 per cent of the 288 minutes. This is 158.4 minutes, or two hours 38½ minutes of the 24. At 141 cubic feet of gas per hour, the daily consumption is 3.3 cubic feet. The gas costs anywhere from 1.6 cents to three cents per cubic foot, produced at the oxyacetylene plant at Balboa shops. At 2.3 cents, it makes the consumption of the West Breakwater light come to about 7.6 cents per 24 hours, or about \$2.28 per month. On the same basis of calculation, the sun valve saves \$1.86 per month on the West Breakwater light.

As the sun valves cost \$135 each, they have been installed only on the larger lights. The buoys along the Canal burn three-eighths of a cubic foot of gas an hour, and are light about one-third of the time, so that the consumption of each is approximately three cubic feet of gas in 24 hours. It has been estimated that sun valves would not effect sufficient saving on these aids to justify their installation.

## Comparisons of Emigration and Immigration, and of Quarantine Examinations by Months.

Immigration to the Isthmus from foreign ports during the month of September exceeded emigration to foreign ports by 172 persons, according to the count kept by the quarantine authorities of the ports of Balboa-Panama and Cristobal-Colon. This makes the net emigration since July 1, 1913, a period of two years and three months, amount to 26,722. This is at the rate of 989.7 per month, or 32.5 per day. During approximately the same period the Canal force diminished from 42,262 on June 25, 1913, to 23,761 on September 23, 1915, a decrease of 18,501, which is at the rate of 685.2 per month, or 22.6 per day.

The total number of passengers and crews examined at the ports during September was 18,120, which was less than the numbers in August, July, and March, but greater than the numbers in any other month since the first of the year. A comparison with preceding months since the beginning of this year is afforded by this tabulation:

	Passengers.	Crews.	Total.
January.....	3,887	10,232	14,119
February.....	4,300	9,332	13,632
March.....	6,014	12,155	18,169
April.....	3,605	11,032	14,637
May.....	5,391	11,772	17,163
June.....	4,969	12,756	17,725
July.....	4,974	14,136	19,110
August.....	4,900	14,814	19,714
September.....	4,606	13,514	18,120
Total.....	42,646	109,743	152,389

The examination of 152,389 persons in the period is at the rate of 16,932 per month, or 558.2 per day.

A summary of the quarantine activities on the Isthmus during September is given in this consolidated report for the ports of Balboa-Panama and Cristobal-Colon:

Number of vessels inspected and passed	226
Number of vessels held in quarantine.....	8
Total.....	234
Supplementary inspections of vessels detained.....	5
Number of vessels fumigated on arrival	5
Number of vessels fumigated on departure.....	0
Total.....	5
Number of crew examined.....	18,314
Number of passengers examined.....	4,606
Total.....	18,120
Number of supplementary inspections.....	747
Number of persons vaccinated at ports of arrival because of compulsory vaccination law.....	616
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law.....	742
Total.....	1,358
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and plague.....	354
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague.....	1,264
Total.....	1,618
Number of persons landed from foreign ports:	
Cabin.....	2,131
Steerage.....	1,362
Total.....	3,493
Number of persons embarked for foreign ports:	
Cabin.....	1,870
Steerage.....	1,451
Total.....	3,321
Number of persons arriving from coast towns on small launches and sailing craft.....	1,698
Number of persons sailing for coast towns on small launches and sailing craft.....	1,433
Apparent increase for month from coast towns.....	265
Apparent increase for month from foreign ports:	
Cabin (increase).....	261
Steerage (decrease).....	89
Total.....	172
Number of immigrants recommended for deportation.....	12
Number of bills of health issued or viséd.....	166
Number of inspections of docks.....	97
Number of inspections of vessels at docks.....	68
Number of persons landed.....	5,191
Less number for Pacific ports.....	198
Total.....	4,993
Total number of persons sailing.....	4,734
Total apparent increase for month.....	239

The immigration report for Colon, which is the port receiving the majority of passengers, classifies the immigrants during September by places of origin, as follows:

	Cabin	Steerage
From		
Europe.....	31	16
United States.....	796	50
Jamaica and West Indies.....	99	314
Venezuela.....	10	4
Colombia.....	110	179
Cuba.....	37	18
Costa Rica.....	119	32
Bocas del Toro.....	59	255
Coast towns.....	216	
Total.....	1,261	1,084

Grand total..... 2,345  
Of the 2,345, the men numbered 1,196; women, 623; children, 310; and 216 were not classified.

## Obituary.

Alfred B. Avery, an employee of the Supply Department, living at Cristobal, died in Ancon Hospital on October 11. He was born in the United States in 1840, and served in the army of the Confederacy during the Civil War.

John Osten, a towing locomotive operator employed at Pedro Miguel Lock, was killed on October 14, by the breaking of a cable near which he was at work. He was born in Germany and was a naturalized citizen of the United States, living in Trenton, N. J., before coming to the Isthmus.



## OFFICIAL CIRCULARS.

## Cars for Coal.

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., October 16, 1915.

## CIRCULAR No. 163:

To all concerned—During the next few weeks, in our present rush for supplying coal, we are naturally going to experience difficulty in having available a sufficient number of cars for this handling, and owing to the fact that certain orders for coal require center dumps, others flat bottom cars and others Western dump cars, it is respectfully solicited that whenever coal can be handled from cars other than Western dumps, it be so ordered, and that all Western dump cars which can be made available for coal service be sent to our coal handling plant at Cristobal.

C. H. MOTSETT,  
Superintendent.

## Hand and Push Cars.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., October 5, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

The general storekeeper at Balboa advises that the stock of hand and push cars on hand for issue is getting low, and it is thought that some departments and divisions may have some bad order cars which can be released. If such is the case, it is requested that same be turned in to be repaired by the Mechanical Division and returned to stock at the Balboa storehouse as provided in paragraph 16 of circular No. 656-1.

WM. R. GROVE,  
Chief Quartermaster.

## Corozal Hospital.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., September 15, 1915.  
CIRCULAR No. 625-2 (superceding circulars Nos. 625 and 625-1):

1. The Hospital Farm at Corozal and the Corozal Hospital for the insane are hereby consolidated, and will hereafter be operated under the name of "Corozal Hospital."

2. The physician in charge of the insane shall be the executive officer of Corozal Hospital with title of "Superintendent," and is hereby vested with the authority and duties heretofore delegated both to the physician in charge of the insane and to the superintendent of Corozal Farm.

3. The title of the superintendent of Corozal Farm is hereby changed to "Farm Manager, Corozal Hospital."

4. The Farm Advisory Board is hereby discontinued and the Chief Health Officer is designated to act upon such matters as were formerly referred to that board.

5. Deportation of the physically disabled will be handled by the Superintendent of Ancon Hospital, subject to the approval of the Chief Health Officer and the Governor.

6. The hospital shall be divided into the following departments:

(1) Insane department, (2) Farm department.

## INSANE DEPARTMENT.

## Duties of Superintendent.

7. He shall employ and discharge all silver employees and shall assign duties to employees.

8. He shall govern the department as provided in the rules and regulations of Ancon Hospital.

## Personnel.

9. Personnel charged with the care of the insane will be governed by the rules and regulations of Ancon Hospital except insofar as they conflict with the special rules for the insane department.

## Patients.

10. The movement of the insane from the Canal Zone will be handled in accordance with the provisions of the Executive Order of May 10, 1911. The insane from the Republic of Panama will be handled in the manner directed by the Secretary of Foreign Relations under date of August 23, 1911.

## FARM DEPARTMENT.

## Duties of Superintendent.

11. He shall plan the work and layout of the farm, subject to the approval of the Chief Health Officer.

12. He shall superintend the execution of all farm projects, as also the sale of products.

13. The government of all employees, under such rules as may be approved by the Governor, shall be in his hands.

14. He shall grade and classify laborers according to their respective classes and earning power.

15. He shall look after the health of all employees.

## Duties of Farm Manager.

16. The farm manager shall be the immediate representative of the Superintendent and is charged with all outside work of the hospital.

17. He shall have charge of the care and maintenance of the buildings and grounds, dairy, poultry yard, pigery, garden, and cemetery.

18. He shall direct the work of the disabled employees, explaining it to them and seeing that it is properly executed.

19. He shall promptly report to the superintendent any irregularities occurring in connection with the work under his supervision.

## Conditions of Employment.

20. Only men permanently disabled through injury in line of duty with the Isthmian Canal Commission, the Panama Railroad Company, the Panama Canal, or in service connected with the construction of the Canal, shall be employed for farm work, except such supervisory force as may be necessary.

21. To receive employment, application must be made to the Governor. The Panama Canal, on the form provided for that purpose. When the application is approved, the applicant shall be given employment.

22. Eight hours shall constitute a day's work.

23. The rates of pay for hourly men shall be three, five, and seven cents gold per hour to colored laborers, five, seven and 10 cents per hour to European laborers, and \$15, \$17.50, \$20, and \$25 for monthly men (foremen, messengers, day men, clerks, etc.).

24. All employees shall work at least two weeks at the lowest rates of their respective classes and shall show they can earn a higher rate before being given higher pay.

25. All employees shall be furnished bachelor quarters. Married quarters, when available, shall be furnished those employees found by the superintendent to be most desirable.

26. All employees shall be furnished subsistence similar to that served the attendants of the insane department but it shall be allowed only when the employees are on duty or are sick with a physician's certificate covering the period of their sickness. Subsistence shall be allowed for Sundays and holidays, providing the employees shall have worked the day preceding and the day following, or provided absence on one day was due to illness covered by physician's certificate.

27. Employees having families dependent upon them and living with them at Corozal shall be allowed commutation of subsistence at the rate of 27 cents gold per day for colored men and 40 cents gold per day for white men for each day they are on duty or sick with a doctor's certificate covering the period of their sickness, and shall be allowed the same commutation for Sundays and holidays, providing they shall have worked the day preceding and the day following, or providing absence on these days was due to their illness.

28. Employees of the farm department living with their families at Corozal may purchase products of the farm for use of themselves and families at the prices paid to the farm by the Supply Department for the same products.

29. Employees working 160 or more hours during the month shall be paid \$1 for each such month with which to purchase clothes or pay for laundry.

30. Employees having families at places on the Isthmus other than Corozal shall upon request, be furnished with a round trip pass on the Panama Railroad not often than once in any month for the purpose of visiting such family.

31. Employees shall be free to come and go as they please outside of regular working hours.

32. Leave of absence without pay for any length of time may be granted by the superintendent upon the approval of the Chief Health Officer.

33. Employees may be disciplined by the superintendent for any of the following causes:

(a) Failure to perform their allotted tasks.

(b) Insubordination.

(c) Continued and unexcused absence from farm.

(d) Loitering, profane and obscene language, or other disorderly conduct about or in the buildings and grounds.

(e) Failure to take proper care of farm property.

34. For continued repetitions of any of the foregoing offenses, the superintendent shall discharge the offender and any employee once so dismissed shall be barred from future employment at the farm.

CHESTER HARDING,  
Acting Governor.

## Sales of Material.—Surcharges.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., September 27, 1915.  
CIRCULAR No. 630-5:

1. Effective at once, the surcharge of 15 per cent authorized by circular No. 630-3, dated January 4, 1915, on sales of material to those entitled to cost prices as defined by circular No. 659-1, dated August 1, 1915, is reduced to 10 per cent.

2. This surcharge applies to material and supplies sold to other branches of the United States Government, employees for their personal use, charitable and religious institutions, and social and fraternal organizations of employees.

CHESTER HARDING,  
Acting Governor

## Acting Chief Clerk of Mechanical Division.

THE PANAMA CANAL,  
MECHANICAL DIVISION,  
BALBOA, C. Z., September 28, 1915.

To all concerned—During the absence of Mr. F. G. Swanson on leave, effective October 1, 1915, Mr. R. H. Adams will act as chief clerk and perform duties incident to such position in the Mechanical Division.

J. J. EASON,  
Assistant Superintendent.  
Approved:  
D. C. NUTTING,  
Superintendent, Mechanical Division.

## JOINT LAND COMMISSION.

## Notice of Award.

In the matter of the claim of John J. Gibbons for property designated as Guayabal, award No. 95, docket No. 1365, September 11, 1915.—At a hearing in February and March, 1915, of the claim of Narciso Garay, attorney-in-fact for the Hurtado family, for property designated as Cardenas y La Ramona, it developed that the claim of John J. Gibbons, docket No. 1365, for the property designated as Guayabal, conflicted with the said claim of the Hurtado family, docket No. 295, as to the following described tract:

"Starting from the point where the Cruces road crosses the Cardenas river and then following the Cruces road in a general westerly direction as far as the point where it crosses the Dominica creek, and thence downstream as far as the point where it crosses a certain straight imaginary line drawn from the point of beginning to the top of Dominica Hill, and thence from the said point of intersection in a general southeasterly direction in a straight line to the starting point."

During the course of the hearing an agreement was reached by Narciso Garay, attorney-in-fact for the Hurtado family, claimants for the said Cardenas and La Ramona tract, and Daniel Ballén, attorney-in-fact for said John J. Gibbons, claimant for said Guayabal tract, that the area of said disputed tract above described be ascertained by the Commission and divided equally between the two parties, the Hurtado family and John J. Gibbons. By consent of all the parties, the Commission designated B. C. Alexander, civil engineer in the employ of the Panama Canal, to determine the area of the tract of land described above, who later reported to the Commission that it contains 108.50 hectares.

In award No. 82 of May 3, 1915, to the Hurtado family, claim docket No. 295, there was deducted therefrom, of the tract above described, the 54.25 hectares ceded by the Hurtado family to John J. Gibbons in accordance with the agreement above referred to, and said award stated that damages for said 54.25 hectares would be awarded to claimant Gibbons when his claim, docket No. 1365, for the lands of Guayabal came on for hearing in regular order.

On June 23, 1915, a communication was received from Daniel Ballén, attorney-in-fact for said John J. Gibbons, requesting that an award be made by the Commission for the said 54.25 hectares, being claimant Gibbons' half interest in the tract above described. Copy of such request was sent to counsel for the United States on June 26, and thereafter, on August 20, the Commission called this request to the attention of counsel for the United States, Hon. Frank Feuille, who agreed that an award for said 54.25 hectares, the property of claimant Gibbons, could be made, stating that such agreement is made without prejudicing the interests of the United States in the Guayabal tract.

An award is hereby made against the United States in favor of John J. Gibbons in the sum of \$3,255 United States currency, for all rights, title, and interest of the said John J. Gibbons in and to the half of the above described tract, said interest consisting of 54.25 hectares more or less, and any provision of said award No. 82 of May 3, 1915, in conflict with this award is hereby annulled.

This award shall be paid to the said John J. Gibbons in the amount specified on or before the 11th day of October, 1915, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.



## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective October 21 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions which will be effective October 21, 1915.

The prices are fixed by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts.

## FRESH BEEF.

	Price.
Beef, suet, special, per lb.	\$ 0.33
Beef suet, native, per lb.	0.31
Soup beef, special, per lb.	0.07
Soup beef, native, per lb.	0.05
Soup bone, special, per lb.	0.02
Soup bone, native, per lb.	0.01
Stew beef, special, per lb.	0.11
Stew beef, native, per lb.	0.08
Plate beef, special, per lb.	0.12
Chuck roast (3 lbs. up), special, per lb.	0.08
Chuck roast (3 lbs. up), native, per lb.	0.08
Rib roast, 2d cut (3 lbs. up) special, per lb.	0.16
Rib roast, 2d cut (3 lbs. up), native, per lb.	0.13
Rib roast, 1st cut (3 lbs. up), special, per lb.	0.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	0.11
Pot roast, special, per lb.	0.20
Pot roast, native, per lb.	0.12
Rump roast, special, per lb.	0.20
Rump roast, native, per lb.	0.12
Porterhouse roast, choice, per lb.	0.31
Porterhouse roast, special, per lb.	0.22
Porterhouse roast, native, per lb.	0.16
Chuck steak, special, per lb.	0.13
Chuck steak, native, per lb.	0.09
Round steak, bottom, special, per lb.	0.13
Round steak, bottom, native, per lb.	0.09
Round steak, top, special, per lb.	0.15
Round steak, top, native, per lb.	0.10
Sirloin steak, special, per lb.	0.20
Sirloin steak, native, per lb.	0.12
Sirloin steak, choice cut, special, per lb.	0.23
Sirloin steak, choice cut, native, per lb.	0.16
Rump steak, special, per lb.	0.12
Rump steak, native, per lb.	0.12
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	0.34
Porterhouse steak (1 1/2 lbs. up), native, per lb.	0.23
Porterhouse steak, native, per lb.	0.17
Porterhouse steak, short, special, per lb.	0.20
Porterhouse steak, short, native, per lb.	0.12
Tenderloin steak, special, per lb.	0.35
Tenderloin steak, native, per lb.	0.25

## FRESH MEATS.

Lamb chops, per lb.	0.29
Lamb chops, shoulder, per lb.	0.20
Lamb, legs, 5 to 8 lbs., per lb.	0.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	0.15
Lamb, stewing, per lb.	0.12
Mutton chops, short cut, per lb.	0.23
Mutton chops, shoulder, per lb.	0.17
Mutton, leg, 8 to 10 lbs., per lb.	0.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	0.12
Mutton, stewing, per lb.	0.09
Pork hams, fresh (see footnote), per lb.	0.23
Pork loins, chops, or roast, per lb.	0.18
Pork, shoulders, fresh (see footnote), per lb.	0.16
Veal chops, per lb.	0.30
Veal chops, short, per lb.	0.20
Veal cutlets, per lb.	0.36
Veal, loin for roasting, per lb.	0.30
Veal, shoulder for roasting, not under 4 lbs., per lb.	0.15
Veal, stewing, per lb.	0.12

## MISCELLANEOUS.

Brains, calves', per lb.	0.07
Calves' heads, ea.	0.78
Kidneys, beef, per lb.	0.09
Livers, beef, per lb.	0.09
Livers, calves', per lb.	0.24
Pates de foie gras, jar.	0.67
Peel, citron, per lb.	0.17
Peel, lemon, per lb.	0.17
Peel, orange, per lb.	0.15
Pigs' feet, fresh, per lb.	0.04
Pigs' head, fresh, whole, ea.	0.83
Pigs' heads, fresh, 1/2 head, half.	0.42

Sausage, bologna, per lb.	0.11
Sausage, frankfurter, per lb.	0.14
Sausage, frankfurters, imported, tin.	0.08
Sausage, liverwurst, per lb.	0.09
Sausage, pork, per lb.	0.25
Sausage, pork, homemade, per lb.	0.23
Spare ribs, pork, per lb.	0.14
Steak, hamburger, pike.	0.17
Steak, hamburger, 10-pound container, per lb.	0.14
Sweet bread, beef, per lb.	0.19
Tails, ox, per lb.	0.09
Tongue, beef, native, whole, per lb.	0.20
Veal, per lb.	0.31
Veal, cake.	0.02

## FISH.

Blotlers, per lb.	0.11
Bluefish, per lb.	0.16
Colfish, dried, per lb.	0.11
Haddock, smoked, per lb.	0.09
Halibut, fresh, per lb.	0.11
Oysters, fresh, per doz.	0.30
Salmon, fresh, per lb.	0.10
Whitefish, smoked, per lb.	0.18

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	0.30
Bacon, breakfast, sliced, per lb.	0.31
Bacon, sliced, jar.	0.28
Bacon, sliced, tin.	0.27
Bacon, squares, whole square, per lb.	0.19
Bacon, strips, whole strip.	0.20
Beef, corned—No. 1, per lb.	0.15
Beef, corned—No. 2, per lb.	0.12
Ham, genuine Westphalia, per lb.	0.50
Ham, lunch, per lb.	0.40
Ham, minced, "Bologna style", per lb.	0.13
Ham, real York and Cumberland, per lb.	0.43
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	0.14
Ham, sugar cured (whole) per lb.	0.20
Ham, sugar cured (half) per lb.	0.22
Ham, sugar cured (sliced) whole, per lb.	0.26
Ham, sugar cured, boiled (whole) per lb.	0.26
Ham, sugar cured, boiled (half) per lb.	0.24
Ham, sugar cured, boiled (sliced) per lb.	0.28
Pork, bellies, per lb.	0.08
Pork, clear, per lb.	0.12
Pork, standard meats, per lb.	0.14
Pork, corned, native, per lb.	0.20
Tongue, ox, whole, 3 to 5 lbs., per lb.	0.24
Tongue, pigs', per lb.	0.22

## POULTRY AND GAME.

Broilers, coin fed, per lb.	0.31
Broilers, milk fed, per lb.	0.34
Capon, per lb.	0.44
Chickens, fancy roasting, coin fed, per lb.	0.28
Chickens, fancy roasting, milk fed, per lb.	0.32
Ducklings, per lb.	0.24
Ducks, mallard, 2 to 2 1/2 ea.	2.35
Fowls, light, per lb.	0.23
Fowls, western, dry picked, per lb.	0.25
Geese, per lb.	0.25
Grouse, per lb.	1.00
Pheasants, ea.	1.35
Squabs, ea.	0.41
Turkeys, per lb.	0.29

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	0.39
Butter, creamery, 60-62 lb., tub, whole tub, per lb.	0.38
Butter, Sheffield farms, extra fancy, per lb.	0.58
Cheese, Edam, ea.	1.15
Cheese, Edam, tin.	0.39
Cheese, Gouda, per lb.	0.26
Cheese, Parmesan, per lb.	0.38
Cheese, Philadelphia cream, cake.	0.09
Cheese, Roquefort, per lb.	0.43
Cheese, snappy, cake.	0.09
Cheese, Swiss, per lb.	0.34
Cheese, Young America, per lb.	0.20
Cream, 30 per cent, 1 qt.	0.17
Cream, 30 per cent, 1/2 qt.	0.09
Cream, 30 per cent, qt.	0.17
Eggs, fresh, per doz.	0.40
Eggs, fresh, 1/2 doz. (only)	0.19
Eggs, fresh, 1/2 doz. (only)	0.25
Ice cream, (see footnote) qt.	0.25
Ice cream, (see footnote) 1 gal.	0.50
Milk, Sheffield farms, qt.	0.29
Olus, marine, per lb.	0.29

## VEGETABLES.

Beets, per lb.	0.02
Cabbage, per lb.	0.02
Carrots, per lb.	0.03
Cauliflower, per lb.	0.04
Celery, per head.	0.11
Cucumbers, per lb.	0.04
Egg plant, per lb.	0.04
Onions, per lb.	0.02
Parsnips, per lb.	0.02
Peas, green, per lb.	0.03
Plantains, per doz.	0.12
Potatoes, white, per lb.	0.02
Potatoes, sweet, per lb.	0.03
Squash, per lb.	0.02
Tomatoes, per lb.	0.07
Turnips, per lb.	0.01
Yams, loco, per lb.	0.03

## FRUITS.

Apples, evaporated, per lb.	0.11
Apples, fresh, per lb.	0.04
Apples, fresh, select, per lb.	0.06
Apples, evaporated, per lb.	0.12
Pineapples, 8 hands and over, per bunch.	0.48
Bananas, 6 and 7 hands, per bunch.	0.32

Bananas, ea.	0.04
Coconuts, ea.	0.04
Currants, cleaned, pkg.	0.13
Figs, dried, 12-oz pkg.	0.32
Grapes, Malaga and Tokay, per lb.	0.07
Grapefruit, select, ea.	0.09
Lemons, per doz.	0.18
Limes, per 100.	0.14
Oranges, select, ea.	0.05
Peaches, evaporated, per lb.	0.07
Peaches, fresh, per lb.	0.05
Pears, evaporated, per lb.	0.05
Pears, fresh, per lb.	0.05
Praires, stewing, per lb.	0.11
Raisins, seedless, pkg.	0.10
Raisins, seed cluster, per lb.	0.27
Tangerines, ea.	0.14

\* Indicates advance from price line list.  
 \* Indicates five cents advance for return of bottle.  
 \* Indicates reduction from preceding list.  
 † Sold only from commissaries, no orders taken for delivery.  
 ‡ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Wholesale Prices of Fresh Meats.

The following is the wholesale price list No. 206, effective June 24, 1915, and in force until further notice. This list will govern, whether meat is sold from commissaries or from cold storage. The following prices will be increased by 10 per cent in cases of sales to commercial ships and foreign naval vessels, and by 20 per cent in cases of sales to yachts:

1. Beef hind, No. 1.	per lb.	\$0.19 1/2
2. Beef hind, No. 2.	per lb.	0.15
3. Beef fore, native.	per lb.	0.09 1/2
4. Beef fore, No. 2.	per lb.	0.12
5. Beef fore, native.	per lb.	0.08 1/2
6. Beef, whole round or leg, No. 1.	per lb.	0.14 1/2
7. Beef, whole round or leg, No. 2.	per lb.	0.11
8. Beef, whole round or leg, native.	per lb.	0.07
9. Beef ribs, No. 1.	per lb.	0.18
10. Beef ribs, No. 2.	per lb.	0.16
11. Beef ribs, native.	per lb.	0.10
12. Beef, short loins, No. 1.	per lb.	0.25
13. Beef, short loins, No. 2.	per lb.	0.19
14. Beef, short loins, native.	per lb.	0.15
15. Beef, ramps, No. 1.	per lb.	0.20 1/2
16. Beef, ramps, No. 2.	per lb.	0.17
17. Beef, ramps, native.	per lb.	0.12
18. Lamb carcasses.	per lb.	0.18
19. Mutton carcasses.	per lb.	0.14 1/2
20. Pig carcasses.	per lb.	0.15 1/2
21. Pork, loin chops or roast.	per lb.	0.16 1/2
22. Veal carcasses.	per lb.	0.18
23. Veal leg.	per lb.	0.24

Indicates reduction from last list.  
 Above prices do not include cost of special trimming required by U. S. Army or U. S. Navy.  
 The prices quoted in current retail cold storage list will govern for all other items not included in above.

## Guava Jelly, 12-oz. Jar at 21 Cents.

THE PANAMA CANAL,  
 SUPPLY DEPARTMENT,  
 CRISTOBAL, C. Z., October 11, 1915.

BULLETIN No. 377:  
 To commissary managers—Addition to stock No. 1171 included above item. Retail grocery price list No. 1 carries a small jar at 18 cents, the latter being a 64-oz. jar.

Inventory your stock and if you have on hand any of the 12-oz. jars, charged at 18 cents, take debit adjustment.

When placing future orders for guava jelly, be particular to specify size jar desired.

F. H. SMITH,  
 Acting Depot Commissary.

## Shelled Almonds and Walnut Meat.

THE PANAMA CANAL,  
 SUPPLY DEPARTMENT,  
 CRISTOBAL, C. Z., October 11, 1915.

BULLETIN No. 378.  
 To commissary managers—You were instructed in bulletin No. 365 to transfer the above two items from cold storage to grocery department as of Thursday, October 7. In transferring same, you should have taken credit adjustment for the difference between the cold storage price and price shown in retail grocery list No. 2.

If adjustment were not taken, attend to it at once, correcting price of shelled almonds from 52 cents to 47 cents per pound and walnut meat from 29 cents to 26 cents per jar, referring to price authority No. 1311.

F. H. SMITH,  
 Acting Depot Commissary.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective October 16:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Cup hooks, doz.	\$0.05	\$0.07
Fibre saucers, ea.	.30	.18
Pickers, agate, ea.	.75	.45
Glasses, measuring, ea.	.09	.11
Lamps, Juno, ea.	1.75	1.95
Men's shoes, pr.	3.55	3.70
Men's shoes, pr.	3.85	4.35
Cream, dental, tube.	.16	.18
Tooth paste, tube.	.21	.40
Cologne, headache, bot.	.64	.67
Hammocks, ea.	3.00	3.35
Cloths, tea, ea.	2.18	2.25
Blankets, ea.	1.85	1.70
Diaper cloth, piece.	.75	.71
Tie measures, ea.	.09	.13
Dress forms, ea.	11.80	8.70
Hooks, button, ea.	.03	.04
Boots, men's, ea.	.50	.55
Undershirts, ea.	.47	.47
Drawers, men's, pr.	.47	.37
Drawers, men's, pr.	.36	.28
Nets, hair, ea.	.15	.09
Shoeing, linen, yd.	1.05	1.20
Lawn, yd.	.12	.12
Blouses, midly, ea.	1.45	1.30
Blouses, midly, ea.	1.25	1.30
Thread, linen, spool.	.09	.11
Pins, safety, No. 2, card.	.014	.04
Pins, safety, No. 2, card.	.02	.04
Pins, safety, No. 2, card.	.02	.05
Pins, safety, No. 3, card.	.04	.06
Umbrellas, ea.	.78	.68
Hats, straw, ea.	2.35	2.20
Bath robes, ea.	5.30	5.10
Bath robes, ea.	2.70	2.95
Boxes, sugar, ea.	.67	.32
Knives, floor, ea.	.91	.87
Carriages, baby, ea.	9.25	8.75
Glasses, sherbet, ea.	14	16
Glasses, sherry, ea.	.60	.60
Knives, pocket, ea.	1.35	.60
Mattresses, double, ea.	5.25	4.70
Polish, furniture, bot.	.11	.16
Pots, watering, ea.	.52	.47
Brusel, plate, ea.	.05	.08
Trowels, garden, ea.	.11	.23
Tubs, wash, ea.	.68	.53
Tubs, wash, ea.	.88	.67
Tubs, wash, ea.	.78	.78
Trunks, box, doz.	6.45	6.15
Toffee, Corona, tin.	.05	.02
Pots, tea, 3-quart (in good condition).	.45	.33
Pots, tea, 3-quart, if damaged, ea.	.45	.25
Men's hose, black with white sole, sizes 10 and 10 1/2, box (1 doz.)	1.25	
Men's hose, black with white sole, sizes 10 and 10 1/2, pr.	.11	

## Additions to Stock.

Guava jelly, 12-oz. jar.	.21
Cigarettes, Melachino, tin.	1.05
Cream, shaving, Williams', tube.	.16
Vaseline, carbollated, bot.	.07
Crab, finishing, yd.	.03
Garters, Steinway, pr.	.17
Canisters, glass for coffee mills, ea.	.27
Lamps for 909 percolator, ea.	1.05
Knives, dessert, Grecian, ea.	.62
Spoons, tea, Grecian, ea.	.21
Cups and saucers, after dinner, 6262, Minton, ea.	1.65
Plates, breakfast, 6162, Minton, ea.	1.85
Biscuits, Educator wafers, tin.	.24
Piedmont cigarettes, box.	.04
Brushes, tooth, prophylactic, children's, ea.	.14
Voile, kahul, yd.	.15
Voile, gaberdine, yd.	.21
Voile, corded, yd.	.24
Crick leg guards, pr.	3.10
Cricket keeping gloves, pr.	3.25
Cricket gloves, pr.	2.60
Cricketer's score book, ea.	1.00
Grand Prix cricket balls, ea.	1.75
Cricketer bats, No. 4, ea.	4.05
Cricketer record bats, No. 8, ea.	5.60
Stumps and balls, No. 8, ea.	2.60
Pens, fountain, Parker, No. 20, self-filling, ea.	1.80
Red snapper sauce, 6-oz. bot.	.08
Bells, call, ea.	.17

## Taboaga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p.m.; Monday, Thursday, Saturday, and Sunday, at 9.40 a.m.

Leave Taboaga—Daily, except Friday, at 7 a.m. (On Mondays and days following holidays, one hour earlier); Monday, Thursday, and Saturday, at 1.30 p.m.; Sunday at 7.15 p.m. The 9.40 a.m. trips from Balboa await the arrival of Panama Railroad trains.

There will be no 5.30 p. m. trip from Balboa on Sundays and holidays, unless the number of guests desiring transportation from Taboaga exceeds the number that the launch is able to take in one trip; in which case a trip will be started from the Aspinwall landing at 3 p. m., reaching Balboa in time to leave again at 5.30.

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions until December 1 are given in this table:

OCTOBER.		Time and height of high and low water.			
DATE.					
Wed., October 20.	1:38	7:41	14:05	20:00	
Thurs., October 21.	1:37	7:41	13:4	19:49	
	1:37	8:30	13:52	20:46	
Fri., October 22.	14:3	1:4	13:9	1:3	
	3:07	9:11	15:32	21:28	
Sat., October 23.	14:8	0:7	14:4	1:2	
	3:44	9:0	14:09	22:07	
Sun., October 24.	15:0	0:4	14:6	1:2	
	4:18	10:29	16:44	22:43	
Mon., October 25.	15:0	0:3	14:5	1:3	
	4:51	11:03	17:17	23:21	
Tues., October 26.	14:8	0:5	14:2	1:7	
	5:23	11:42	17:51	23:58	
Wed., October 27.	14:4	0:9	13:8	2:2	
	5:57	12:20	18:27	24:3	
Thurs., October 28.	14:9	1:5	13:2	2:2	
	6:38	6:32	13:00	19:04	
Fri., October 29.	2:9	13:2	2:2	12:5	
	5:13	11:17	13:34	19:17	
Sat., October 30.	3:6	12:5	3:0	11:9	
	2:08	7:53	14:34	20:39	
Sun., October 31.	4:3	11:7	3:6	11:4	
	3:05	8:49	15:32	21:43	
	4:8	11:1	4:1	11:2	

## NOVEMBER.

DATE.	Time and height of high and low water.			
Mon., Nov. 1.	4:09	10:02	16:34	22:52
	4:8	10:9	4:1	11:4
Tues., Nov. 2.	5:13	11:17	17:3	23:54
	4:4	11:1	3:8	12:1
Wed., Nov. 3.	6:13	12:20	18:30	
	3:6	11:8	3:1	
Thurs., Nov. 4.	0:46	7:04	13:14	19:20
	13:8	14:2	8:8	12:2
Fri., Nov. 5.	1:32	7:51	14:01	20:06
	14:2	1:2	13:8	1:3
Sat., Nov. 6.	2:20	8:36	14:47	20:51
	15:2	0:0	14:8	2:0
Sun., Nov. 7.	2:58	9:20	15:29	21:37
	16:2	-1:0	15:7	-0:2
Mon., Nov. 8.	3:43	10:04	16:13	22:23
	16:9	-1:6	16:2	-0:5
Tues., Nov. 9.	4:26	10:50	16:58	23:09
	17:1	-1:8	16:3	-0:5
Wed., Nov. 10.	5:12	11:37	17:45	23:58
	17:8	-1:5	16:0	0:0
Thurs., Nov. 11.	6:00	12:26	18:35	
	16:3	-0:9	15:4	
Fri., Nov. 12.	0:50	6:51	13:18	19:30
	0:8	15:3	0:0	14:6
Sat., Nov. 13.	1:46	7:47	14:15	20:30
	1:7	14:1	1:1	13:7
Sun., Nov. 14.	2:49	8:54	15:18	21:40
	2:8	16:10	4:2	14:0
Mon., Nov. 15.	3:59	10:10	16:24	22:55
	3:1	12:2	2:8	12:8
Tues., Nov. 16.	5:10	11:31	17:33	
	3:3	11:9	3:1	
Wed., Nov. 17.	0:07	6:16	12:43	18:37
	12:9	3:0	12:1	3:1
Thurs., Nov. 18.	1:08	7:14	13:42	19:32
	1:3	2:5	12:6	2:9
Fri., Nov. 19.	1:58	8:03	14:30	20:18
	1:5	2:0	13:1	2:6
Sat., Nov. 20.	2:40	8:47	15:11	21:01
	1:9	3:5	13:3	2:1
Sun., Nov. 21.	3:18	9:26	15:48	21:43
	14:1	1:1	13:7	2:1
Mon., Nov. 22.	3:54	10:05	16:24	22:21
	14:2	0:9	12:9	2:1
Tues., Nov. 23.	4:28	10:42	16:58	22:59
	14:2	0:9	13:8	2:2
Wed., Nov. 24.	5:02	11:20	17:32	23:37
	14:1	1:0	13:7	2:4
Thurs., Nov. 25.	5:36	11:59	18:03	
	13:8	1:4	13:4	
Fri., Nov. 26.	0:18	6:12	12:38	18:46
	1:8	13:4	1:8	13:0
Sat., Nov. 27.	0:58	6:49	13:19	19:26
	3:2	12:9	2:3	12:7
Sun., Nov. 28.	1:44	7:30	14:04	20:08
	3:6	12:3	2:8	12:4
Mon., Nov. 29.	2:32	8:17	14:52	20:57
	3:9	11:8	3:3	12:2
Tues., Nov. 30.	3:28	9:15	15:46	21:53
	4:0	11:5	3:5	12:3

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sealevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the

meridian 75° W. The hours of the day are numbered consecutively from 04 (midnight) to 246 (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3.47 p. m.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., October 18, 1915.  
The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon application of the addressees:  
\*Bernard, Paul A. McPherson, J. L.  
Bryan, W. A. Menninger, C. D.  
Bunting, M. Mesher, J. S.  
Dickenson, Mrs. Elizabeth O'Shea, Jim  
\*Divins, Dr. Geo. G. Paris, Prince  
Frash, F. D. Smith, Richard  
Stark, L. E.  
Green, B. W. Thomas, Preston  
Harrington, Paul Webster, W.  
Harris, Gilbert J. (2) Wheelhouse, Everett  
Janakis, Raymond Williams, Miss Flo  
McGuigan, John Winters, Fred  
McKenzie, Claude

## \* Paper.

## Rainfall from October 1 to 16, 1915, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—			
Balboa	2.17	2	6.01
Balboa Heights	2.07	2	6.31
Miraflores	2.62	9	10.55
Pedro Miguel	2.84	10	9.61
Rio Grande	1.51	2	6.84
Central Section—			
Culebra	1.17	7	5.99
*Camacho	2.21	2	7.46
Empire	1.72	6	9.19
Gambou	1.03	5	6.07
*Juan Mina	2.45	6	8.24
Alhajuela	1.39	6	6.87
*Vigia	1.99	6	7.35
Frijoles	1.87	8	7.39
*Monte Lirio	4.60	9	11.82
Atlantic Section—			
Gatun	2.25	16	8.57
*Brazos Brook	2.03	16	9.26
Colon	4.69	16	12.20
*Bocas del Toro			

\*Standard rain gage—readings at 5 p. m. daily.  
Automatic rain gage at unstarred stations—values midnight to midnight.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, October 16, 1915:

STATIONS.		DAY AND DATE.			
Vigia.	Alhajuela	Gambou.	Gatun Lake.	Miraflores Lake.	
Sun., Oct. 10.	128.15	94.30	86.06	86.05	54.43
Mon., Oct. 11.	128.47	94.18	86.06	86.05	54.43
Tues., Oct. 12.	131.21	96.32	86.06	86.06	54.22
Wed., Oct. 13.	129.86	95.86	86.06	86.05	54.38
Thurs., Oct. 14.	127.80	94.86	86.12	86.07	54.17
Fri., Oct. 15.	129.50	95.05	86.12	86.05	54.32
Sat., Oct. 16.	128.30	94.72	86.11	86.06	54.34

Heights of low water to nearest foot.

## Fuel.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 400 and 650 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 45 shillings per ton of seven barrels. Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., October 17, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

No vessels were despatched from either Canal entrance for transit through the Canal. Vessels arriving during the week, for transit of the Canal, moored in the harbor at Cristobal or Balboa.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

Date	Vessel	Line	From
Oct. 12	California	Pacific Steam Nav. Co.	Kingston, Ja.
Oct. 13	Thode Fogelund	Wilhelmsens Dmsk. Akties.	New York.
Oct. 14	Julundia	East Asiatic Line.	Middlesborough.
Oct. 18	Heraclides	B. Kosteruds Dmsk. Selsk.	Newcastle on Tyne
Oct. 18	Lewis Luckenbach	Luckenbach Line.	New York.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC

Date	Vessel	Line	From
Oct. 25	Constantinos M.L.	Hellenic Transportation Co.	San Francisco.
Oct. 25	Haigh Hall	Haigh Hall S. S. Co.	Portland.

\*Vessels which came for passage through the Canal.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
Oct. 12	Indian Monarch	Monarch S. S. Co.	New York.
Oct. 17	Perou	French Line	Saint Nazaire.

## \*DEPARTURES.

Date	Vessel	Line	To
Oct. 12	Indian Monarch	Monarch S. S. Co.	Trinidad.
Oct. 12	Danube	Royal Mail S. P. Co.	London, via way pts.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From
Oct. 23	Comito	Elders & Fyffes	Limon.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	To
Oct. 22	Perou	French Line	Saint Nazaire.
Oct. 23	Comito	Elders & Fyffes	Bristol, via way pts.

\*Other than vessels which arrived for transit through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

Date	Vessel	Line	From
Oct. 10	Jamaica	Pacific Steam Nav. Co.	Tumaco.
Oct. 10	Kronland	Panama Pacific Line.	San Francisco.
Oct. 12	Pennsylvania	Pacific Mail S. S. Co.	San Francisco.
Oct. 15	Isolda	N. Y. and Porto Rican Line	Calita Colusa.
Oct. 15	Chile	Pacific Steam Nav. Co.	Valparaiso.
Oct. 17	Heraclides	Shipowners Towboat Co.	Los Angeles.

## \*DEPARTURES.

Date	Vessel	Line	To
Oct. 11	Mors	U. S. Navy	San Francisco.
Oct. 11	Columbia	Wilson Bros. & Co.	San Francisco.
Oct. 12	Cauca	Pacific Steam Nav. Co.	Guayaquil.
Oct. 12	Aysen	South American Line.	Valparaiso.
Oct. 14	Solano	Solano S. S. Co.	San Francisco.
Oct. 16	Parthia	Peruvian Line	Callao.
Oct. 17	Genaro	Pacific Steam Nav. Co.	Tumaco.
Oct. 18	Kronland	Panama Pacific Line	San Francisco.

## EXPECTED ARRIVALS.

Date	Vessel	Line	From
Oct. 24	Lonsing	Union Oil Co.	San Luis.

## EXPECTED DEPARTURES.

Date	Vessel	Line	To
Oct. 19	Pennsylvania	Pacific Mail S. S. Co.	San Francisco.

\*Including vessels arriving for transit through the Canal.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Thursday to New Orleans, for all States. Due at New Orleans on the following Tuesday.

Every Friday or Saturday to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week—on Friday when the vessel has not been sent through the Canal to Balboa from New York, and on Saturday if the vessel has been sent to Balboa. The day of departure from Cristobal is bulletined by the Panama Railroad Company several days in advance. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE—The sailings on Monday, November 15 and December 13, will not land mail in New York until Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday boat to New Orleans. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the two sailings mentioned above.

The cable address of The Panama Canal, on the Isthmus, is "Panacanal, Panama;" in the United States, "Panacanal, Washington."

Shipping people addressing The Panama Canal by mail, should address "The Panama Canal, Balboa Heights, Canal Zone," for delivery on the Isthmus, and "The Panama Canal, Washington, D. C.," for delivery in the United States.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Soils	Arrives
Zacapa	U. F. C.	Oct. 13	Oct. 20
Allianca	P. R. R.	Oct. 14	Oct. 20
Calamares	U. F. C.	Oct. 16	Oct. 24
Carrillo	U. F. C.	Oct. 20	Oct. 27
Colon	P. R. R.	Oct. 21	Oct. 27
Tenadores	U. F. C.	Oct. 23	Oct. 31
Santa Marta	U. F. C.	Oct. 27	Nov. 3
Advance	P. R. R.	Oct. 28	Nov. 4
Metapan	U. F. C.	Oct. 30	Nov. 8
Almirante	U. F. C.	Nov. 3	Nov. 10
Panama	P. R. R.	Nov. 4	Nov. 10
Pastores	U. F. C.	Nov. 10	Nov. 14
Zacapa	U. F. C.	Nov. 11	Nov. 17
Allianca	P. R. R.	Nov. 11	Nov. 17
Calamares	U. F. C.	Nov. 13	Nov. 21
Carrillo	U. F. C.	Nov. 17	Nov. 24

## CRISTOBAL-COLON TO NEW YORK.

Vessel	Line	Soils	Arrives
Almirante	U. F. C.	Oct. 21	Oct. 28
Panama	P. R. R.	Oct. 22	Oct. 28
Pastores	U. F. C.	Oct. 25	Nov. 1
Zacapa	U. F. C.	Oct. 28	Nov. 4
Allianca	P. R. R.	Oct. 29	Nov. 4
Calamares	U. F. C.	Nov. 1	Nov. 8
Carrillo	U. F. C.	Nov. 4	Nov. 11

Colon	P. R. R.	Nov. 5	Nov. 11
Tenadores	U. F. C.	Nov. 8	Nov. 15
Santa Marta	U. F. C.	Nov. 11	Nov. 18
Advance	P. R. R.	Nov. 12	Nov. 19
Metapan	U. F. C.	Nov. 15	Nov. 23
Almirante	U. F. C.	Nov. 18	Nov. 25
Panama	P. R. R.	Nov. 19	Nov. 25
Pastores	U. F. C.	Nov. 22	Nov. 29

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba	U. F. C.	Oct. 13	Oct. 20
Heredia	U. F. C.	Oct. 16	Oct. 21
Abangarez	U. F. C.	Oct. 20	Oct. 27
Parismina	U. F. C.	Oct. 23	Oct. 28
Ateas	U. F. C.	Oct. 27	Nov. 3
Cartago	U. F. C.	Oct. 30	Nov. 4
Turrialba	U. F. C.	Nov. 3	Nov. 10
Heredia	U. F. C.	Nov. 6	Nov. 11
Abangarez	U. F. C.	Nov. 10	Nov. 18
Parismina	U. F. C.	Nov. 13	Nov. 18
Atenas	U. F. C.	Nov. 17	Nov. 24
Cartago	U. F. C.	Nov. 20	Nov. 25
Turrialba	U. F. C.	Nov. 24	Dec. 1
Heredia	U. F. C.	Nov. 27	Dec. 2

## CRISTOBAL-COLON TO NEW ORLEANS.

Cartago	U. F. C.	Oct. 21	Oct. 26
Turrialba	U. F. C.	Oct. 21	Oct. 28
Heredia	U. F. C.	Oct. 28	Nov. 2
Abangarez	U. F. C.	Oct. 28	Nov. 4
Parismina	U. F. C.	Nov. 4	Nov. 9
Atenas	U. F. C.	Nov. 4	Nov. 11
Cartago	U. F. C.	Nov. 11	Nov. 16
Turrialba	U. F. C.	Nov. 11	Nov. 18
Heredia	U. F. C.	Nov. 18	Nov. 23
Abangarez	U. F. C.	Nov. 18	Nov. 25
Parismina	U. F. C.	Nov. 25	Nov. 30
Atenas	U. F. C.	Nov. 25	Dec. 2



# CANAL



# RECORD

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## The Canal Record

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All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

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Isthmus of Panama.

### NOTES OF PROGRESS.

#### Arrival of New 15-Yard Dipper Dredge.

The new 15-yard dipper dredge *Cascadas* arrived at Cristobal on Thursday, October 21, and was towed through the Canal to the north end of the Cut on the following day. The work of placing the dredge in order for service is being pushed by day and night shifts, and it is the expectation of the representative of the contractor that all the parts can be assembled and made ready for the working of the dredge within two weeks of the day the work was begun. The boom, dippers, spuds, and other parts which were detached for shipment arrived on the Isthmus in advance of the dredge.

The *Cascadas* arrived three days in advance of the date set for her on the basis of 27 days for the voyage. Fair weather was enjoyed all the way down. The tug *M. E. Luckenbach*, which brought the *Cascadas* in, sailed for the United States on Saturday, October 23.

#### Maintenance Work on West Breakwater.

Operations were begun last week for repairing the West Breakwater in Limon Bay. During the recent northers the heavy seas displaced some of the armor rock and tore gaps in the finished section. The greater part of the damage was done on the sea side where the rock was pulled down from the top of the fill to the slope below elevation -10. The work now under way involves filling the gaps and generally evening up the fill wherever required for proper maintenance.

The repairs are being made with large armor rock quarried at Sosa Hill in connection with the work on the East Breakwater. There will be required approximately 20,000 cubic yards, or 38 train loads containing 530

cubic yards per 28-car train. The rock is hauled to Coco Solo, at the base of operations for the East Breakwater, and is reloaded into rock barges by locomotive cranes. The barges are then towed across the bay to the West Breakwater, where the rock is unloaded by a derrick barge. With smooth seas the derrick barge can work along either side of the breakwater, but in rough weather it is necessary for the derrick barge to stay in the lee of the fill.

#### Hydraulic Fill in the East Breakwater.

The pumping of hydraulic fill into the East Breakwater proper was resumed on Saturday, October 23. This fill consists of sand and broken coral. It is pumped into the core of the breakwater for the purpose of filling the voids in the rock fill and forming a dense, solid core on which to place the large armor rock. The first filling for the breakwater proper was made by scows, dumping a blanket of coral rock (dredged material) five to 10 feet deep in advance of the trestle construction. This has been followed by the dumping of Sosa Hill rock, forming the rock fill which is now being made into a compact core by the hydraulic fill. Prior to this date and for the past six months the hydraulic fill has been used for stabilizing the 3,000 feet of single-track trestle in the approach to the breakwater proper. Although this trestle is to be removed eventually, it is necessary to fill in around its piling to steady it for the passage of rock trains.

The hydraulic fill is handled through two relay stations and is delivered approximately two miles from the dredge. The pipeline suction dredge No. 84 is excavating from the harbor at Coco Solo and pumping into the relays.

#### Testing Chain Fender Machines.

The steamship *Allianca* was used for testing the chain fender machines for protecting the mitre gates in the west flight of Gatun Locks on Tuesday, October 26. The vessel was run at various speeds against the chain, and observations were made of the strains and the time and distance required to bring the vessel to a stop. The *Allianca* left the locks shortly before six o'clock in the evening and returned to Cristobal.

#### Arrival of Fuel Oil at Pacific Handling Plant.

The shortage of fuel oil on the Isthmus, resulting from the unprecedented demands for it during the congestion of traffic at the Canal, was relieved on Sunday, October 24, by the arrival of 104,000 barrels at Balboa. Forty thousand barrels arrived in the steamship *Lansing*, from Port San Luis, consigned to the Union Oil Company, owner of the *Lansing*. Thirty-eight thousand barrels came in the *Captain A. F. Lucas*, and 26,000 barrels in Standard Oil Company's barge No. 93, consigned to The Panama Canal.

### RATES ON TRANSFER CARGO.

Temporary Fiat Rate of \$3 per Ton Ceases October 31.—Regular System Thereafter, with Reduced Rail Rates.

With reference to the conditions governing the transfer of cargoes by rail between vessels held up at the terminals, note of which was made in THE CANAL RECORD of October 13, the rate of \$3 for the railroad haul, including free wharfage, craning, stevedoring, etc., under conditions set forth below, was to meet an emergency, and enable steamships already at the Canal and on the way to it to transfer their cargoes.

This emergency is now being relieved and the Panama Railroad has issued circular No. 167, under date of October 20, stating conditions under which, effective with arrivals on and after November 1, such cargoes may be handled between Balboa and Cristobal. The circular is as follows:

To all concerned.—With a view to minimizing the delays to which vessels and cargo would be subjected during the time the Panama Canal is closed to commerce, the Panama Railroad Company, effective October 6, 1915, arranged for the transfer of cargo between steamers on the Atlantic and Pacific Oceans at the rate of \$3 per bill-of-lading ton, applicable under the following conditions:

- (a) Steamers to be berthed at Cristobal and Balboa, and allowed the use of the cranes that are located on the Balboa piers, without payment of the regular rates for such service that are established in the Panama Railroad Company's tariff.
- (b) Cargo to be stevedored by the railroad company out of and into steamers, and transferred across the Isthmus in cars sealed by, or in the presence of, agents of steamers.
- (c) No check as to quantity or condition to be taken, no receipts exchanged at the receiving and delivering points.
- (d) The Panama Railroad Company to be relieved from all responsibility, which, in view of the low rate charged for this service, will be assumed by the steamers for loss or damage to cargo while in its custody, occurring from stevedoring, handling, transferring, or any other cause.
- (e) Discharging berth to be furnished to a vessel only when a connecting vessel is on the opposite side of the Isthmus, thereby permitting of the direct exchange of cargoes between them.

On October 31, 1915, the above rate of \$3 per bill-of-lading ton will cease. Effective November 1, and during any period that the Canal is closed to commerce, cargoes will be handled between steamers on the Atlantic and Pacific Oceans on the following basis:

1. Steamers to pay the rates prescribed in the Panama Railroad Company's tariff for wharfage, use of cranes, and stevedoring of cargo in and out.
2. The following rates to apply for the transfer of cargoes on the railroad:

Classification in Local Tariff No. 4.	Charge per bill-of-lading ton.
No. 5.....	\$2.00
No. 4.....	2.50
No. 3.....	3.50
No. 2.....	4.50
No. 1.....	5.50
"1 1/2 1st class".....	10.00
D-1 (double 1st class).....	10.00
"2 1/2 1st class".....	15.00
"3 1/2 1st class".....	15.00
"4 1/2 1st class".....	15.00
Specie, gold, silver, precious stones, etc., one-fourth of 10 per cent, ad valorem.	

Previous to November 1 the above indicated classified rates will be applied in connection with the transfer of cargoes where agents of steamers prefer to avail of them rather than the \$3 rate, because of the conditions under which it is applicable.

## CANAL WORK IN SEPTEMBER.

Monthly Report of the Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., October 14, 1915.  
The Honorable the Secretary of War,  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of September, 1915:

Department of Operation and Maintenance.

**Lock operation and maintenance.**—In addition to the usual maintenance and repair work at the locks, the painting of the gate leaves in the west chamber of Gatun Locks was completed. The floating caisson was transferred to the foot of the east flight, and painting work in the east chamber undertaken, and at the end of the month the work was about 48 per cent completed. The following commercial lockages were made:

*Gatun*—98 lockages, 137 vessels; *Pedro Miguel*—98 lockages, 107 vessels; *Miraflores*—108 lockages, 109 vessels.

**Electrical Division.**—The net output of the power plants was as follows: Gatun hydroelectric station, 3,209,680 kilowatt-hours; Miraflores steam station (minus), 23,250 kilowatt-hours; total, 3,186,430 kilowatt-hours. The output of the Balboa air compressor plant was 156,993,290 cubic feet of free air compressed to 105 pounds. The usual operation, maintenance, and repair work was carried on.

**Municipal Engineering Division.**—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: The installation of oil and water mains for supply to Cristobal coal plant from dock No. 13; the installation of water pipes for the dry dock at Balboa; the construction of permanent roads for Balboa shops and the installation of permanent water lines for the Pacific terminals; work on the water and sewer systems and the streets and walks for the Coast Artillery posts on Balboa dump and Margarita Island; the pavements for the Army stables at Corozal; and grading and road building in the Balboa townsite.

**Meteorology and hydrography.**—The rainfall for the month was generally deficient over both the Pacific and central sections, but above normal over the Atlantic section. The monthly totals ranged from 3.59 inches at Balboa to 16.12 inches at Gatun, the maximum precipitation recorded on any one day being 3.95 inches, at Monte Lirio on the 15th. The estimated rainfall over the Gatun Lake watershed was seven per cent below the average, or 11.09 inches against a 15-year mean of 11.95 inches. The Chagres River discharge at Alhajuela was one per cent below the 26-year September normal, and furnished 40 per cent and 37 per cent of the net and total Gatun Lake yields, respectively. The elevation of Gatun Lake varied from 86.27 on the 15th to 85.92 on the 16th, averaging 86.03. Miraflores Lake ranged from 54.40 on the 11th to 53.00 on the 29th, averaging 53.93. Four seismic disturbances were recorded at Balboa Heights during the month, on the 7th, 17th, 20th, and 23rd, but no damage was reported as a result of any of these disturbances.

Division of Terminal Construction.

PACIFIC TERMINALS.

**Dry dock and entrance pier.**—The excavation for the sump pits and west wall was completed, and excavation for the concrete apron

in front of the dock approximately 75 per cent completed. There were placed 1,310 cubic yards of mass and 1,649 cubic yards of reinforced concrete, the greater part of which was placed in the pump well walls. The storm sewer on the north side was completed for a length of 232 linear feet, and the duct line adjacent thereto was completed for a length of 90 linear feet. Eight girders for supporting the crane rails were set and encased in concrete. There were placed 116,051 pounds of reinforcing steel, of which 84,513 pounds were rail for reinforcing and anchoring rails. Fixed steel set in concrete totaled 3,374 pounds. Twenty-five granite blocks were set in the caisson sill, completing this item, and the hollow quoin on the north side was also completed. At the compressor house (building No. 29), 50 cubic yards of earth were removed by hand in preparing for the emplacement of machine foundations, and both machine bases for the compressor and the pipe trench were completed, 309 cubic yards of mass and 66 cubic yards of reinforced concrete being used in the work, in which was embedded 4,969 pounds of reinforcing steel and 1,473 pounds of fixed steel. The three piers which carry the shops' tunnel across the incline at the head of the dry dock were completed, 32 cubic yards of concrete being placed. Structural steel placed in the dock gates amounted to 84.10 tons, making a total to date of 908 tons. The erection and riveting of the downstream sheathing was completed, except in the top and bottom panels. All mechanical and structural work on the berm cranes was completed, the electrical installation was continued, and each of the cranes has been given a first coat of field paint.

In the entrance pier 200 cubic yards of rock were excavated by hand in preparing foundations for the head wall. Four panels of steel deck were set in a line, and the fixed track west of the crossovers was also set in place. Forms on the steel decking were completed for three panels and reinforcement placed in one of them. Nine hundred linear feet of duct were placed in the wall.

**Coaling plant.**—In the unloader wharf 185 cubic yards of rock were excavated by hand in preparing the foundation for the buttresses, and 118 cubic yards of material were dumped from the cylinders. There were placed in the buttresses 2,477 cubic yards of concrete, completing the buttresses from station 1 plus 50 to 2 plus 25, the one at station 1 plus 25 being finished to elevation -1.0. In front of the finished piers there were placed 136 cubic yards of earth to strengthen the cofferdam in that area.

At the reloader wharf 69 piles were driven in repairing the construction trestle, 3,613 linear feet of piling being used. Excavation has been completed in 71 caissons, but five caissons remaining unfinished, 189 cubic yards of rock being excavated during the month. Thirty-one caissons were filled with concrete to elevation -5.0, 1,471 cubic yards of concrete and 496,287 pounds of reinforcing steel being placed. The work of placing concrete floors in the unloader towers progressed satisfactorily.

**Excavation and filling.**—The total excavation for the month amounted to 46,585 cubic yards, the greater portion of which was obtained from Sosa Hill, and of which 41,273 cubic yards were classified as rock. A total of 47,371 cubic yards of fill was placed. There were sent to the East Breakwater from Sosa

Hill quarry 36,041 cubic yards, of which 30,227 cubic yards were classified as core rock.

**Docks.**—Forty-seven croscoated piles were driven in the fenders of pier No. 18, completing the driving of piles on the south side of this pier. In the center portion of the pier the driving of piles was also practically completed; and the retaining wall was completed on the north side, and on the south side for a length of about 100 linear feet. In the quay wall c-d, 64 piles were driven of which 48 were construction trestle and 16 guides for caissons, the total length of piling used being 3,213 linear feet. Twenty caissons were started and excavation completed in five of them, the total excavation amounting to 417 cubic yards. Three caissons were filled with concrete, requiring the placing of 162 cubic yards of concrete and 26,205 pounds of reinforcement. The quarantine boat landing was finished, except for the bridge leading down from the pontoon, and the balance of the work will be done by the forces of The Panama Canal.

ATLANTIC TERMINALS.

**East Breakwater.**—The trestle was advanced from station 37 plus 69 to station 53 plus 83 "C," 1,614 linear feet of double-track trestle being constructed, in which 91,475 linear feet of piling were used. This establishes a new monthly record in trestle construction on the Isthmus. There were laid on the trestle 1,397 linear feet of 2-inch water main. A total of 38,461 cubic yards of Sosa Hill rock was dumped into the fill, of which 30,685 cubic yards were classified as core rock. Scows dumped 731 cubic yards of earth, 3,398 cubic yards of coral rock, and 13,265 cubic yards of blue rock, on the sea slope of the fill. Dredge No. 4 pumped 3,706 cubic yards of coral sand and 33,351 cubic yards of coral rock on the center line of the "shore" trestle, bringing the fill up to -15 at bents 220 to 280. The wet and dry fill measured in place amounted to 73,072 cubic yards for the month.

Under date of August 2, 1915, a contract was entered into with J. A. Walker and W. A. Torbert, successful bidders, for the manufacture of 10,000 concrete blocks, measuring 7-feet cube and having a volume of about 12.3 cubic yards each, to be manufactured at Gamboa and delivered at Coco Solo, to be used in armoring the East Breakwater, the contract price being \$4.7355 for each block. The erection of the plant by the contractors proceeded during the months of August and September, but the casting of blocks has not as yet been started.

**Coaling plant.**—The driving of fender piles for the unloader wharf, and of 19 dolphins at its northwest corner, was completed, thus completing the entire fender system for the wharf. All but 31 caissons under the end wharf had been filled with concrete, 354 cubic yards of concrete being placed. The pouring of floor slab and girder encasement continued and all but 97 linear feet at the north end of the reloader wharf have been completed, the total concrete poured during the month amounting to 3,220 cubic yards. The three caissons located in the opening at west end of end wharf were driven to rock and two of them filled with concrete. Eight-foot cylinders were placed over the 6-foot caissons that collapsed in August, and after driving to a depth of about 70 feet, the removal of the collapsed sections was commenced. There remained at the end of the month the two cylinders mentioned above and one in the opening, to complete caisson foundations for all wharves. All steel



for the end wharf was erected and riveted, except two bays at west end and a few girders over the collapsed cylinders which are located under wharf bunker, the total weights of deck steel erected and riveted being 100 tons and 60 tons, respectively. The dredging to elevation -41.0 of the unloader slip was completed, and the dredging of the reloader slip continued and was about 60 per cent completed. Twenty-nine thousand nine hundred and fifty-nine cubic yards of material were dredged in slips at the coaling station.

Under Washington order No. 40,483 the installation of machinery and hoppers in bridges and diggers continued. The two traveling hoppers on bridge "A" are erected and riveted complete and the two hoppers on bridge "B" are approximately 50 per cent completed. The two sliding switches, and the four motor platforms between the trucks of stocking and reclaiming bridges, were erected and riveted complete. Approximately 40,000 pounds of miscellaneous steel were erected. Corrugated sheet iron work on the bridge digger houses was completed, all of these houses being now completely enclosed, except for the doors and operators' windows. The steel erection of viaduct on the unloader wharf to the northeast loop was completed, with the exception of some diagonal bracing, nine panels being riveted complete during the month. The erection of the reloader wharf viaduct is in progress, approximately 24,000 pounds of steel being erected in the lower platforms of trailing feeder hoppers but not riveted. The placing of cross-ties and plank walkways on the viaduct continued, 2,600 linear feet being in place, and this item is now 50 per cent complete. The electrical installation continued and proceeded satisfactorily.

Under Washington order No. 40,587 the work continued and proceeded satisfactorily. Taking all mechanical elements of unloader towers into consideration, the percentages of completion of mechanical work are as follows: Tower No. 1 is 90 per cent complete; tower No. 2 is 85 per cent complete; tower No. 3 is 75 per cent complete; and tower No. 4 is 65 per cent complete. The electrical work on tower No. 1 was started on September 17 and at the end of the month was approximately 20 per cent completed.

**Fuel oil plants**—The construction work remaining to be done in connection with the fuel oil plants was turned over to the Mechanical Division at the beginning of the month.

#### Marine Division.

One hundred oceangoing vessels and two launches passed through the Canal in September, of which 51 (and one launch) were northbound and 49 (and one launch) southbound. Of this total 25 were of American and 56 of British register. In addition, tolls were collected from 65 vessels, 31 southbound and 34 northbound, which, on account of the slides in Gaillard Cut, were unable to make the passage of the Canal, and at the end of the month were anchored at the respective terminal ports. Eighteen vessels were measured and 146 vessels inspected to see whether their certificates conformed to the rules. The United States net equivalent tonnage was computed on 52 vessels. Statements showing vessels making the transit of the Canal in each direction during the month are appended to this report.\*

\*The information contained in these tables has been published in the weekly reports in THE CANAL RECORD. The tables are therefore not printed.

#### Dredging Division.

The total excavation for the month, including earth, rock, and gravel, was 1,348,170 cubic yards. Of this total 153,331 cubic yards of earth were removed from Balboa inner harbor, 254,257 cubic yards of earth and 798,299 cubic yards of rock from the Canal prism in Gaillard Cut, 30,903 cubic yards of rock and 2,454 cubic yards of earth from the Cristobal coaling station and adjacent waters, and 3,706 cubic yards of sand and 33,351 cubic yards of rock were dredged at Coco Solo for the East Breakwater.

The most pronounced movement that has occurred in the Canal slides started September 18 and continued throughout the month in the east Culebra slide. The west Culebra slide was also active, and the Canal was closed to navigation from the 18th to the end of the month. The Canal was also closed by a smaller movement of east Culebra slide from the 4th to the 9th.

The rock breaker *Vulcan* was engaged from the 1st to the 11th in breaking rock south of pier No. 18, Balboa, 917 holes being broken over an area of 14,672 square feet, with a total penetration of 2,613 feet and a breakage of 1,552 cubic yards. From the 12th to the end of the month the *Vulcan* was engaged in breaking rock to grade between Stations 2,152 and 2,160, Canal prism, east side, 2,157 holes being broken over an area of 34,512 square feet, with a total penetration of 870 feet and a breakage of 516 cubic yards. The hydraulic grader was engaged the entire month furnishing steam to rock drills. Dredges No. 1 and No. 82 were engaged the entire month excavating sand and gravel in the Chagres River, 3,600 cubic yards of sand, 1,288 cubic yards of No. 1, 5,121 cubic yards of No. 2, and 34,483 cubic yards of run-of-bank gravel being excavated. The work of exterminating water hyacinths continued and approximately 51,000 young plants were destroyed.

#### Mechanical Division.

Shop orders authorized during the month numbered 1,091, an increase of 96 as compared with August; those left over from the previous month numbered 557, and those carried forward into October numbered 667. The output of the foundry was 149,991 pounds of iron, 83,523 pounds of steel, and 14,667 pounds of brass. Hoisting was done on 4,519 pieces of equipment, and shop and field repairs were made on 6,419 cars. In addition, 748 cars were repaired in shop, and 1,207 light and six heavy repair jobs were done on equipment.

**Fuel oil plants**—The operation of the fuel oil handling plants was taken over by the Supply Department on September 1, and the remaining construction work in connection therewith was assumed by this division.

At the Balboa fuel oil plant the fire walls around the tank sites of the Panama Canal Storage Corporation on lots Nos. 13 and 14, and the drain connections from inside the walls to the outfall sewer, were practically completed. The work of lowering the Balboa-Paraiso oil line and burying it in order to reduce maintenance charges caused by expansion and contraction, was completed. The gasoline storage tank was about 75 per cent completed at the end of the month.

At Mount Hope tanks Nos. 4 and 28, belonging to the Huasteca Petroleum Company, and tanks Nos. 10 and 41, belonging to the Texas Company, were strapped and gage tables for Nos. 4 and 28 were computed. The

two 10-inch oil lines installed under the French canal were tested with air. The cross connection at the coal handling plant was installed and a temporary 6-inch line run from that point along the surface of the ground to a point about half-way down the east side of the unloader wharf. Grading around the Mount Hope plant is practically completed. The Texas Company's pipe line, and the lines of the Panama Canal Storage Corporation, were tested to 250 pounds pressure, and accepted. The erection of the gasoline storage tank was continued, and caulking and erection of the roof plating is practically completed.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following construction work was in progress for the Army at the places named: *Fort Amador*—All officers' and non-commissioned officers' quarters and barracks were completed. The storehouse at this post was 90 per cent completed and the one at Naos Island 75 per cent completed. *Military Heights*—Work was continued on the staff officers' quarters and at the end of the month these buildings were approximately 80 per cent completed. *Corozal*—Work on the stables and sheds for the artillery and cavalry, and on the modification of certain Canal quarters for the housing of troops, was continued and approximately 95 per cent completed. *Fort Randolph*—The erection of eight lieutenants' quarters, three captains' quarters, one field officers' building, and a sewage pumping station, progressed satisfactorily. The sewage system was approximately 85 per cent completed, two lieutenants' quarters 40 per cent and two 25 per cent, respectively, and the three captains' quarters and field officers' building were 15 per cent completed. The fill at the site of the barracks and headquarters building was completed and the construction of the two barracks was started. *Toro Point*—The erection of a wagon shed, stable, and storehouse was started, and at the end of the month the wagon shed and stables were 50 per cent completed, and the foundations for the storehouse were ready for concrete.

The following Canal structures were in the course of erection at the places named: *Ancon-Balboa*—All of the frame quarters authorized, comprising 80 apartments, were completed. Work on the concrete family quarters was continued and at the end of the month there remained to complete four 4-family quarters, and the two 4-family quarters under construction by contract. Work was started on the construction of new concrete verandas and modifications of the interior of the old Administration Building at Ancon. The construction of stables for the Panama Railroad Company in the city of Panama was continued and the stables were approximately 97 per cent completed. The crematory building for Ancon Hospital was completed with the exception of the interior flooring and millwork, and the installation of the brick furnaces and machinery was started. The construction of the new refrigerating plant at Balboa progressed satisfactorily and the driving of piles for the foundation was over 50 per cent completed. The erection of the combination bachelor quarters and mess building for pilots near the Balboa quarantine station continued and was approximately 75 per cent completed. The construction of the new buildings for the Ancon Hospital project was started on September 15, and by the end of the month approximately 30 per cent of the foundations



were in place. *Corozal*—Work was continued on the extension of the Miraflores power house, and the roof and all interior foundation work was completed. The seven 12-apartment colored family quarters being erected on the Pedro Miguel-Miraflores road were approximately 25 per cent completed. *Gatun and Colon*—The construction of the new Colon Hospital buildings continued and they were approximately 30 per cent completed. The concrete work in all four buildings comprising the hospital group was completed to and including the second floor. Work was started on the repairing and finishing of the Masonic Temple for the Panama Railroad Company. A large amount of repair work was done at New Gatun on condemned houses at that place preparatory to moving the Colon fire refugees into them.

#### Supply Department.

The force report for the half month ended September 23 showed a total of 23,422 employees of The Panama Canal and the Panama Railroad Company, of whom 3,491 were white Americans and 19,931 laborers. Of the latter approximately 144 were Europeans and the remainder West Indian negroes. There was a decrease of 1,627 laborers and a decrease of 15 Americans, making a net decrease of 1,642.

The occupants of Government quarters numbered 6,782 Americans, of whom 3,769 were men, 1,466 women and 1,547 children; and 8,036 West Indians, of whom 4,952 were men, 1,324 women, and 1,760 children.

The operation of the fuel oil handling plants at Balboa and Mount Hope was taken over by this department as of September 1, together with their personnel, and during the month the Balboa plant handled 155,906.66 barrels, more than two-thirds of which was for The Panama Canal, and the plant at Mount Hope handled 61,113.89 barrels, practically all of which was for The Panama Canal.

The value of material received during the month was \$558,536.71. It came forward in 30 steamers; the total weight of cargo, exclusive of lumber and piling, was approximately 54,652 tons. Some of the principal items were 60,000 barrels of fuel oil and 1,160,200 feet, board measure, of lumber for stock.

#### Health Department.

*General*—One case of yellow fever from Buenaventura, Colombia, developed the disease while in the Balboa quarantine station on September 27, one day after being taken from the steamer *Jamaica*; death occurred October 5. With this exception no cases of yellow fever, smallpox, or plague have originated on or were brought to the Isthmus during the month. Thirty-three deaths occurred in the Canal Zone. The death rate for disease in the Canal Zone, based on a population of 30,219, was 12.31 per thousand per year, as compared with 18.26 for the preceding month and 13.11 for the corresponding month of last year.

*Employees*—The health of employees continued good. The number of names on the pay rolls for the preceding month was 34,827. On this basis the admission to hospitals and quarters, 892, gave a rate of 307.34 per thousand, as compared with 335.44 for the preceding month and 365.70 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites, 283.85; blacks, 126.28; and Americans, 214.69. The admission rates to hospitals and quarters for malaria were: Whites, 117.18; blacks, 43.68; and Americans, 94.46. The total number of deaths

from all causes was 18. Of these 14 died from disease, or 4.82 per thousand, as compared with 3.99 for the preceding month and 5.31 for the corresponding month of last year. No Americans died during the month.

#### Accounting Department.

The cash balance in Canal construction appropriations on September 30, 1915, was \$16,889,119.32 and in the fortification appropriations, \$3,466,070.87. The payrolls for September, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$903,176.04, and the fortification roll amounted to \$70,537.08. Payments by the Disbursing Clerk in Washington amounted to \$787,872.85, and by the Paymaster on the Isthmus to \$1,790,854.59. Collections on the Isthmus amounted to \$884,083.43, of which \$279,072.73 was repaid to appropriations, \$241,407.31 were commissary collections and other trust funds, and \$363,603.39 was miscellaneous receipts to be covered into the Treasury. Of the miscellaneous receipts \$348,720.30 was collected on account of tolls, as compared with \$496,792.03 for the month of August. Deposits in the sum of \$461,109.37 were made with the Assistant Treasurer to be applied in payment of tolls and other charges against vessels using the Canal. Canal Zone revenue collections and miscellaneous funds received amounted to \$211,801.62, and the disbursements under the same heading amounted to \$240,943.91.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

One hundred and fifty-seven licenses of all kinds were issued. Seventeen estates were received and 14 settled, the total cash received during the month amounting to \$383.12, and the total value of the estates closed being \$239.41. At the port of Balboa 110 vessels entered and 87 cleared, and at the port of Cristobal 154 vessels entered and 155 cleared.

*Postal service*—Postmasters remitted on account of stamp sales, second-class mail collections, postal due collections, and box rent receipts, \$8,370.29. Money orders issued during the month aggregated \$311,038.18. Of this total \$100,485 represents the value of deposit money orders issued without fee, in lieu of postal savings certificates. Deposit money orders were paid to the value of \$86,925, and postal savings certificates to the value of \$16,915. The balance of postal savings deposits on hand at the close of the month, represented by unpaid certificates and deposit money orders, aggregated \$338,640, as compared with \$441,995 at the close of the previous month.

#### POLICE AND FIRE DIVISION.

Four hundred and sixty-eight arrests were made. Of this total 453 were males and 15 females. Fifty-six convicts were confined in the penitentiary at the close of the month. Three persons were deported, two of whom were convicts who had completed their sentences in the penitentiary and one of whom was a prisoner who had served a term in jail.

Two fires occurred, and the damage to The Panama Canal property resulting therefrom amounted to \$10. Panama Railroad property, private property, and the property of the United States Army suffered no damage.

#### COURTS.

In the District Court 67 cases were settled; eight civil, 24 probate, and 36 criminal cases were filed, and 94 cases of all kinds were pending at the close of the month. In the magistrates' courts, 21 civil and 461 criminal cases were disposed of.

#### DIVISION OF SCHOOLS.

The schools were closed on June 30, 1915, for the summer vacation.

#### Panama Railroad.

The cargo handled at the Colon and Balboa agencies aggregated 93,459 tons, not including 9,135 tons of rehandled freight.

The following quantities of coal were handled and trimmed in bunkers: Colon agency, 24,387 tons; Balboa agency, 11,533 tons; total, 35,920 tons.

The work on pier No. 7, Cristobal, continued satisfactorily. Contract was let for 1,500,000 paving brick at a contract price of \$58,26. Machinery for the manufacture of cement roof tiling arrived on the Isthmus September 22, but the manufacture of tiling under contract W-70,734 was not started. There were removed from cylinders 5.6 cubic yards of spoil, and 120.6 cubic yards of concrete were placed therein, completing both of these items. One cylinder was completed, making a total of 214 cylinders to date, the total number required, and, with the setting of 96 steel pedestals, this item was likewise completed. Form work for concrete and casement of steel floor system was started, and approximately 11,470 square feet were set. In the construction of the flooring 5,140,700 pounds of steel were erected.

Work was started on preliminary boring for pier No. 6, three holes amounting to 225.2 linear feet of wash drilling and 22.5 linear feet of diamond drilling being made.

Respectfully,

GEO. W. GOETHALS,  
Governor.

#### Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Jurado, L.....	77049	.....	Camp Biedr....	Municipal Eng..	Oct. 23, 1915.
Touvaline, Frederick.....	50810	Jamaica.....	Cristobal.....	Term. Const....	Sept. 13, 1915.

#### Insane Employees.

Name.	Check No.	Native of	Isthmian Residence	Employed by	Date of commitment
Hamblet, Samuel.....	44775	St. Vincent.....	Panama.....	Fortifications...	Sept. 30, 1915.

The estates of the abovementioned deceased and insane employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

**Locomotive Boiler for Gasoline Storage.**

In order to provide a safe storage for gasoline for the omnibuses and railway motor cars at the Balboa station, the Panama Railroad has had a tank installed underground in the plot of ground lying in front of the motor car house and across the road from the bus house. An old locomotive boiler, formerly used in a tem-

porary pump station at Gamboa, was used for the tank. At the same time the Panama Railroad had a water connection made to supply water at the curb for the radiators of the bus engines.

**Contract for Land Defense Clearing.**

Contract for two complete clearings of

land aggregating 3,414 acres and 68 miles of 20-foot trail connected with the land defenses, bids on which were advertised for in THE CANAL RECORD of September 15, has been awarded to the lowest bidder, J. A. Walker and W. A. Torbert, for the lump sum of \$24,156.98.

**RETAIL DRY GOODS PRICE LIST.****Commissary Branch of Supply Department.**

There is published below the retail dry goods price list No. 1, effective November 1, 1915, governing the prices of articles sold in the dry goods departments of the commissary stores. The prices are those at which the items will be sold to Canal employees and other residents of the Isthmus who have commissary privileges. These prices will be increased by 10 per cent in cases of sales to commercial vessels and ships of foreign navies, and by 20 per cent in cases of sales to yachts.

The retail grocery list now in effect, No. 2, was published in THE CANAL RECORD of July 28, 1915. The retail price list of leather goods was published in THE CANAL RECORD of September 1, 1915. The retail hardware price list was published in THE CANAL RECORD of September 29, 1915. Those who need copies of these lists may secure them from the Depot Commissary, Cristobal, Canal Zone.

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
	Albums (see Stationery).			9829	Belts, ladies', patent leather, black, red, or white.	Each	\$0.22
8694	Alpaca, plain black or Navy blue.	Yard	\$0.90	5845	Belts, men's, leather, black or tan.	Each	.43
11825	Alpaca, fancy.	Yard	1.65	8173	Belts, men's, leather, white.	Each	.87
8795	Alpaca, striped.	Yard	1.15	8317	Belts, men's, leather, with pearl buckle, black, tan, or white.	Each	.44
6488	Ammonia, violet.	Bot.	.10	8568	Belts, men's, leather, with covered buckle.	Each	.85
9542	Antisepticus, liquid, P. C.	Bot.	.25	8985	Belts, men's, leather, with brass buckle.	Each	.55
9831	Aprons, gingham.	Each	.24	9114	Belts, men's, leather, black or tan.	Each	.61
9974	Aprons, sanitary, nainsook.	Each	.41	9432	Belts, men's, cotton, white.	Each	.20
9975	Aprons, sanitary, silk.	Each	.68	11126	Belts, men's, black or tan, covered buckle.	Each	.44
11372	Aprons, coverall.	Each	.42	11582	Belts, men's, cotton, without buckle.	Each	.11
11373	Aprons, coverall.	Each	.39	8485	Belts, sanitary, ladies'.	Each	.15
5591	Atomizers.	Each	.55	5476	Blankets, wool, gray, suede.	Each	1.70
	Auxiliator (see Tonic, hair).			5772	Blankets, cotton, gray, single.	Each	.43
	Bags, cricket (see Cricket supplies).			7995	Blankets, cotton, Jacquard.	Each	.94
11125	Bags, hot water.	Each	.79	11896	Blankets, cotton, Jacquard.	Each	1.30
9351	Bags, ice, rubber.	Each	.59	11423	Bleach, nail, Ongoline.	Jar	.27
7176	Bags, laundry.	Each	.47		Blotters (see Stationery).		
7178	Bags, laundry.	Each	.52	9632	Blouses, boys'.	Each	.46
5449	Bags, shopping.	Each	.18	9836	Blouses, middy, Norfolk.	Each	1.30
11813	Bags, vanity.	Each	.08	9875	Blouses, middy, short sleeves.	Each	.91
5856	Balls, camphor.	Box	.24	9887	Blouses, middy, short sleeves.	Each	1.30
	Balls, cricket (see Cricket supplies).			9888	Blouses, middy, long sleeves.	Each	1.25
11612	Balls, tennis.	Each	.32	9889	Blouses, middy, long sleeves.	Each	.91
11857	Bandages, gauze, 2".	Roll	.03	1123	Blouses, middy, blue collar.	Each	.95
11858	Bandages, gauze, 2 1/2".	Roll	.04	11137	Blouses, middy, Bulgarian.	Each	1.30
11859	Bandages, gauze, 3".	Roll	.05	11557	Blouses, middy, Bulgarian.	Each	1.15
11861	Bandages, gauze, 3 1/2".	Roll	.06	11855	Blouses, middy, Palm Beach.	Each	1.30
9281	Bands, arm, Blakely.	Pair	.06	7151	Boards, emery.	Doz.	.21
9517	Bands, arm, No. 338.	Pair	.16		Bodkins (see Needles).		
11469	Bands, arm.	Pair	.17	8958	Boning, collar.	Yard	.04
9367	Bands, hat.	Each	.40		Books, memo (see Stationery).		
8482	Barrettes.	Each	.23		Books, score (see Cricket supplies).		
8483	Barrettes.	Each	.40	11817	Boxes, powder puff.	Each	.25
5521	Bars, mosquito, double.	Each	1.40	5642	Boxes, soap.	Each	.49
11591	Baseballs.	Each	1.10	11812	Boxes, vanity, celluloid.	Each	.25
9938	Batiste, holly.	Yard	.10	11899	Braid, finishing.	Yard	.03
11781	Batiste, fancy.	Yard	.16	9712	Braid, lingerie, No. 7.	Piece	.06
	Bats, cricket (see Cricket supplies).			9713	Braid, lingerie, No. 8.	Piece	.06
6376	Bay rum, St. Thomas.	Bot.	.25	11932	Brassieres, Model.	Each	.44
11146	Bay rum, P. C.	Bot.	.20		Brilliantine (see Tonic, hair).		
	One cent each allowed for empty bottles returned.			9325	Brooms, whisk, No. 47.	Each	.15
	Beading, lace (see Lace).			9326	Brooms, whisk, No. 49.	Each	.17
5137	Bedspreads, dimity.	Each	1.30	8865	Brushes, bath, long handle.	Each	.43
7994	Bedspreads, colored, hemmed, with fringe.	Each	1.10	11158	Brushes, bath.	Each	.87
8738	Bedspreads, double, white, hemmed.	Each	1.10	8124	Brushes, clothes, Keep Clean.	Each	.65
9349	Bedspreads, double, white, with fringe.	Each	1.20	11159	Brushes, clothes.	Each	.75
9424	Bedspreads, dimity, 80" x 90".	Each	1.20	6288	Brushes, hair, Keep Clean.	Each	.39
9687	Bedspreads, with fringe, crochet.	Each	1.05	9292	Brushes, hair, wire.	Each	.75
11312	Bedspreads, dimity, 62" x 90".	Each	.90	75	Brushes, hair.	Each	1.00
11335	Bedspreads, single, white, hemmed.	Each	.75	9294	Brushes, hair.	Each	.65
11683	B. ting, black, No. 152.	Yard	.15	9841	Brushes, hair, infants'.	Each	.19
11685	B. ting, black, No. 153.	Yard	.18	11147	Brushes, hair.	Each	1.15
11524	Belting, dress, 2", white.	Yard	.04	11157	Brushes, hair.	Each	.41
11525	Belting, dress, 1 1/2", black.	Yard	.03	11265	Brushes, hair.	Each	.64
11684	Belting, white, No. 152.	Yard	.15	2379	Brushes, nail.	Each	.10
11686	Belting, white, No. 153.	Yard	.18				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
6877	Brushes, nail.	Each	\$0.22	11826	Cases, pillow, linen, hemstitched and embroidered.	Pair	\$1.20
9295	Brushes, nail.	Each	.25	11867	Cases, pillow, linen, plain, hemstitched.	Pair	1.15
5552	Brushes, shaving, rubber-set.	Each	1.00	11868	Cases, pillow, linen, plain, hemstitched.	Pair	1.35
6375	Brushes, shaving.	Each	.23	11869	Cases, pillow, linen, plain, hemstitched.	Pair	1.50
6569	Brushes, shaving.	Each	.24	11571	Clips, collar, military.	Each	.03
7894	Brushes, shaving.	Each	.18		Clips, gem (see Stationery).		
9297	Brushes, shaving.	Each	.70		Clips, tie.	Each	.19
5623	Brushes, tooth, antiseptic.	Each	.16	9957	Clips, tie.	Each	.31
7664	Brushes, tooth, prophylactic.	Each	.21	9958	Clips, tie, rolled gold.	Each	.48
11918	Brushes, tooth, prophylactic, children's.	Each	.18	11241	Clips, tie, sterling silver.	Each	.48
9296	Brushes, tooth.	Each	.12	11243	Cloth (see also other lines of dress goods, under headings: "Alpaca," "Batiste," "Cambric," "Damask," "Poplin," etc.).		
11841	Buckles for belts.	Each	.09		Cloth, flaxon, colored.	Yard	.18
5627	Buffers, nail, chamois.	Each	.40	11647	Cloth, Honeycomb.	Yard	.14
11870	Bunting, red, white, and blue.	Yard	.06	11651	Cloth, lace.	Yard	.16
11465	Burlap, 35", brown, green, and red.	Yard	.11	11418	Cloth, lace, fancy.	Yard	.24
7474	Buttons, bachelor.	Doz.	.07	11621	Cloth, lace.	Yard	.14
8674	Buttons, bone, black, No. 27.	Doz.	.02	11669	Cloth, long, white, Burleigh.	Yard	.14
8675	Buttons, bone, black, No. 30.	Doz.	.02	9418	Cloth, mercerized.	Yard	.20
5812	Buttons, collar.	Each	.09	11578	Cloth, mercerized, Jacquard.	Yard	.16
11229	Buttons, cuff.	Pair	.93	11821	Cloth, Monogram.	Yard	.16
11213	Buttons, jet, black.	Doz.	.19	11635	Cloth, oil, white.	Yard	.18
11214	Buttons, jet, black.	Doz.	.27	9493	Cloth, oil, colored.	Yard	.17
11215	Buttons, jet, black.	Doz.	.42	11353	Cloth, Palm Beach.	Yard	.88
11197	Button molds.	Doz.	.02	11385	Cloth, Premier.	Yard	.14
5496	Buttons, pearl.	Doz.	.03	11633	Cloth, Ramapo.	Yard	.33
9271	Buttons, pearl, No. 16.	Doz.	.07	11634	Cloth, Rehan.	Yard	.17
9272	Buttons, pearl, No. 18.	Doz.	.03	9228	Cloth, Ripplette.	Yard	.12
9273	Buttons, pearl, No. 20.	Doz.	.09	11349	Cloth, Samson Galatea.	Yard	.15
9274	Buttons, pearl, No. 21.	Doz.	.11	11619	Cloth, shrunk Frances.	Yard	.18
9275	Buttons, pearl, No. 24.	Doz.	.13	11659	Cloth, silk, embroidered.	Yard	.28
9746	Buttons, pearl, with bolts.	Each	.03	11613	Cloth, silk, foundation.	Yard	.22
9747	Buttons, pearl, No. 26.	Doz.	.16	11637	Cloth, silk and cotton novelties.	Yard	.19
9748	Buttons, pearl, No. 28.	Doz.	.18	11644	Cloth, Splash Frances.	Yard	.26
9749	Buttons, pearl, No. 30.	Doz.	.22	11842	Cloth, Supreme cordis.	Yard	.18
9751	Buttons, pearl, No. 32.	Doz.	.32	11346	Cloth, tissue.	Yard	.10
9752	Buttons, pearl, No. 16.	Doz.	.04	11655	Cloth, tissue.	Yard	.21
9753	Buttons, pearl, No. 18.	Doz.	.05	11348	Cloth, waisting.	Yard	.17
9754	Buttons, pearl, No. 20.	Doz.	.06	11616	Cloth, waisting.	Yard	.23
9755	Buttons, pearl, No. 22.	Doz.	.06	11641	Cloth, woven, shepherd checks.	Yard	.12
9756	Buttons, pearl, No. 24.	Doz.	.07	11629	Cloths, sideboard, hemstitched and embroidered, 16" x 54".	Each	.85
9757	Buttons, pearl, No. 26.	Doz.	.09	8384	Cloths, sideboard, hemstitched, 18" x 54".	Each	.56
9758	Buttons, pearl, No. 28.	Doz.	.10	8761	Cloths, sideboard, embroidered, linen, 18" x 72".	Each	1.27
9759	Buttons, pearl, No. 30.	Doz.	.11	9599	Cloths, sideboard, linen, 17" x 63".	Each	.65
11799	Buttons, pearl, No. 40.	Each	.07	5664	Cloths, table, P. C. Hotel.	Each	1.65
11811	Buttons, pearl, No. 45.	Each	.08	7567	Cloths, tea, linen, 36" x 36".	Each	.63
8319	Cambric, linen, white, 36".	Yard	.31	8669	Cloths, tea, embroidered, 36" x 36".	Each	1.10
8321	Cambric, linen, white, 36".	Yard	.38	8671	Cloths, tea, embroidered, 45" x 45".	Each	1.59
8359	Cambric, linen, 36".	Yard	.31	8672	Cloths, tea, embroidered, 54" x 54".	Each	2.25
9254	Cambric, diamond hill, white, 36".	Yard	.09	9598	Cloths, tea, linen, 54" x 54".	Each	1.35
9268	Cambric, bleached, Lonsdale.	Yard	.12	6938	Cloths, wash, San-Knit-Ary.	Each	.04
11518	Cambric, linen, 36".	Yard	.30	11563	Coats, Palm Beach.	Each	3.30
11759	Cambric, linen, bleached, 36".	Yard	.34	8852	Coats, rain, ladies'.	Each	4.75
11766	Camphor, gum, 1-oz.	Cake	.04	5923	Coats, rain, men's.	Each	7.90
9291	Canvas, No. 4, 54".	Yard	.62	8131	Coats, rain, men's.	Each	9.40
9459	Capes, rain, children's, red or blue, with hood.	Each	2.00	9118	Coats, rain, men's.	Each	6.85
11115	Capes, rain, men's.	Each	7.05	5796	Collars, men's, linen, "Arrow"	Each	.11
11116	Capes, rain, men's.	Each	7.35	9249	Collars, soft.	Each	.21
11117	Capes, rain, men's.	Each	7.60	11879	Collars, military.	Each	.15
11118	Capes, rain, men's.	Each	7.20	7148	Cologne, headache, Hudnut's.	Bot.	.67
11119	Capes, rain, men's.	Each	7.50	2443	Combs, white rubber.	Each	.30
11121	Capes, rain, men's.	Each	7.75	5174	Combs, hard.	Each	.11
5114	Caps, bathing, ladies', silk.	Each	.85	8127	Combs, celluloid.	Each	.19
9223	Caps, bathing, ladies'.	Each	.22	8128	Combs, celluloid.	Each	.07
11772	Caps, bathing, ladies'.	Each	.41	8928	Combs, ladies', black rubber.	Each	.16
11773	Caps, bathing, ladies'.	Each	.22	9317	Combs, black rubber, 8".	Each	.16
5945	Caps, men's, khaki.	Each	.38	9318	Combs, black rubber, 9".	Each	.21
6383	Caps, men's, shepherd, check.	Each	.56	9319	Combs, barber's, black rubber, 7".	Each	.11
6384	Caps, men's, engineer's.	Each	.17	9321	Combs, barber's, black rubber, 7 1/2".	Each	.07
6949	Caps, men's, tweed.	Each	.38	9322	Combs, fine, black rubber.	Each	.07
	Cards, correspondence (see Stationery).			9358	Combs, side, shell and amber.	Each	.20
	Cards, playing (see Stationery).			9359	Combs, side, shell and amber.	Each	.13
8376	Cases, pillow, linen, hemstitched with scalloped edge, 22" x 36".	Pair	2.40				
8653	Cases, pillow, linen, hemstitched and embroidered, 22" x 36".	Pair	1.35				
9588	Cases, pillow, cotton.	Each	.18				



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
9697	Combs, men's, ivory.....	Each	\$0.19	11564	Damask, table linen, 72".....	Yard	\$0.73
9698	Combs, ladies', ivory.....	Each	.18	11221	Darners, stocking.....	Each	.05
9838	Combs, ladies', white tuskanoid.....	Each	.32		Dentifrice, Odol (see Wash, tooth).		
9839	Combs, men's, white tuskanoid.....	Each	.23	8662	Diaper, cotton, 24", 10-yard.....	Piece	.71
11661	Comfortables.....	Each	1.20	9246	Diaper, cotton, 24".....	Piece	.84
9452	Corsets, No. 123.....	Each	1.55	2383	Diapers, Purity, 18" x 36".....	Each	.07
11554	Corsets, Bon Ton, low.....	Each	2.45	11656	Dimity, checks.....	Yard	.14
11555	Corsets, Bon Ton, medium.....	Each	2.45	8945	Dimity, check, flaxon white.....	Yard	.16
9953	Corsets, Reduso, W. B., 787.....	Each	2.45	11657	Dimity, cords.....	Yard	.14
9954	Corsets, Reduso, W. B., 789.....	Each	2.50	11778	Dimity, fancy.....	Yard	.19
9955	Corsets, Reduso, Nuform.....	Each	1.25	11775	Dimity, striped.....	Yard	.03
11824	Corsets, Royal Worcester.....	Each	1.55	9467	Dioxogen.....	Bot.	.28
9451	Corsets, W. B., 478, 484.....	Each	.89	8362	Doilies, damask, H. S., 14" x 14".....	Each	.36
9956	Cotton, absorbent, 4-oz.....	Pkg.	.14	8364	Doilies, damask, H. S., 15" x 15".....	Each	.39
11585	Cotton, crochet, Nos. 3, 10, 20, 40, white.....	Ball	.09	8115	Doilies, linen, embroidered, 10" x 10".....	Each	.35
11589	Cotton, crochet, No. 16-25.....	Skein	.01	8365	Doilies, round, embroidered, with scalloped edge, 8".....	Each	.26
5486	Cotton, darning.....	Spool	.02		Doilies, round, embroidered, with scalloped edge, 10".....	Each	.36
11929	Covers, cushion, embroidered, 20" x 20".....	Each	.33	8366	Doilies, round, embroidered, with scalloped edge, 12".....	Each	.42
11931	Covers, cushion, embroidered, 20" x 20".....	Each	.37		Doilies, round, embroidered, with scalloped edge, 20".....	Each	.91
5592	Cream, cold, Hudnut's.....	Jar	.44	8367	Doilies, round, embroidered, with scalloped edge, 10".....	Each	.30
8172	Cream, cold, Ricksecker's.....	Jar	.40		Doilies, round, embroidered, with scalloped edge, 12".....	Each	.36
9141	Cream, cold, Colgate's.....	Jar	.22	8368	Doilies, round, embroidered, with scalloped edge, 20".....	Each	1.00
11942	Cream, cold, Perfect.....	Tube	.20	8369	Doilies, round, embroidered, with scalloped edge, 4 1/2".....	Each	.15
2467	Cream, dental, Colgate's.....	Tube	.18	8371	Doilies, round, embroidered, with scalloped edge, 6".....	Each	.20
8214	Cream, face, Sanitol.....	Jar	.17		Doilies, round, embroidered, with scalloped edge, 24".....	Each	1.45
6167	Cream, honey and almond.....	Bot.	.37	9191	Doilies, round, embroidered, with scalloped edge, 36".....	Each	2.30
5574	Cream, massage, Pompeian.....	Jar	.32	9192	Doilies, round, embroidered, with scalloped edge, 18".....	Each	.75
8174	Cream, Milkweed, small.....	Bot.	.39	9247	Doilies, round, embroidered, with scalloped edge, 24".....	Each	1.25
8949	Cream, shaving, Colgate's.....	Tube	.16	9283	Doilies, round, embroidered, with scalloped edge, 18".....	Each	.88
11898	Cream, shaving, Williams'.....	Tube	.16	9284	Doilies, round, embroidered, with scalloped edge, 22".....	Each	1.30
7844	Cream, vanishing, Pond's.....	Jar	.19	9533	Doilies, round, embroidered, with scalloped edge, 22".....	Each	1.10
8956	Cream, Violet Sec, Hudnut's.....	Jar	.43	5734	Drawers, men's, elastic, Scriven's.....	Pair	.60
11643	Crepe, checked.....	Yard	.17	5334	Drawers, men's, crepe, white.....	Pair	.35
11642	Crepe, checked.....	Yard	.14	6413	Drawers, men's, Porosknit.....	Pair	.28
11938	Crepe de Chine, 36".....	Yard	.43	7933	Drawers, men's, nainsook.....	Pair	.40
11618	Crepe, fancy.....	Yard	.09	7984	Drawers, men's, sea island.....	Pair	.45
11783	Crepe, fancy.....	Yard	.19	8988	Drawers, men's, B. V. D.....	Pair	.37
11658	Crepe, Fleuret.....	Yard	.25		Dress goods, wash (see Cloth, crepe, Ging-ham, Madras, Organdie, Voile, etc.).		
11392	Crepe, Ilford, white, 30".....	Yard	.11	2432	Drill, white, union.....	Yard	.27
11394	Crepe, K. H. G. white check, 36".....	Yard	.19	5336	Drill, linen, striped.....	Yard	.22
11771	Crepe, M. A. F.....	Yard	.20	5421	Drill, cotton, khaki.....	Yard	.22
11393	Crepe, Malay, white, 36".....	Yard	.16	5435	Drill, cotton, unbleached, 27".....	Yard	.08
11784	Crepe, novelty.....	Yard	.14	5768	Drill, linen, brown, 30".....	Yard	.36
11652	Crepe, Raipur.....	Yard	.17	6399	Drill, linen, striped.....	Yard	.36
9739	Crepe, Serpentine.....	Yard	.14	7697	Drill, linen, bleached, 28".....	Yard	.43
11445	Crepe, white.....	Yard	.41	8796	Drill, cotton, khaki.....	Yard	.17
11395	Crepe, striped, Yawal, 36".....	Yard	.19	8924	Drill, cotton, drab.....	Yard	.28
9773	Crepe, plain white and fancy, "Yeddo".....	Yard	.14	8925	Drill, linen, brown.....	Yard	.26
6152	Cretton, Dresden, draperies.....	Yard	.09	8964	Drill, linen, white.....	Yard	.51
	Cricketer supplies:			11218	Drill, linen, white.....	Yard	.52
11928	Bags.....	Each	4.10	11558	Drill, linen, navy blue.....	Yard	.23
11924	Balls, Grand Prix.....	Each	1.75	11862	Drill, khaki, olive drab, U. S. A.....	Yard	.30
11925	Bats, No. 4.....	Each	4.05	5767	Duck, linen, white.....	Yard	.50
11926	Bats, record.....	Each	5.60	9928	Duck, linen, brown.....	Yard	.40
11923	Books, score.....	Each	1.00	9994	Duck, linen, white.....	Yard	.60
11922	Gloves, batting.....	Pair	2.60		Eau de Cologne (see Perfumes).		
11921	Gloves, wicket keeping.....	Pair	3.25	2436	Elastic, silk.....	Yard	.23
11919	Leg guards.....	Pair	3.10	7584	Elastic, silk, black.....	Yard	.30
11927	Stumps and balls.....	Set	2.60	9313	Elastic, black and white, 3/4".....	Yard	.03
11829	Crimpers, hair.....	Bunch	.06	9314	Elastic, black and white, 1".....	Yard	.05
11848	Cuffs, men's, Arrow, 3 1/4".....	Pair	.21				
11849	Cuffs, men's, Arrow, 4 1/4".....	Pair	.21				
11827	Curlers, kid.....	Pkg.	.15				
11834	Curlers, kid.....	Pkg.	.09				
2439	Curtain, draperies, Reoscrim.....	Yard	.12				
2441	Curtain, draperies, Georgian.....	Yard	.11				
11133	Curtain, etamine.....	Yard	.15				
11681	Curtain, etamine, hemstitched.....	Yard	.20				
8647	Curtain, fish net, green, red, and white.....	Yard	.11				
11638	Curtain, Madras, with drawn work.....	Yard	.17				
11363	Curtain, scrim, plain white, 36".....	Yard	.11				
5451	Curtain, Silkaline.....	Yard	.10				
8817	Curtain, Swiss.....	Yard	.10				
11632	Curtain, Swiss.....	Yard	.13				
6164	Curtains, cotton, ruffled.....	Pair	.85				
11798	Cushions, pin, tomato.....	Each	.04				
11341	Damask, table linen, 72".....	Yard	.72				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
11336	Elastic, black and white, $\frac{1}{4}$ "	Yard	\$0.01	11446	Hats, children's, white drill	Each	\$0.30
11934	Embroidery, allover, 45"	Yard	.52	11715	Hats, children's, straw	Each	.50
11935	Embroidery, allover, 45"	Yard	.92	6425	Hats, ladies', straw	Each	.23
11795	Emeries, strawberry	Each	.04	8678	Hats, ladies', straw	Each	.43
11379	Enamel, nail, Hudnut's	Bot.	.43	11714	Hats, ladies', felt, white	Each	.50
	Envelopes (see Stationery).			2197	Hats, men's, felt, crusher	Each	1.35
	Eradicator, ink (see Stationery).			5931	Hats, men's, straw	Each	2.50
	Erasers (see Stationery).			5934	Hats, men's, straw	Each	2.20
	Extract, eclat (see Perfumes).			8596	Hats, men's, waterproof	Each	.38
5559	Extract, Pond's	Bot.	.19	9177	Hats, men's, waterproof	Each	.50
11293	Fasteners, dress	Doz.	.08	9181	Hats, men's, straw	Each	2.35
11721	Fasteners, snap on tape, white	Yard	.23	9182	Hats, men's, straw	Each	1.70
11722	Fasteners, snap on tape, black	Yard	.23	9258	Hats, men's, Dakota, Stetson	Each	3.80
5994	Files, nail	Each	.05	9259	Hats, men's, Broncho, Stetson	Each	4.25
7337	Flags, American, 6' x 10'	Each	6.05	9449	Hats, men's, U. S. A. pattern, white	Each	.42
5859	Flags, English, 5' x 8'	Each	5.25	9514	Hats, men's, cloth	Each	.90
5858	Flags, French, 4' x 6'	Each	1.65	9848	Hats, men's, cloth	Each	1.40
5861	Flags, French, 5' x 8'	Each	3.05	9937	Hats, men's, felt, Stetson	Each	3.30
5863	Flags, Panama, 5' x 8'	Each	1.85	11161	Hats, men's, felt	Each	1.35
6417	Flags, Panama, 6' x 10'	Each	2.55	11443	Hats, mens, felt, crusher	Each	1.00
5862	Flags, Panama, 8' x 12'	Each	2.80	11493	Hats, men's, cloth	Each	.72
5419	Flannel, Canton	Yard	.14	11556	Hats, men's, felt, Stetson	Each	3.15
5447	Flannel, cream, 36"	Yard	.45	11569	Hats, men's, felt, Army	Each	1.30
8561	Flannel, Welsh Saxony, 26"	Yard	.28	11765	Hats, men's, Palm Beach	Each	.62
11313	Flannel, Fleece-down, 28"	Yard	.08	11774	Hats, men's, Twill, khaki	Each	.45
8892	Floss, dental, 24-yard	Spool	.11	11843	Hats, men's, straw, Bangkok	Each	4.20
9494	Forms, dress, pneumatic	Each	14.70	11936	Hats, men's, straw, China Braid, soft brim	Each	2.20
11874	Forms, dress, adjustable	Each	8.70		Herpicide (see Tonic, hair).		
11468	Garters and arm bands	Set	.32		Holders for hand bottles (see Stationery).		
6492	Garters, Boston, silk	Pair	.35	11796	Hooks, button, nickel plated	Each	.04
8693	Garters, Boston	Pair	.16	11475	Hooks, crochet, steel	Each	.02
5829	Garters, Brighton, silk	Pair	.15	11792	Hooks, crochet, bone	Each	.02
5832	Garters, Brighton, double grip	Pair	.20	5488	Hooks and eyes, white or black	Doz.	.02
9634	Garters, Brighton, double grip	Pair	.36	11455	Hoops, embroidery, round	Each	.04
5833	Garters, Paris, single and double grip	Pair	.35	11456	Hoops, embroidery, oval	Each	.06
9373	Garters, Paris, single and double grip	Pair	.17	9462	Hose, children's, lisle, black	Pair	.20
11912	Garters, Steinway	Pair	.17	9522	Hose, children's, black, white, or tan	Pair	.18
7843	Gauntlets, engineer's	Pair	.85	11299	Hose, children's, white	Pair	.17
11436	Gauntlets, engineer's	Pair	.14	11311	Hose, children's, tan	Pair	.20
6869	Gauze, hospital	Yard	.05	11432	Hose, children's, extra heavy, black	Pair	.22
5424	Gingham, apron, Amoskeag	Yard	.08	11844	Hose, children's, white, pink tops	Pair	.20
5438	Gingham, Chambray, Imperial	Yard	.12	11845	Hose, children's, white, blue tops	Pair	.20
11156	Gingham, Barnaby, Red Seal, or Zephyr, 27"	Yard	.10	8571	Hose, infants', white, with blue or pink tops	Pair	.11
11411	Gingham, Renfrew, 36"	Yard	.17	11592	Hose, infants', silk, black	Pair	.20
11877	Gingham, Patterson	Yard	.08	11595	Hose, infants', silk, white	Pair	.20
	Glasses, shaving (see Mirrors).			11679	Hose, infants', silk, lisle	Pair	.18
	Gloves, batting (see Cricket supplies).			8853	Hose, ladies', silk, Phoenix, assorted colors	Pair	.62
5839	Gloves, engineer's, leather	Pair	.95	9117	Hose, ladies', lisle, black	Pair	.34
11437	Gloves, engineer's, cotton	Pair	.11	9231	Hose, ladies', silk, black	Pair	.42
11366	Gloves, ladies', white, cotton	Pair	.46	9455	Hose, ladies', silk, Phoenix, black, white, or tan	Pair	.90
11466	Gloves, ladies', silk	Pair	.59	11297	Hose, ladies', lisle, white	Pair	.34
9377	Gowns, night, ladies'	Each	.82	11298	Hose, ladies', lisle, tan	Pair	.34
9378	Gowns, night, ladies'	Each	.98	11694	Hose, ladies', lisle, black	Pair	.42
9379	Gowns, night, ladies'	Each	1.15	11695	Hose, ladies', lisle, tan	Pair	.42
9381	Gowns, night, ladies'	Each	1.30	11696	Hose, ladies', lisle, white	Pair	.42
2269	Hammocks	Each	4.00	2481	Hose, men's, black, with white soles	Pair	.18
5531	Hammocks	Each	4.85	9111	Hose, men's, black	Pair	.17
9116	Hammocks	Each	3.35	9248	Hose, men's, Phoenix, assorted colors	Pair	.43
11371	Handkerchiefs, children's	Each	.03	9263	Hose, men's, silk, interwoven, black, white, or tan	Pair	.43
2134	Handkerchiefs, ladies', black border	Each	.20	9454	Hose, men's, Phoenix assorted colors	Pair	.65
5163	Handkerchiefs, ladies', linen, hemstitched	Each	.10	9824	Hose, men's, silk, assorted colors	Pair	.20
11183	Handkerchiefs, ladies', hemstitched, linen, 12" x 12"	Each	.14	11295	Hose, men's, lisle, white	Pair	.17
11511	Handkerchiefs, ladies', linen, embroidered	Each	.10	11296	Hose, men's, lisle, tan	Pair	.17
11512	Handkerchiefs, ladies', linen, embroidered	Each	.16	11593	Hose, men's, lisle, tan, True Shape	Pair	.23
11513	Handkerchiefs, ladies', linen, embroidered	Each	.29	11594	Hose, men's, lisle, black, True Shape	Pair	.23
11514	Handkerchiefs, ladies', linen, embroidered	Each	.35	11597	Hose, men's, lisle, white, True Shape	Pair	.23
11515	Handkerchiefs, ladies', linen, embroidered	Each	.41		Icy Kol (see Tonic, hair).		
11517	Handkerchiefs, ladies', linen, H. S.	Each	.13		Ink (see Stationery).		
5157	Handkerchiefs, men's, linen, H. S.	Each	.14		Ink wells (see Stationery).		
5158	Handkerchiefs, men's, linen, H. S.	Each	.10	11797	Irons, curling	Each	.09
6143	Handkerchiefs, men's, bandana	Each	.04	8318	Jumpers, engineer's	Each	.85
9541	Handkerchiefs, men's, linen, H. S.	Each	.22	11261	Kimonas, crepe	Each	.96
9738	Handkerchiefs, men's, linen, H. S.	Each	.17	11453	Knickerbockers, boys'	Pair	.83
	Hat bands (see Bands).			11586	Knickerbockers, boys'	Pair	.78
9895	Hats, boys', straw	Each	.70	11883	Lace beading, Guipure	Yard	.05
9896	Hats, children's, straw	Each	.25				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
11884	Lace beading, Guipure.....	Yard	\$0.08	11256	Nainsook, cotton, white, 36".....	Yard	\$0.16
11885	Lace beading, Guipure.....	Yard	.11	11257	Nainsook, cotton, white, 36".....	Yard	.20
11886	Lace beading, Guipure.....	Yard	.13	11364	Nainsook, white, 36".....	Yard	.15
11887	Lace beading, Guipure.....	Yard	.15	11365	Nainsook, white, 36".....	Yard	.17
11745	Lace flouncing.....	Yard	.18	5653	Napkins, damask, 24".....	Each	.23
11754	Lace flouncing.....	Yard	.18	9229	Napkins, damask, 22".....	Each	.17
2338	Lace, torchon, linen.....	Yard	.08	9882	Napkins, scalloped, 15".....	Each	.60
2339	Lace, torchon, linen.....	Yard	.13	5652	Napkins, paper, plain white.....	Doz.	.01
2341	Lace, torchon, linen.....	Yard	.16	11526	Napkins, paper, assorted.....	Doz.	.02
2342	Lace, torchon, linen.....	Yard	.19	8768	Napkins, sanitary, 1/2-dozen.....	Box	.17
2345	Lace, torchon, linen.....	Yard	.32	7426	Needles, bodkins, 3".....	Doz.	.07
2346	Lace, torchon, linen.....	Yard	.44	7583	Needles, darning.....	Doz.	.03
9941	Lace, torchon, linen.....	Yard	.04	11474	Needles, embroidery.....	Pkg.	.02
9942	Lace, torchon, linen.....	Yard	.06	11596	Needles, embroidery, 25s.....	Pkg.	.04
7187	Laces, corset.....	Each	.03	9518	Needles, Mitterhauser.....	Case	.09
8934	Laces, corset, 5-yard.....	Pair	.04	7425	Nets, hair, fringe, Tidypwear.....	Each	.09
9711	Laces, corset.....	Each	.10	11833	Nets, hair, Motor.....	Each	.07
11831	Laces, corset, 5-yard.....	Each	.03	11939	Netting, mosquito, white.....	Yard	.07
11832	Laces, corset, 10-yard.....	Each	.07		Nightgowns (see Gowns).....		
11142	Laces, middy blouse.....	Each	.05	9119	Nightshirts, men's.....	Each	1.12
9126	Lawn, black, 40".....	Yard	.16	5575	Oil, Omega, small.....	Bot.	.08
9135	Lawn, Persian, cotton, white, 36".....	Yard	.19	5584	Ointment, carbolic, Calvert's.....	Jar	.24
9136	Lawn, Persian, cotton, white, 36".....	Yard	.12	5992	Ointment, Cuticura.....	Jar	.45
9137	Lawn, Persian, cotton, white, 36".....	Yard	.19	8355	Ointment, Mentholatum.....	Jar	.17
11258	Lawn, Persian, cotton, 36".....	Yard	.13		Ongoline (see Bleach, nail).....		
11259	Lawn, Persian, cotton, 36".....	Yard	.17	11444	Organdy, Chantilly, white, 40".....	Yard	.16
11289	Lawn, checked, cotton, 27".....	Yard	.12	11682	Organdy, colored, 27".....	Yard	.09
11427	Lawn, colored, cotton, 27".....	Yard	.13	11777	Organdy, fancy, 27".....	Yard	.18
11761	Lawn, linen, bleached, 36".....	Yard	.32	5889	Overalls, plain, pin check.....	Pair	.85
11762	Lawn, linen, bleached, 36".....	Yard	.46	6738	Overalls, with apron, Cone's Boss.....	Pair	.85
11822	Lawn, check, cotton, white, 27".....	Yard	.12	11458	Overalls, boys', blue denim.....	Pair	.22
	Leg guards (see Cricket supplies).....			11631	Overalls, with bib, Sweet Orr.....	Pair	1.05
5968	Linen, brown, Holanda Cruda, 31".....	Yard	.20	11937	Overalls, white.....	Pair	.41
7661	Linen, costume, bleached, 36".....	Yard	.22	12184	Pacifiers, baby, No. 26.....	Each	.04
8322	Linen, costume, colored, 36".....	Yard	.29	11815	Pacifiers, baby, No. 75.....	Each	.08
8377	Linen, pillow, 45".....	Yard	.57	11124	Padding, table, quilted, 54".....	Yard	.79
9167	Linen, India, 36".....	Yard	.12		Pads, desk and scratch (see Stationery).....		
9168	Linen, India, 36".....	Yard	.14		Pads, dress (see Shields).....		
9169	Linen, India, 36".....	Yard	.17	5755	Pajamas, Aldine.....	Suit	.95
11614	Linen, sheer, fancy, 27".....	Yard	.18	9412	Pajamas, Morris.....	Suit	.90
11615	Linen, clipped dots, 27".....	Yard	.19	9413	Pajamas, Morris, cotton.....	Suit	1.15
11622	Linen, wide, novelties, 36".....	Yard	.35	9481	Pajamas, Morris.....	Suit	1.35
11623	Linen, wide, novelties, 36".....	Yard	.24	11428	Pajamas, boys'.....	Suit	.59
11671	Linen, sheer, fancy, 27".....	Yard	.14	5723	Pants, running, Spalding.....	Pair	.44
11672	Linen, sheer, fancy, 27".....	Yard	.16	5769	Pants, khaki.....	Pair	1.50
11687	Linen, finish, checks, 27".....	Yard	.11	5785	Pants, duck, white.....	Pair	1.70
11776	Linen, clipped fancy, 27".....	Yard	.15	8566	Pants, running, Spalding.....	Pair	.44
11779	Linen, Marquienne, 27".....	Yard	.18	8736	Pants, working, with belt.....	Pair	.85
11782	Linen, clipped fancy, 27".....	Yard	.19	8944	Pants, riding, khaki.....	Pair	2.15
11239	Links, collar, gold filled.....	Each	.25	9785	Pants, Palm Beach.....	Pair	2.35
9962	Links, cuff, sterling silver.....	Pair	.61		Paper, note (see Stationery).....		
11242	Links, cuff, gold plated.....	Pair	1.30	11491	Parasols, white.....	Each	1.00
11424	Links, cuff, gold plated.....	Pair	.61	11492	Parasols, tan.....	Each	1.35
5979	Listerine, 3-oz.....	Bot.	.17		Paste, library (see Stationery).....		
5981	Listerine, 7-oz.....	Bot.	.34	2466	Paste, tooth, Pebecco.....	Tube	.40
5982	Listerine, 14-oz.....	Bot.	.66	8212	Paste, tooth, Sanitol.....	Tube	.17
	Lotions (see Perfumes).....				Pencils, penholders, and pens (see Stationery).....		
11617	Madras, check, 27".....	Yard	.18	7129	Percal, plain colors, 36".....	Yard	.09
5991	Mats, Turkish bath.....	Each	.76	9255	Percal, Marcelle, assorted patterns, 36".....	Yard	.11
9611	Mats, Turkish bath.....	Each	.51		Perfumes:		
5495	Measures, tape.....	Each	.03	5597	Extract, quadruple, Hudnut's.....	Bot.	.66
11794	Measures, tape, nickel.....	Each	.13	5599	Colgate's, 2-oz.....	Bot.	.58
9525	Mentico, P. C.....	Bot.	.25	6754	Colgate's, 1-oz.....	Bot.	.39
5811	Mirrors, stand.....	Each	.95	8885	Triple extract.....	Bot.	.19
6434	Mirrors, stand.....	Each	.61	8886	Lotions, assorted, Piver's.....	Bot.	.47
8394	Mitts, Turkish bath.....	Pair	.26	8879	Assorted, Piver's.....	Bot.	.76
	Molds, button (see Buttons).....			9139	Extract, Eclat, No. 25, Colgate's.....	Bot.	.70
11344	Mousseline, fancy, 27".....	Yard	.16	9159	Eau de Cologne.....	Bot.	.23
9776	Mum, toilet preparation.....	Jar	.19	9161	Eau de Cologne.....	Bot.	.14
5441	Muslin, fruit of the loom 36".....	Yard	.10	11854	Extract, Eclat, No. 15.....	Bot.	.47
5468	Muslin, unbleached, 36".....	Yard	.08		Pillow cases (see Cases).....		
9527	Muslin, Indian head, 36".....	Yard	.14	2429	Pins, hair, celluloid.....	Doz.	.21
11639	Muslin, twilled, 36".....	Yard	.13	5487	Pins, hair, wire.....	Box	.06
11818	Muslin, dotted, 27".....	Yard	.16	6168	Pins, common.....	Book	.05
11823	Muslin, embroidered, 27".....	Yard	.21	7732	Pins, Princess.....	Book	.05
2442	Nainsook, plain, 36".....	Yard	.11	8692	Pins, safety, Ascot.....	Each	.07
7582	Nainsook, check, 27".....	Yard	.10	8989	Pins, safety, Duplex, No. 2 1/2.....	Doz.	.05



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
8991	Pins, safety, Duplex, No. 3.....	Doz.	\$0.06	11872	Ribbon, taffeta, tango and copper.....	Yard	\$0.14
11318	Pins, safety, bright, No. 1.....	Card	.03	11888	Ribbon, fancy.....	Yard	.08
11319	Pins, safety, bright, No. 2.....	Card	.04	11889	Ribbon, fancy.....	Yard	.05
11476	Pins, mourning.....	Box	.01	11891	Ribbon, fancy.....	Yard	.12
11479	Pins, hat.....	Each	.38	11892	Ribbon, fancy.....	Yard	.15
9849	Pique, white, 27".....	Yard	.16	11893	Ribbon, fancy.....	Yard	.23
11237	Pique, vesting.....	Yard	1.96	11894	Ribbon, fancy.....	Yard	.30
11288	Pique, white, 27".....	Yard	.22	11895	Ribbon, fancy.....	Yard	.44
11645	Pique, warp wets.....	Yard	.24	8142	Robes, ladies', embroidered linen, with blouse to match.....	Each	5.20
7154	Polish, nail, Marv, Hudnut's.....	Bot.	.22	11532	Robes, bath, men's, Turkish.....	Each	5.10
9267	Poplin, assorted colors, 27".....	Yard	.18	11562	Robes, bath, men's, Terry cloth.....	Each	2.95
11941	Poplin, Peerless, 27".....	Yard	.17	9369	Rompers, children's.....	Each	.45
5582	Powder, talcum, Colgate's.....	Tin	.13	9656	Rompers, children's.....	Each	.45
5619	Powder, talcum, Hudnut's.....	Tin	.22	11836	Rugs, steamer, wool.....	Each	4.50
5626	Powder, face, La Blanche.....	Box	.41	8819	Salts, smelling.....	Bot.	.22
5634	Powder, tooth, Euthymol.....	Tin	.16	8177	Salve, Witch Hazel.....	Jar	.10
5638	Powder, talcum, Mennen's.....	Tin	.13	9562	Sateen, No. 90.....	Yard	.16
5639	Powder, tooth, carbolie, small.....	Tin	.09	9922	Serge, black.....	Yard	2.40
5647	Powder, tooth, Lyon's.....	Tin	.19	9923	Serge, black.....	Yard	2.00
6287	Powder, tooth, Colgate's.....	Tin	.13	11232	Serge, black.....	Yard	2.70
7156	Powder, face, Hudnut's.....	Pkg.	.43	11267	Serge, black.....	Yard	2.65
8213	Powder, tooth, Sanitol.....	Tin	.17	9557	Serge, blue.....	Yard	1.95
9347	Powder, talcum, P. C.....	Tin	.12	9571	Serge, blue, white stripe.....	Yard	1.90
11873	Powder, tooth, carbolie, medium.....	Tin	.18	9969	Serge, blue.....	Yard	3.25
11448	Powder, rice, face, Piver's.....	Pkg.	.56	9999	Serge, blue.....	Yard	2.60
11668	Powder, sachet, Piver's.....	Bot.	.31	11266	Serge, blue.....	Yard	2.75
11878	Presses, racquet.....	Each	.60	9721	Serge, cream.....	Yard	2.00
7731	Puffs, powder.....	Each	.29	9926	Serge, cream.....	Yard	1.40
11338	Puffs, powder.....	Each	.22	11234	Serge, gray.....	Yard	2.70
11339	Puffs, powder.....	Each	.23	11262	Serge, gray.....	Yard	2.75
	Quilts (see Bedspreads).			11573	Serge, gray.....	Yard	2.00
11599	Rackets, tennis.....	Each	1.10	11489	Serge, striped, herringbone.....	Yard	2.55
11611	Rackets, tennis.....	Each	6.60	11347	Sets, table, linen damask, 1 cloth 45", 6 napkins 15".....	Set	6.50
11816	Rattles, celluloid.....	Each	.10	11461	Sets, table, linen, 1 cloth 72", 12 napkins 22".....	Set	4.15
5857	Razorine.....	Pkg.	.11	11462	Sets, table, linen, 1 cloth 72" by 90", 12 napkins 22".....	Set	4.60
5118	Ribbon, taffeta, No. 9.....	Yard	.08	11463	Sets, table, linen, 1 cloth 72" by 108", 12 napkins 26".....	Set	5.75
5152	Ribbon, taffeta, No. 5.....	Yard	.05		Shades, eye (see Stationery).		
8741	Ribbon, satin, Seal, No. 2.....	Yard	.03	9651	Shampoo, liquid, Sanitol, small.....	Bot.	.17
8745	Ribbon, satin, Seal, No. 3.....	Yard	.04	5442	Sheeting, linen.....	Yard	.78
8746	Ribbon, satin, Jupiter, No. 5.....	Yard	.07	7139	Sheeting, linen, 80".....	Yard	.78
8747	Ribbon, satin, Jupiter, No. 7.....	Yard	.09	11758	Sheeting, linen, bleached, 90".....	Yard	1.20
8748	Ribbon, satin, Jupiter, No. 9.....	Yard	.10	9916	Sheeting, rubber, white, 4/4.....	Yard	.39
8749	Ribbon, satin, Exposition, No. 22.....	Yard	.11	9917	Sheeting, rubber, white, 5/4.....	Yard	.55
8751	Ribbon, satin, Exposition, No. 40.....	Yard	.12	9918	Sheeting, rubber, white, 6/4.....	Yard	.63
8752	Ribbon, satin, Exposition, No. 60.....	Yard	.15	5478	Sheets, bed, cotton, 90" x 90".....	Each	.80
8891	Ribbon, satin, Exposition, No. 80.....	Yard	.18	5479	Sheets, bed, cotton, 54" x 90".....	Each	.50
8912	Ribbon, taffeta, No. 16.....	Yard	.10	5481	Sheets, bed, cotton, 72" x 90".....	Each	.75
9618	Ribbon, taffeta, No. 80.....	Yard	.25	11928	Sheets, H. S., linen, 72" x 108".....	Pair	7.10
9857	Ribbon, taffeta, No. 5.....	Yard	.05	11933	Sheets, H. S., linen, 90" x 117".....	Pair	6.90
9858	Ribbon, taffeta, No. 7.....	Yard	.06	9575	Shields, garment.....	Each	.20
9859	Ribbon, taffeta, No. 9.....	Yard	.08	11471	Shields, dress, No. 2.....	Pair	.14
9913	Ribbon, Seal, No. 1 1/2.....	Yard	.02	11472	Shields, dress, No. 3.....	Pair	.15
11186	Ribbon, velvet, black, No. 3.....	Yard	.03	11673	Shields, dress, No. 2.....	Pair	.20
11187	Ribbon, velvet, black, No. 5.....	Yard	.05	11674	Shields, dress, No. 3.....	Pair	.22
11188	Ribbon, velvet, black, No. 7.....	Yard	.07	11675	Shields, dress, No. 4.....	Pair	.24
11189	Ribbon, velvet, black, No. 9.....	Yard	.08	11839	Shirting, Madras, 32".....	Yard	.24
11191	Ribbon, velvet, black, No. 12.....	Yard	.10	2435	Shirts, men's, Royal Blue.....	Each	.85
11192	Ribbon, velvet, black, No. 16.....	Yard	.12	5681	Shirts, men's, full dress.....	Each	1.60
11193	Ribbon, velvet, black, No. 20.....	Yard	.12	8511	Shirts, men's, Windsor.....	Each	.75
11194	Ribbon, velvet, black, No. 22.....	Yard	.17	8968	Shirts, men's, white, plaited.....	Each	1.60
11195	Ribbon, velvet, black, No. 30.....	Yard	.22	8995	Shirts, men's, Manhattan.....	Each	1.70
11263	Ribbon, satin, white, No. 22.....	Yard	.24	9261	Shirts, men's, soft, with detached collar.....	Each	.70
11274	Ribbon, satin, red, No. 1.....	Piece	.06	9198	Shirts, men's, khaki.....	Each	.88
11275	Ribbon, satin, red, No. 1 1/2.....	Piece	.11	9666	Shirts, men's, khaki, wool.....	Each	2.60
11459	Ribbon, satin, No. 8.....	Yard	.29	9716	Shirts, men's, Arab, white.....	Each	.70
11478	Ribbon, moire, No. 80.....	Yard	.11	9995	Shirts, men's, wool.....	Each	2.15
11625	Ribbon, velvet, Aberdeen, 1 1/8".....	Yard	.02	11145	Shirts, men's, negligee, Manhattan.....	Each	1.40
11626	Ribbon, velvet, Aberdeen, 1 1/2".....	Yard	.03	11164	Shirts, men's, blue, chambray.....	Each	.45
11697	Ribbon, taffeta, assorted, No. 60.....	Yard	.09	11351	Shirts, men's, negligee, E. & W.....	Each	1.10
11698	Ribbon, taffeta, assorted, No. 80.....	Yard	.10	11378	Shirts, men's, wool, U. S. A.....	Each	3.00
11699	Ribbon, satin, flowered, No. 60.....	Yard	.10	11583	Shirts, men's white dress, thousand plaited.....	Each	1.70
11711	Ribbon, satin, flowered, No. 80.....	Yard	.11	11584	Shirts, men's white dress, thousand plaited.....	Each	2.85
11712	Ribbon, satin, taffeta, No. 60.....	Yard	.10	11769	Shirts, men's, black sateen.....	Each	.41
11713	Ribbon, taffeta, No. 80.....	Yard	.13				
11716	Ribbon, taffeta, No. 60.....	Yard	.31				
11717	Ribbon, taffeta, No. 80.....	Yard	.41				
11871	Ribbon, taffeta, tango and copper.....	Yard	.13				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
11835	Shirts, men's, blue chambray.....	Each	\$0.80		Stationery.—Continued.		
11851	Shirts, men's, negligee, no collar.....	Each	1.30	7235	Pens, fountain, No. 2.....	Each	\$1.40
11852	Shirts, men's, white, no collar.....	Each	1.55	7236	Pens, fountain, No. 6.....	Each	2.05
11856	Shirts, men's, negligee, with collar.....	Each	1.30	7237	Pens, fountain, No. 9.....	Each	2.75
5988	Skins, chamois, 15" x 20".....	Each	.31	7238	Pens, fountain, No. 20.....	Each	1.70
7389	Skins, chamois, face.....	Each	.09	7239	Pens, fountain, No. 21.....	Each	2.40
5329	Soap, Turkish bath.....	Cake	.04	11917	Pens, fountain, No. 20, self-filling.....	Each	1.80
5561	Soap, tar, Packers.....	Cake	.18	35318	Shades, eye.....	Each	.15
5562	Soap, glycerine, Pears.....	Cake	.16	35319	Tacks, thumb.....	Doz.	.06
5565	Soap, sulphur, Pears.....	Cake	.08	35322	Wax, sealing.....	Stick	.09
5566	Soap, Attar of Rose, Pears.....	Cake	.45	7152	Sticks, manicure.....	Each	.04
5572	Soap, Bay Rum.....	Cake	.07	11362	Straps, jockey, The Bike.....	Each	.44
5573	Soap, Prickly Heat.....	Cake	.07	11875	Straps, jockey, Nuform.....	Each	.30
5576	Soap, Cuticura.....	Cake	.23	5622	Strops, razor, Torrey's.....	Each	.49
5581	Soap, Cashmere Bouquet, small.....	Cake	.10	7264	Strops, razor, Army and Navy.....	Each	.98
5585	Soap, unscented, Pears.....	Cake	.09	7774	Strops, razor, Nevahone.....	Each	1.20
5611	Soap, Pumex.....	Cake	.05	11846	Strops, safety razor, Nevahone.....	Each	1.30
5617	Soap, Golf Queen.....	Cake	.18	11534	Studs, shirt, gold plate 1.....	Set	.46
5635	Soap, shaving, stick, Colgate's.....	Stick	.16		Stumps and balls (see Cricket supplies).		
5641	Soap, shaving, Colgate's.....	Cake	.04	9153	Suiting, tweed.....	Yard	2.80
5643	Soap, shaving, Williams'.....	Stick	.16	9535	Suiting, tweed.....	Yard	2.40
5646	Soap, Violet Sec.....	Cake	.22	9536	Suiting, tweed.....	Yard	2.05
6463	Soap, Cashmere Bouquet, large.....	Cake	.19	9554	Suiting, tweed.....	Yard	2.65
6464	Soap, liquid green, Hudnut's.....	Bot.	.44	9556	Suiting, tweed.....	Yard	3.40
8947	Soap, Maxine Elliott.....	Cake	.08	9658	Suiting, flannel, fancy.....	Yard	1.75
9789	Soap, Bouquet, No. 11.....	Cake	.08	9967	Suiting, tweed.....	Yard	2.10
11374	Soap, Milkweed Cream.....	Cake	.19	9971	Suiting, tweed, fancy.....	Yard	2.40
11676	Soap, castile.....	Lb.	.10	11167	Suiting, silk.....	Yard	1.75
11677	Soap, castile.....	Cake	.13	11219	Suiting, union.....	Yard	.24
11678	Soap, hotel, P. R. R.....	Cake	.03	11231	Suiting, blue, herringbone.....	Yard	2.50
11881	Soap, Facial, Woodbury's.....	Cake	.20	11294	Suiting, silk.....	Yard	1.75
5621	Sponges, rubber, Feather Edge.....	Each	.39	11575	Suiting, flannel.....	Yard	2.25
9299	Sponges, rubber, No. 5.....	Each	.50	11576	Suiting, flannel.....	Yard	2.45
9324	Sponges, rubber, J. I. C.....	Each	.36	11598	Suiting, Osnaburg flour sacks.....	Each	.19
11435	Sponges, rubber.....	Each	.43	9798	Suits, bathing, boys'.....	Suit	.92
	Spreads, bed (see Bedspreads).			7489	Suits, bathing, ladies'.....	Suit	3.95
	Stationery:			9199	Suits, bathing, ladies' and misses'.....	Suit	1.85
9336	Albums, postcard.....	Each	1.65	9213	Suits, bathing, ladies' and misses'.....	Suit	2.65
35323	Blotters, desk, large.....	Each	.03	11315	Suits, bathing, ladies'.....	Suit	3.30
35297	Blotters, hand, 25s.....	Pkg.	.04	11324	Suits, bathing, ladies'.....	Suit	3.95
35326	Books, memo, indexed.....	Each	.17	11786	Suits, bathing, ladies'.....	Suit	3.00
9384	Cards, correspondence.....	Box	.07	7161	Suits, bathing, men's.....	Suit	3.20
5691	Cards, playing, Panama.....	Pkg.	.30	7162	Suits, bathing, men's.....	Suit	2.40
9113	Cards, playing, Bicycle.....	Pkg.	.11	9952	Suits, Palm Beach, silk.....	Suit	10.30
9813	Cards, playing, Pinochle.....	Pkg.	.10	11853	Suits, sleeping.....	Suit	.90
35321	Clips, Gem.....	Box	.03	11112	Suits, union, ladies', lisle.....	Suit	1.10
9173	Envelopes, linen, Highland.....	Box	.58	11521	Suits, union, ladies'.....	Suit	.42
9176	Envelopes, linen, Belmar.....	Box	.51	11791	Suits, union, ladies'.....	Suit	.38
11352	Envelopes, size 10.....	Pkg.	.02	9227	Suits, union, men's, B. V. D., cotton.....	Suit	.77
35298	Eradicator, ink.....	Set	.19	11522	Suits, union, men's, Porosknit.....	Suit	.63
35311	Erasers, ink and pencil.....	Each	.04	9997	Suits, white duck.....	Suit	6.09
35299	Erasers, rubber, red.....	Each	.05	8217	Supports, collar.....	Set	.06
35325	Holders, hand blotter.....	Each	.31	11719	Supports, collar.....	Set	.04
6432	Ink, Carter's, 2-oz.....	Bot.	.03	8734	Supporters, hose, children's.....	Pair	.16
7773	Ink, fountain pen.....	Bot.	.17	9815	Supporters, hose, ladies', bathing.....	Pair	.22
35294	Ink wells, glass, single.....	Each	.06	11412	Supporters, hose, ladies'.....	Pair	.46
35295	Ink wells, glass, double.....	Each	.21	5822	Suspenders, men's, President.....	Pair	.38
35296	Pads, desk.....	Each	.76	7165	Suspenders, men's, Pioneer.....	Pair	.44
35313	Pads, scratch, 3" x 5".....	Each	.01	11127	Suspenders, men's, No. 49.....	Pair	.27
35327	Pads, scratch, 5" x 8".....	Each	.02	11128	Suspenders, men's.....	Pair	.48
35314	Pads, ruled, 8" x 10".....	Each	.04	11789	Suspenders, men's, Guyot.....	Pair	.44
9172	Paper, note, linen, Highland.....	Box	.38	5437	Swiss, dotted, white.....	Yard	.11
9174	Paper, note, linen, Belmar.....	Box	.27	8917	Swiss, dotted.....	Yard	.12
5651	Paper, writing, with envelopes.....	Box	.24	9812	Swiss, dotted, Torquay.....	Yard	.20
5937	Paper, writing, with envelopes.....	Box	.11	9825	Syringes, ear.....	Each	.10
5938	Paper, writing.....	Pkg.	.18	7268	Syringes, fountain, combination.....	Each	1.55
9385	Papeteries, with envelopes.....	Box	.18	9826	Syringes, nasal.....	Each	.13
6448	Paste, library, 2-oz.....	Bot.	.03		Tacks, thumb (see Stationery).		
35328	Pencils, Kohinor, H. H. H. H.....	Each	.09	5168	Tape, twilled, English, $\frac{1}{2}$ and $\frac{3}{4}$ .....	Piece	.06
35324	Pencils, copying.....	Each	.07	5169	Tape, twilled, English, $\frac{1}{2}$ , $\frac{3}{4}$ , and $1$ .....	Piece	.05
35317	Pencils, Dixon's.....	Each	.02½	9115	Tape, twilled, English, 1".....	Piece	.09
35316	Pencils, No. 2.....	Each	.01½	11483	Tape, bias, lawn, No. 3, 12-yard.....	Piece	.08
35315	Pencils, Kohinor, H. B.....	Each	.09	11484	Tape, bias, lawn, No. 4, 12-yard.....	Piece	.09
35312	Penholders, cork tip.....	Each	.03	11485	Tape, bias, lawn, No. 5, 12-yard.....	Piece	.10
11367	Pen points, stub.....	Doz.	.05	11486	Tape, bias, lawn, No. 6, 12-yard.....	Piece	.11
11368	Pen points, Falcon.....	Doz.	.05	11487	Tape, bias, lawn, No. 7, 12-yard.....	Piece	.12
7234	Pens, fountain, No. 1.....	Each	1.05	11488	Tape, bias, lawn, No. 8, 12-yard.....	Piece	.13

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
11494	Tape, bias, linen, No. 3, 6-yard.....	Piece	\$0.08	11864	Towels, diaper, scalloped edge and embroidered, 15" x 24".....	Each	\$0.41
11495	Tape, bias, linen, No. 4, 6-yard.....	Piece	.09	11865	Towels, huck, H. S., embroidered, 15" x 24".....	Each	.30
11496	Tape, bias, linen, No. 5, 6-yard.....	Piece	.10	11866	Towels, huck, H. S., embroidered, 15" x 24".....	Each	.29
11497	Tape, bias, linen, No. 6, 6-yard.....	Piece	.12	8512	Umbrellas, 28".....	Each	.89
11498	Tape, bias, linen, No. 7, 6-yard.....	Piece	.13	8514	Umbrellas, ladies', 26".....	Each	1.40
11499	Tape, bias, linen, No. 8, 6-yard.....	Piece	.14	8515	Umbrellas, ladies', 26".....	Each	1.95
11723	Tape, lingerie, assorted colors.....	Piece	.08	8876	Umbrellas, cotton.....	Each	1.40
6794	Thimbles, aluminum.....	Each	.01	8877	Umbrellas, cotton.....	Each	2.40
11793	Thimbles, sterling silver.....	Each	.33	9193	Umbrellas, men's, 26 1/2".....	Each	1.20
5489	Thread, silk, Richardsons.....	Spool	.04	9194	Umbrellas, children's, taffeta.....	Each	.75
5788	Thread, Clark's, Anchor, black and white.....	Spool	.07	9689	Umbrellas, ladies', 26".....	Each	1.50
5789	Thread, khaki.....	Spool	.07	9744	Umbrellas, men's.....	Each	1.50
7429	Thread, Sansilk, assorted colors.....	Spool	.04	9886	Umbrellas, men's, silk.....	Each	2.80
8146	Thread, silk, embroidery.....	Spool	.03	11387	Umbrellas, men's, 30".....	Each	1.30
9245	Thread, silk, buttonhole.....	Spool	.02	11519	Umbrellas, ladies', 26".....	Each	.68
9949	Thread, linen, white.....	Spool	.14	11523	Umbrellas, ladies', 28".....	Each	.93
9951	Thread, linen, white.....	Spool	.11	5819	Undershirts, short sleeves.....	Each	.18
11943	Thread, linen, Barbour's.....	Spool	.10	6459	Undershirts, Porosknit.....	Each	.36
5474	Ticking, bed.....	Yard	.19	6461	Undershirts, Sea Island.....	Each	.37
5609	Ties, silk, four-in-hand.....	Each	.39	7727	Undershirts, gauze.....	Each	.34
5711	Ties, batwing.....	Each	.35	7727	Undershirts, Sea Island.....	Each	.44
8233	Ties, bow, white, dress.....	Each	.24	7981	Undershirts, Athletic.....	Each	.41
9427	Ties, four-in-hand.....	Each	.45	8567	Undershirts, B. V. D.....	Each	.37
9428	Ties, four-in-hand.....	Each	.39	9425	Underwaists, boys' and girls'.....	Each	.24
9434	Ties, batwing, silk.....	Each	.34	5615	Vaseline, white, perfumed.....	Bot.	.19
9655	Ties, four-in-hand.....	Each	.43	5616	Vaseline, white.....	Bot.	.14
9677	Ties, four-in-hand.....	Each	.38	9253	Vaseline, white, perfumed.....	Tube	.08
9817	Ties, club, pointed end.....	Each	.18	11911	Vaseline, carbolated.....	Bot.	.07
9976	Ties, black teck.....	Each	.41	2399	Vests, ladies', gauze.....	Each	.23
9977	Ties, black teck.....	Each	.45	6667	Vests, ladies', gauze.....	Each	.14
9979	Ties, black teck.....	Each	.25	11386	Vests, ladies', Cumly Cut.....	Each	.21
9984	Ties, Scotch plaid.....	Each	.24	11763	Vests, ladies'.....	Each	.25
9986	Ties, Windsor, black.....	Each	.20	11764	Vests, ladies'.....	Each	.28
9988	Ties, Windsor, polka dot.....	Each	.25	11451	Voile.....	Yard	.17
11381	Ties, four-in-hand.....	Each	.44	11547	Voile, embroidered.....	Yard	.59
11382	Ties, batwing.....	Each	.37	11559	Voile, Hedsor.....	Yard	.21
11429	Ties, batwing.....	Each	.33	11561	Voile, dashed.....	Yard	.18
11718	Ties, middy blouse.....	Each	.80	11568	Voile, dashed, colored.....	Yard	.21
11724	Ties, wash, four-in-hand.....	Each	.22	11579	Voile, seed, white.....	Yard	.19
11847	Ties, batwing.....	Each	.17	11624	Voile, fancy.....	Yard	.27
11882	Ties, silk, four-in-hand, with ring.....	Each	.36	11648	Voile, Harston.....	Yard	.37
1916	Tonic, hair, Herpicide, large.....	Bot.	.77	11649	Voile, shadow stripe.....	Yard	.21
1932	Tonic, hair, Auxiliator, large.....	Bot.	.52	11653	Voile, chiffon check.....	Yard	.20
1933	Tonic, hair, Auxiliator, small.....	Bot.	.24	11688	Voile, splashed.....	Yard	.18
2196	Tonic, hair, Icy Kol.....	Bot.	.20	11689	Voile, splashed.....	Yard	.16
6166	Tonic, hair, Cardinal, Eau de quinine, Hudnut's, 4 1/2-oz.....	Bot.	.45	11767	Voile, ratine, bordered.....	Yard	.24
7147	Tonic, hair, brilliantine.....	Bot.	.43	11768	Voile, reception.....	Yard	.21
7195	Tonic, hair, Eau de quinine, Pinaud's, 8-oz.....	Bot.	.50	11785	Voile, novelty.....	Yard	.19
8764	Tonic, hair, Herpicide, small.....	Bot.	.42	11819	Voile, mercerized.....	Yard	.23
	Tooth wash (see Wash).....			11837	Voile, embroidered.....	Yard	.42
2262	Towelling, huckaback, 22".....	Yard	.39	11838	Voile, mercerized.....	Yard	.27
5463	Towelling, crash, 17".....	Yard	.19	11839	Voile, embroidered.....	Yard	.23
5464	Towelling, glass, 17".....	Yard	.15	11897	Voile, reception.....	Yard	.20
7696	Towelling, huckaback, 25".....	Yard	.44	11914	Voile, corded.....	Yard	.24
8699	Towelling, huckaback, 15".....	Yard	.27	11915	Voile, Kabul.....	Yard	.15
2267	Towels, barber's.....	Each	.07	11916	Voile, Gaberdine.....	Yard	.21
6155	Towels, Turkish, bleached.....	Each	.19	5557	Wash, tooth, Rubifoam.....	Bot.	.19
8649	Towels, diaper, H. S., embroidered, 15" x 24".....	Each	.32	5977	Wash, tooth, Glyco-Thymoline.....	Bot.	.23
8652	Towels, huckaback, embroidered, 15" x 24".....	Each	.41	5987	Wash, tooth, Sodont.....	Bot.	.17
8788	Towels, glass.....	Each	.17	9579	Wash, tooth, Dentifrice, Odol.....	Bot.	.43
8789	Towels, huck, linen, 17" x 34".....	Each	.13	5983	Water, Florida.....	Bot.	.30
9187	Towels, huck, linen, 24" x 42".....	Each	.26	6484	Water, toilet, Hudnut's.....	Bot.	.68
9468	Towels, T. B., white, 26" x 48".....	Each	.38	8328	Water, toilet, Pinaud's.....	Bot.	1.75
9595	Towels, embroidered, 15" x 24".....	Each	.23	8887	Water, toilet, Piver's.....	Bot.	.67
9596	Towels, huck, H. S., 20" x 40".....	Each	.32	8948	Water, toilet, Williams'.....	Bot.	.43
9769	Towels, T. B., white, 30" x 60".....	Each	.74	9142	Water, toilet, Colgate's, 3-oz.....	Bot.	.38
9899	Towels, T. B., 20" x 42".....	Each	.17	9143	Water, toilet, Colgate's, 5-oz.....	Bot.	.49
11181	Towels, T. B., 24" x 44".....	Each	.33	11828	Wavers, hair.....	Box	.04
11264	Towels, T. B., 24" x 42".....	Each	.25		Wax, sealing (see Stationery).....		
11425	Towels, T. B., 24" x 45".....	Each	.34	9422	Witch Hazel, P. C.....	Bot.	.20
11551	Towels, T. B., 24" x 44".....	Each	.43	11549	Wrappers, infants'.....	Each	.21
11863	Towels, huck, H. S., embroidered, 15" x 24".....	Each	.36	5721	Yardsticks.....	Each	.12



## RECEIPTS AND EXPENSES.

Tolls Exceeded Cost of Operation and Maintenance in July but Were Less in August.

During the month of August, for the first time since February, the cost of the items charged to operation and maintenance of the Canal was more than the amount of the tolls collected on vessels making use of the Canal. The deficit amounted to \$63,177.33.

This reduced the excess of tolls over expenses for the present fiscal year from \$117,570.09 at the end of July to \$54,392.76 at the end of August.

A summary of the charges for operation and maintenance for July and August, in comparison with the month of August last year, is given below. It will be noted that the charges for dredging in Gaillard Cut

during August were nearly half of the total expense of operation and maintenance.

A concrete floor is to be installed in the roundhouse at Cristobal, underneath the roundhouse machinery, in place of the old wooden floor. This change is to be made on account of the rotten and unsanitary condition of the wooden floors.

ITEMS.	August, 1915.	July, 1915.	Same month last year.	Fiscal Year to Date.	
				This year.	Last year.
Civil government, proportion.....	\$35,081.45	\$34,870.18	\$17,629.51	\$69,951.63	\$31,941.73
Health Department, proportion.....	35,663.79	40,930.16	21,705.86	79,593.95	28,018.06
Administration, proportion.....	129,831.58	117,223.07	40,557.17	247,056.65	87,633.19
Operation and maintenance:					
Admeasurement of vessels.....	1,927.40	904.93	496.11	1,868.33	821.07
Local inspection.....	1,273.46	237.40	239.72	530.86	585.03
Aids to navigation.....	3,593.34	3,802.55	4,325.37	7,395.98	8,897.45
Pilotage.....	6,835.24	7,000.26	1,872.71	13,845.50	2,015.33
Damages to vessels.....	365.61	171.89	.....	537.30	.....
Maintenance of tug and barge trucks.....	1,028.03	1,481.83	1,457.28	3,099.33	1,492.88
Operation of harbor tugs—balance.....	2,088.86	3,566.89	.....	5,655.75	.....
Total, Marine Division.....	\$15,691.94	\$17,221.74	\$8,411.99	\$32,913.65	\$13,811.76
Gatun Locks:					
Superintendence.....	1,134.90	\$1,319.20	\$2,023.58	2,514.10	2,744.06
Operation.....	9,878.21	8,926.33	6,696.74	18,584.54	13,546.28
Maintenance of operating machinery and equipment.....	1,150.28	3,186.41	1,947.74	4,336.45	3,072.54
Maintenance and care of emergency dams.....	694.22	597.81	1,472.42	1,292.03	2,452.99
Maintenance of gates.....	21,581.10	4,152.65	328.46	25,733.75	999.02
Maintenance of valves.....	7,454.71	2,182.06	101.82	9,646.77	198.32
Maintenance of towing track system.....	118.00	1,821.14	.....	1,969.42	.....
Maintenance of towing locomotives, lines, and hawsers.....	554.41	1,954.00	861.43	2,508.07	1,387.31
Maintenance of lighting and telephone system.....	185.70	156.86	720.37	342.56	720.37
Maintenance of power control and lighting cables.....	4.45	.....	.....	4.45	.....
Maintenance of structures.....	224.83	774.81	1,075.25	1,608.55	1,331.87
Maintenance of backfill.....	20.96	.....	.....	247.01	.....
Miscellaneous supplies and expenses.....	361.05	114.09	333.15	475.14	454.78
Total, Gatun Locks.....	\$43,421.83	\$25,421.41	\$15,550.96	\$68,843.24	\$26,900.24
Gatun Spillway:					
Operation.....	70.89	87.03	153.53	157.92	280.12
Maintenance of operating machinery and equipment.....	20.73	43.40	721.36	64.13	721.36
Maintenance of caissons.....	15.02	65.63	298.70	80.65	667.09
Maintenance of structures.....	85.08	.....	15.10	83.08	15.10
Total, Gatun Spillway.....	\$191.72	\$196.06	\$1,188.69	\$387.78	\$1,683.63
Gatun Dam, maintenance.....	\$2,045.33	\$2,261.83	\$2,098.13	\$4,307.16	\$2,098.13
Pedro Miguel Lock:					
Superintendence.....	1,573.84	1,522.05	1,094.01	3,095.89	1,426.94
Operation.....	6,224.63	6,633.65	9,155.80	12,858.29	15,170.30
Maintenance of operating machinery and equipment.....	1,790.67	1,644.58	643.32	3,345.25	942.47
Maintenance and care of emergency dams.....	561.31	596.69	1,233.27	1,169.91	1,656.84
Maintenance of gates.....	1,039.37	1,151.05	365.76	2,169.42	674.26
Maintenance of valves.....	153.77	123.32	77.56	276.09	77.56
Maintenance of towing track system.....	419.95	267.76	41.78	637.71	41.78
Maintenance of towing locomotives, lines, and hawsers.....	796.52	896.26	161.60	1,692.78	248.10
Maintenance of lighting and telephone system.....	290.61	314.39	654.27	678.49	678.49
Maintenance of structures.....	1,101.62	749.54	716.30	1,851.16	720.83
Maintenance of backfill.....	747.85	.....	.....	747.85	34.06
Miscellaneous supplies and expenses.....	222.99	212.32	211.93	435.31	236.99
Total, Pedro Miguel Lock.....	\$14,939.98	\$14,180.12	\$14,343.60	\$29,120.10	\$21,910.53
Miraflores Locks:					
Superintendence.....	1,634.64	1,419.68	1,946.48	3,074.32	1,790.76
Operation.....	7,863.89	8,066.10	9,645.22	15,939.99	18,485.25
Maintenance of operating machinery and equipment.....	1,277.87	1,183.34	1,235.22	2,460.21	1,926.07
Maintenance and care of emergency dams.....	454.93	360.35	826.84	815.28	1,325.66
Maintenance of gates.....	998.37	778.02	265.24	1,776.39	1,087.18
Maintenance of valves.....	.....	1,384.44	638.76	1,384.44	630.76
Maintenance of towing track system.....	554.42	164.79	.....	719.21	18.88
Maintenance of towing locomotives, lines, and hawsers.....	450.83	737.38	.....	1,218.21	268.54
Maintenance of lighting and telephone system.....	290.61	147.28	337.35	433.89	337.35
Maintenance of structures.....	1,012.62	677.43	682.49	1,700.11	656.15
Maintenance of backfill.....	202.70	.....	.....	202.70	.....
Miscellaneous supplies and expenses.....	346.09	196.34	328.65	542.43	417.76
Total, Miraflores Locks.....	\$15,106.97	\$13,894.61	\$15,008.45	\$29,001.58	\$26,954.42
Miraflores Spillway and east dam:					
Operation.....	46.09	.....	382.93	46.09	633.84
Maintenance of operating machinery and equipment.....	43.47	40.98	1,439.80	93.05	2,618.05
Maintenance of gates and caissons.....	.....	284.61	.....	.....	306.94
Maintenance of structures.....	.....	42.25	3.69	42.25	78.44
Total, Miraflores Spillway and east dam.....	\$89.56	\$91.83	\$2,111.03	\$181.39	\$3,746.97
Miraflores west dam, maintenance.....	207.98	.....	.....	207.93	.....
Dredging:					
Atlantic entrance.....	730.42	2,779.27	18,120.39	3,509.69	23,312.99
Gaillard Cut.....	257,593.47	180,869.57	38,233.94	438,463.04	110,156.07
Pacific entrance.....	4,727.55	4,114.92	10.76	8,842.47	1,245.91
Total, dredging.....	\$263,051.44	\$187,763.76	\$56,365.09	\$450,815.20	\$134,714.97
Maintenance of Gatun Lake.....	1,611.54	1,738.81	899.12	3,350.35	1,865.53
Gatun-Miraflores Locks.....	29.25	.....	6,170.16	.....	11,671.66
Naos Island Breakwater, maintenance.....	.....	.....	178.38	29.25	178.38
Total operation and maintenance.....	\$559,969.36	\$455,795.58	\$202,247.34	\$1,015,761.94	\$393,225.20
Tolls earned.....	496,732.03	573,568.67	88,401.30	1,070,137.70	56,640.20
Tolls earned in excess of expenses.....	.....	117,570.09	.....	5,322.76	297,225.00
Expenses in excess of tolls earned.....	63,177.33	.....	113,845.54	.....	.....

## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

The following list of retail prices of cold storage provisions which will be effective October 28, 1915.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

## FRESH BEEF.

	Price.
Beef, suet, special, per lb.	0.33
Beef suet, native, per lb.	0.33
Soup beef, special, per lb.	0.07
Soup beef, native, per lb.	0.05
Soup bone, special, per lb.	0.23
Soup bone, native, per lb.	0.23
Stew beef, special, per lb.	0.11
Stew beef, native, per lb.	0.08
Plate beef, special, per lb.	0.12
Plate beef, native, per lb.	0.08
Chuck roast (3 lbs. up), special, per lb.	0.12
Chuck roast (3 lbs. up), native, per lb.	0.08
Rib roast, 2d cut (3 lbs. up), special, per lb.	0.16
Rib roast, 2d cut (3 lbs. up), native, per lb.	0.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	0.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	0.11
Pot roast, special, per lb.	0.20
Pot roast, native, per lb.	0.12
Rump roast, special, per lb.	0.20
Rump roast, native, per lb.	0.12
Porterhouse roast, choice, per lb.	0.31
Porterhouse roast, special, per lb.	0.16
Porterhouse roast, native, per lb.	0.16
Chuck steak, special, per lb.	0.13
Chuck steak, native, per lb.	0.12
Round steak, special, per lb.	0.09
Round steak, bottom, native, per lb.	0.09
Round steak, top, special, per lb.	0.15
Round steak, top, native, per lb.	0.10
Sirloin steak, special, per lb.	0.12
Sirloin steak, native, per lb.	0.12
Sirloin steak, choice cut, special, per lb.	0.23
Sirloin steak, choice cut, native, per lb.	0.16
Rump steak, special, per lb.	0.12
Rump steak, native, per lb.	0.12
Porterhouse steak (14 lbs. an), choice, per lb.	0.34
Porterhouse steak (14 lbs. an), special, per lb.	0.23
Porterhouse steak (14 lbs. an), native, per lb.	0.23
Porterhouse steak, short, choice, per lb.	0.28
Porterhouse steak, short, special, per lb.	0.20
Porterhouse steak, short, native, per lb.	0.12
Tenderloin steak, special, per lb.	0.35
Tenderloin steak, native, per lb.	0.25

## FRESH MEATS.

Lamb chops, per lb.	0.29
Lamb chops, shoulder, per lb.	0.20
Lamb, legs, 5 to 8 lbs., per lb.	0.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	0.15
Lamb, stewing, per lb.	0.12
Mutton chops, short cut, per lb.	0.23
Mutton chops, shoulder, per lb.	0.17
Mutton, leg, 8 to 10 lbs., per lb.	0.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	0.12
Mutton, stewing, per lb.	0.09
Pork hams, fresh (see footnote), per lb.	0.23
Pork loins, fresh (see footnote), per lb.	0.09
Pork, shoulders, fresh (see footnote), per lb.	0.19
Veal chops, per lb.	0.20
Veal chops, shoulder, per lb.	0.20
Small cutlets, per lb.	0.36
Veal, loin for roasting, per lb.	0.30
Veal, shoulder for roasting, not under 4 lbs., per lb.	0.15
Veal, stewing, per lb.	0.12

## MISCELLANEOUS.

Brains, calves', per lb.	0.07
Calves' heads, ea.	0.78
Kidney, beef, per lb.	0.23
Livers, beef, per lb.	0.09
Livers, calves', per lb.	0.27
Pates de foie gras, jar.	0.07
Pigs' feet, fresh, whole, ea.	0.35
Pigs' head, fresh, whole, ea.	0.83
Pigs' heads, fresh, 1/2 head, half.	0.42
Sausage, bologna, per lb.	0.11
Sausage, frankfurters, per lb.	0.08
Sausage, frankfurters, imported, tin.	0.08
Sausage, lieberwurst, per lb.	0.09
Sausage, pork, per lb.	0.18
Sausage, pork, bologna, per lb.	0.23
Spare ribs, pork, per lb.	0.13
Steak, hamburger, pkg.	0.17
Steak, hamburger, 20-pound container, per lb.	0.14
Sweet bread, beef, per lb.	0.17
Tails, ox, per lb.	0.11
Tongue, beef, native, whole, per lb.	0.20
Yeast, per lb.	0.31
Yeast, cake.	0.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	0.30
Bacon, breakfast, sliced, per lb.	0.31
Bacon, sliced, jar.	0.28
Bacon, sliced, tin.	0.27
Bacon, aquinas, whole square, per lb.	0.19
Bacon, strips, whole strip.	0.20
Beef, corned—No. 2, per lb.	0.15
Beef, corned—No. 2, per lb.	0.12
Ham, genuine Westphalia, per lb.	0.50
Ham, lunch, per lb.	0.40
Ham, minced, "Bologna style", per lb.	0.13

Ham, shoulders, boneless, sugar cured, whole	16*
Shoulder, per lb.	22*
Ham, sugar cured (whole) per lb.	22*
Ham, sugar cured (half) per lb.	24*
Ham, sugar cured (sliced) per lb.	28*
Ham, sugar cured, boiled (whole) per lb.	28*
Ham, sugar cured, boiled (half) per lb.	30*
Ham, sugar cured, boiled (sliced) per lb.	36*
Pigs' feet, pickled, per lb.	0.08
Pork, hams, per lb.	0.18
Pork, clear, per lb.	0.11
Pork, standard mess, per lb.	0.11
Tongue, beef, corned native, whole, per lb.	0.20
Tongue, ox, whole, 3 to 5 lbs., per lb.	0.20
Tongue, pigs', per lb.	0.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	0.31
Broilers, milk fed, per lb.	0.34
Capons, per lb.	0.34
Chickens, fancy roasting, corn fed, per lb.	0.29*
Chickens, fancy roasting, milk fed, per lb.	0.33*
Ducklings, per lb.	0.25
Ducks, mallard, 2 to 4 lbs., ea.	2.35
Fowls, light, per lb.	0.23
Fowls, western, dry picked, per lb.	0.23
Geese, per lb.	1.00
Grouse, ea.	0.44*
Squabs, ea.	0.30*
Turkeys, per lb.	0.30*

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	0.41*
Butter, creamery, 60-62 lb., tub, whole tub, per lb.	0.40*
Butter, Sheffield farms, extra fancy, per lb.	0.50
Cheese, Edam, ea.	1.50
Cheese, Edam, tin.	0.39
Cheese, Gouda, per lb.	0.26
Cheese, Parmesan, per lb.	0.38
Cheese, Philadelphia cream, cake.	0.09
Cheese, Roquefort, per lb.	0.43
Cheese, snappy, cake.	0.09
Cheese, Swiss, per lb.	0.34
Cheese, Young American, per lb.	0.41*
Cream, 30 per cent, 1 pt.	0.17**
Cream, 30 per cent, pt.	0.29**
Cream, 30 per cent, qt.	0.52**
Eggs, fresh, per doz.	0.41*
Eggs, fresh, 1 doz. (only)	0.21*
Per-mil-lac, bottle.	0.25**
Ice cream, (see footnote) qt.	0.25
Ice cream, (see footnote) 1 gal.	0.50
Milk, Sheffield farms, qt.	0.15**
Oleomargarine, per lb. carton.	0.29

## FISH.

Bluefish, per lb.	0.16
Codfish, dried, per lb.	0.11
Haddock, smoked, per lb.	0.09
Haiibut, fresh, per lb.	0.11
Cherring, smoked, per lb.	0.28
Oysters, fresh, per qt.	0.10
Salmon, fresh, per lb.	0.18
Whitefish, smoked, per lb.	0.12

## VEGETABLES.

Beets, per lb.	0.02
Cabbage, per lb.	0.11
Carrots, per lb.	0.13
Celery, per head.	0.05*
Onions, per lb.	0.03
Parasips, per lb.	0.03
Plantains, per doz.	0.03
Potatoes, white, per lb.	0.02
Potatoes, sweet, per lb.	0.03
Squash, per lb.	0.02*
Toratoes, per lb.	0.07
Turnips, per lb.	0.02*
Yams, luca, per lb.	0.03

## FRUITS, DRIED.

Apples, evaporated, per lb.	0.12*
Apricots, evaporated, per lb.	0.12
Currants, dried, per lb.	0.13
Figs, dried, 12 oz pkg.	0.14
Peaches, evaporated, per lb.	0.07
Pears, evaporated, per lb.	0.18
Pel, chin, per lb.	0.17
Pel, lemon, per lb.	0.17
Pel, orange, per lb.	0.15
Prunes, stewing, per lb.	0.11
Raisins, select, per lb.	0.10
Raisins, table cluster, per lb.	0.34

## FRUITS, FRESH.

Apples, fresh, per lb.	0.03
Apples, fresh select, per lb.	0.06
Bananas, 8 hands and over, per bunch.	0.48
Bananas, 6 and 7 hands, per bunch.	0.32
Bananas, 4 hands, per bunch.	0.04
Coconuts, ea.	0.04
Grapes, Malaga and Tokay, per lb.	0.06
Grapefruit, select, ea.	0.09
Lemons, per doz.	0.17
Limes, per 100	0.25
Oranges, select, ea.	0.04
Oranges, tropical, per doz.	0.16
Peaches, fresh, per lb.	0.05
Pears, fresh, per lb.	0.05

\* Indicates advance from preceding list.

\*\* Indicates live cost allowed for retail of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Price.

## OFFICIAL CIRCULARS.

## Assistant District Attorney.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., October 19, 1915.  
To all concerned—Effective October 22, 1915, and during the absence on leave of the District Attorney, Mr. Walter F. Van Dams, as Assistant District Attorney, will perform the duties of District Attorney.  
GEO. W. GOETHALS,  
GOVERNOR.

## Cooperation with Police Authorities in Securing Evidence to Be Used before Canal Zone Courts.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., October 22, 1915.  
HEADS OF DEPARTMENTS AND DIVISIONS:

The following letter addressed to this office by the District Attorney, under date of October 21, 1915, is quoted for the information and guidance of all concerned:

"I request that heads of departments employing inspectors and others for the purpose of investigating violations of the laws of the Canal Zone be instructed to direct that their inspectors or other investigators secure the cooperation of the police when it appears that criminal acts are going to be made and that it will be necessary to secure proper and legal evidence for the trial.

"When inspectors make and prosecute these cases the police are not especially called upon to cooperate in the matter of securing evidence, and they feel no responsibility for the case. This may result in a loss of necessary evidence to convict.

"The inspectors or others employed to investigate a case which may result in a criminal prosecution should, of course, consult with the District Attorney as to the kind of charge to be made and as to instructions generally, but the police are accustomed to making these cases and are better advised as to the evidence necessary to convict, and their cooperation should be secured in obtaining evidence.

GEO. W. GOETHALS, GOVERNOR.

## Sailing of the "Allianza."

THE PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., October 26, 1915.  
CIRCULAR NO. 172:

To all concerned—The steamship *Allianza*, scheduled to sail for New York on Sunday, October 25, will, on account of not making the trip through the Canal, sail from pier No. 10, Cristobal, on Friday, October 29, at 3 p. m.

C. H. MORSETT, Superintendent.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Thursday, November 4, 1915, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than Tuesday preceding the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same. The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, two days before the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Thursday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Friday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 7 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, November 5, 1915, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board.

GEORGE J. VANDERLICE, Recorder.

## JOINT LAND COMMISSION.

## Notices of Award.

In the matter of the claim of *Nicolas Arrocha*, for property designated as *Nano Island*, award No. 95, docket No. 1011, October 19, 1915—An award is hereby made against the United States in favor of the persons hereinafter named, in the sum of \$400 United States currency.

This award shall be paid to the persons hereinafter named, in the amounts specified, on or before the 19th day of November, 1915, and if payment or tender of payment of any of the items of this award is not made on or before that date, such items shall thereafter bear interest at the rate of six per centum per annum until paid.

For the right, title, and interest, which the persons hereinafter named may have or may have had in and to the lands known as *Nano Island*, located at the Pacific entrance of the Panama Canal, together with all crops, fruit trees, and other improvements located on said island, the sum of \$400, divided as follows:

To *Nicolas Arrocha*, the sum of..... \$100.00  
To *Delmira Cedeño V. de Botello*, the sum of..... 100.00  
To *José María Martín*, the sum of..... 100.00  
To *Genarina Leguía*, the sum of..... 100.00

Total..... \$400.00

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of sundry claims, award No. 97, docket numbers as shown, October 19, 1915—An award is hereby made against the United States, in favor of the persons hereinafter named, in the sum of \$625 United States currency.

This award shall be paid to the persons hereinafter named, in the amounts specified, on or before the 19th day of November, 1915, and if payment or tender of payment of any of the items of this award is not made on or before that date, such items shall thereafter bear interest at the rate of six per centum per annum until paid.

*Encarnación Magina*, docket No. 993—For all rights, claims, and other interests which the said *Encarnación Magina* may possess or may have possessed in and to crops, fruit trees, and any other improvements at or near the Quebrada de Macho (Chagres), the sum of \$200.

*Rosa Carranza and José A. Cianca*, docket No. 1018—For all the rights, claims, and other interests which the said *Rosa Carranza* and *José A. Cianca* may possess or may have possessed in and to crops, houses, fruit trees, and any other improvements at the old railroad line by the bridge over the Carabali River (this property being distinct from that covered by claim docket No. 3187), the sum (divided equally between the claimants) of \$300.  
*José A. Cianca*, docket No. 3187—For all rights, claims, and other interests which the said *José A. Cianca* may possess or may have possessed in and to crops, fruit trees, and any other improvements at or near the Quebrada Cementaria, Goigra (this property being distinct from that covered by claim docket No. 1018), the sum of \$125.

Total, \$625 United States currency.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

## Rules of Dismissal.

In the matter of the claim of *Mrs. Charlotte Philpotts* for property located near *Loma del Tigre*, rule of dismissal No. 199, docket No. 975, October 19, 1915—The claim of *Mrs. Charlotte Philpotts*, docket No. 975, which came on for hearing on October 15, 1915, is hereby disallowed, as the evidence presented to the Commission does not justify an award being made.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of the claim of *Zachariah Bell*, for property located near *Playa Flor*, rule of dismissal No. 200, docket No. 1015, October 19, 1915—On October 18, 1915, public hearing was accorded to the claim of *Zachariah Bell*, docket No. 1015. The evidence before the Commission is that on July 26, 1911, the claimant, for a consideration of \$375 to him paid and acknowledged, executed to the Panama Railroad Company a quitclaim deed containing the following clause:

"And the grantor does hereby release and relinquish any and all claims of every kind and character that he may have against the United States of America, the Isthmian Canal Commission, or the Panama Railroad Company, by reason of any work heretofore done by either of them on said land."

As it was claimed by the claimant that the damage to his property was done prior to the signing of the above-

mentioned quitclaim deed, the Commission is of the opinion that there is no basis for a claim against the United States of America, and the claim is therefore disallowed.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of sundry claims, rule of dismissal No. 202, docket numbers as shown, October 20, 1915—With reference to the following claims, the evidence before the Commission is that settlement therefor had been made by the United States:

Docket No.	Claimant	Tax	Date of Payment.
518	Aragón Nino.....	437	1-14
595	Antillo Sando (Sando).....	36	5-13
1013	Antonio Gomez.....	1	1-15
1045	Francisco Revara (Rivera).....	4	-14
1047	José Delao (de la Ramirez).....	10	-14
1061	(Nario) Inez Salazar.....	8	-14
1189	Arturo Fuentes.....	8-15-14	
1260	Santiago Zapata.....	8-28-15	
1261	Magdalena Marin.....	10	-14
1273	Sebastián Martín.....	11	10-14
1280	Joséph Gillespie (Gillespie).....	7	-14
1283	Serapio Moras.....	8-28-15	
1298	Selso Cantilla (o).....	5	-14
1299	Julio A. (Julia) Pajaro.....	7	-15
1300	Florencio Lopez.....	7	-15
1302	Manuel Dolores Torres.....	7	-15
1312	Emanuel (Manuel Dolores) Martes.....	3-14-15	
1391	Julian Martinez.....	843	4-15
1397	Selerino (Seferin) Frere.....	677	5-15
1400	Benjamin Morton.....	1244	9-15
1403	Benjamin Morris.....	3	-15
1563	Concepcion Perez.....	1563	2-14
1607	Joséph Davidson.....	607	1-15

In view of the above settlements, no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

## Misdirected Letters.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon application of the addressee:

Birgines, Mrs. Anthony	Fournoy, Joseph
Blynn, Marshall N.	Green, Le Roy S.
Brantly, Robert	Heimberger, John
Bunker, Winifred L.	Herdman, J. A.
Carlton, Richard, Co. E.	Potter, Leslie
Carithers, Lieut. T. W.	Reardon, Maurice F.
Cereda, Alfred J., U. S. Army.	Sabo, L.
Christensen, L. C.	Staerker, Otto
Collins, J. H., Co. F.	Sutton, Walter
Dickenson, Mrs. Chas.	Teel, Clarence E., C. A. C.
Duprey, Frederick	Welsher, Miss Lucille
	Young, Benjamin
	Durston, G. H.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, October 23, 1915:

DAY AND DATE.	STATIONS.				
	Vigia.	Athajuela	Gamboua.	Gatun Lake.	Miraflores Lake.
Sun., Oct. 17.....	127.45	93.50	86.10	86.10	54.20
Sun., Oct. 18.....	127.40	93.35	86.04	86.04	54.30
Tues., Oct. 19.....	127.40	93.48	86.06	86.06	54.16
Wed., Oct. 20.....	126.95	92.84	86.08	86.08	53.76
Thurs., Oct. 21.....	126.60	92.80	86.03	86.03	53.82
Fri., Oct. 22.....	131.30	96.40	86.11	86.07	54.10
Sat., Oct. 23.....	128.45	94.25	86.12	86.06	54.29

Heights of low water to nearest foot..... 125.0 91.0

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective October 23:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Suits, union, suit.....	\$0.99	\$1.10
Presses, racket, ea.....	.77	.60
Umbrellas, ea.....	1.15	1.20
Hats, straw, ea.....	2.20	2.35
Boilers, rice, ea.....	.66	.58
Carringtons, baby, ea.....	7.15	8.95
Mats, door, ea.....	1.30	1.15

## Additions to Stock.

Chocolates, assorted, Lowney's, 1-lb. box.....	\$0.59
Chocolates, assorted, Lowney's, 1-lb. box.....	.31
Gums, assorted, Lowney's, 1-lb. box.....	.47
Bons Bons, assorted, Lowney's, 1-lb. box.....	.26

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions until December 8 are given in this table:

DATE.	OCTOBER.			
	Time and height of high and low water.			
Wed., October 27.....	5:57	12:20	18:27	.....
	13.9	1.5	13.2	.....
Thurs., October 28.....	0:38	6:32	13:00	19:04
	2.9	2.0	12.7	12.5
Fri., October 29.....	1:20	7:09	13:44	19:47
	3.6	1.25	3.0	11.9
Sat., October 30.....	2:08	7:53	14:34	20:39
	4.3	1.1	3.6	11.4
Sun., October 31.....	3:05	8:40	15:32	21:43
	4.8	1.1	4.1	11.2

## NOVEMBER.

DATE.	Time and height of high and low water.			
	Time and height of high and low water.			
Mon., Nov. 1.....	4:09	10:02	16:34	22:52
	11.7	1.1	8.1	11.4
Tues., Nov. 2.....	5:13	11:17	17:34	23:54
	4.4	1.1	3.8	12.1
Wed., Nov. 3.....	6:13	12:20	18:30	.....
	15.6	1.0	8.1	.....
Thurs., Nov. 4.....	0:46	7:04	13:14	19:20
	13.1	2.4	12.8	2.2
Fri., Nov. 5.....	1:32	7:51	14:01	20:06
	15.2	1.0	1.2	2.2
Sat., Nov. 6.....	2:20	8:36	14:47	20:51
	15.2	0.0	14.8	0.4
Sun., Nov. 7.....	2:58	9:20	15:29	21:37
	15.2	-1.0	15.2	0.0
Mon., Nov. 8.....	3:43	10:04	16:13	22:23
	16.8	-1.6	16.2	-0.5
Tues., Nov. 9.....	4:26	10:50	16:58	23:09
	17.1	-1.8	16.3	-0.5
Wed., Nov. 10.....	5:12	11:37	17:45	23:58
	16.9	-1.5	16.0	0.0
Thurs., Nov. 11.....	6:00	12:26	18:35	.....
	17.0	-1.3	16.0	.....
Fri., Nov. 12.....	0:50	6:51	13:18	19:30
	0.8	1.3	0.1	14.6
Sat., Nov. 13.....	1:46	7:47	14:15	20:30
	1.7	1.4	1.1	13.7
Sun., Nov. 14.....	2:39	8:54	15:18	21:32
	2.6	1.0	2.1	13.1
Mon., Nov. 15.....	3:59	10:10	16:24	22:55
	3.1	12.2	2.8	12.8
Tues., Nov. 16.....	5:10	11:31	17:43	.....
	3.3	11.9	3.1	.....
Wed., Nov. 17.....	0:07	6:16	12:43	18:37
	12.9	3.0	12.1	3.1
Thurs., Nov. 18.....	1:08	7:14	13:42	19:32
	13.2	2.5	12.6	2.9
Fri., Nov. 19.....	1:58	8:03	14:30	20:18
	13.5	2.0	13.1	2.6
Sat., Nov. 20.....	2:50	8:47	15:17	21:01
	13.9	1.5	13.5	2.3
Sun., Nov. 21.....	3:18	9:26	15:48	21:43
	14.0	1.1	13.7	2.1
Mon., Nov. 22.....	4:10	10:11	16:24	22:21
	14.2	0.9	13.9	2.1
Tues., Nov. 23.....	4:28	10:42	16:58	22:59
	14.2	0.9	13.8	2.2
Wed., Nov. 24.....	5:02	11:20	17:32	23:37
	14.1	1.0	13.7	2.4
Thurs., Nov. 25.....	5:36	11:59	18:08	.....
	13.8	1.4	13.4	.....
Fri., Nov. 26.....	0:18	6:12	12:38	18:46
	13.8	1.3	1.8	13.0
Sat., Nov. 27.....	0:58	6:49	13:19	19:26
	3.2	12.9	2.3	12.7
Sun., Nov. 28.....	1:44	7:30	14:04	20:08
	3.6	12.3	2.8	12.4
Mon., Nov. 29.....	2:32	8:17	14:52	20:57
	3.9	11.8	3.3	12.2
Tues., Nov. 30.....	3:25	9:15	15:46	21:53
	4.0	11.5	3.5	12.3

## DECEMBER.

DATE.	Time and height of high and low water.			
	Time and height of high and low water.			
Wed., Dec. 1.....	4:26	10:19	16:44	22:53
	3.7	11.5	3.5	12.3
Thurs., Dec. 2.....	5:25	11:27	17:41	23:53
	3.1	11.8	3.2	13.3
Fri., Dec. 3.....	6:23	12:30	18:39	.....
	12.5	2.6	.....	.....
Sat., Dec. 4.....	0:49	7:10	13:16	19:33
	13.1	1.3	13.4	1.8
Sun., Dec. 5.....	1:42	8:07	14:20	20:25
	15.0	0.2	14.4	1.0
Mon., Dec. 6.....	2:33	8:57	15:11	21:17
	15.8	-0.7	15.3	0.3
Tues., Dec. 7.....	3:23	9:46	15:59	22:00
	16.5	-1.3	15.9	-0.2
Wed., Dec. 8.....	4:12	10:36	16:48	22:56
	16.8	-1.7	16.2	-0.3

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., October 24, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

No vessels were despatched from either Canal entrance for transit through the Canal. Vessels arriving during the week, for transit of the Canal, moored in the harbor at Cristobal or Balboa.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

Date	Vessel	Line	From
Oct. 18.	<i>Lewis Luckenbach</i>	Luckenbach Line.	New York.
Oct. 18.	<i>Herakles</i>	B. Kisteruds Dnpsk. A. S.	Newcastle on Tyne
Oct. 19.	<i>Tayo</i>	Soc. Anon. De Nickel.	Havre.
Oct. 20.	<i>Albanian</i>	Leyland Line.	Liverpool.
Oct. 20.	<i>Jan van Nassau</i>	Dutch Royal Mail.	Amsterdam.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC

Date	Vessel	Line	From
Oct. 25.	<i>Haigh Hall</i>	Haigh Hall S. S. Co.	Portland.
Oct. 25.	<i>M. F. Luckenbach</i>	Luckenbach Line.	Brunswick, Ga.

\*Vessels which came for passage through the Canal.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
Oct. 18.	<i>Perox</i>	French Line.	St. Nazaire.
Oct. 20.	<i>Hermad</i>	Earn Line.	Barbaos.
Oct. 20.	<i>Capt. A. F. Lucas</i>	Leyland Line.	Liverpool.
Oct. 21.	<i>M. E. Luckenbach</i>	Luckenbach Line.	Guantanamo.
Oct. 21.	<i>Casados</i> (dredge).	Bucury Company.	Guantanamo.
Oct. 23.	<i>Camilo</i>	Elders & Fyffes.	Lima.

## \*DEPARTURES.

Date	Vessel	Line	To
Oct. 22.	<i>Perou</i>	French Line.	St. Nazaire.
Oct. 23.	<i>Camilo</i>	Elders & Fyffes.	Bristol & Jamaica.
Oct. 23.	<i>Wegadesk</i>	Earn Line.	Cuban ports.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From
Oct. 26.	<i>Wegadesk</i>	Earn Line.	Norfolk.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	To
Oct. 27.	<i>Albanian</i>	Leyland Line.	Brunswick, Ga.
Oct. 27.	<i>Hermad</i>	Earn Line.	Cuban ports.

\*Other than vessels which arrived for transit through the Canal. United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

## \*ARRIVALS.

Date	Vessel	Line	From
Oct. 17.	<i>Heracles</i>	Shipowners Towboat Co.	Los Angeles.
Oct. 19.	<i>Limari</i>	South American S. S. Co.	Talcahuano.
Oct. 20.	<i>Atunari</i>	Pacific Steam Nav. Co.	Guayaquil.
Oct. 20.	<i>Urubamba</i>	Peruvian S. S. Co.	Valparaiso.
Oct. 21.	<i>Guatemala</i>	Pacific Steam Nav. Co.	Valparaiso.
Oct. 24.	<i>Capt. A. F. Lucas</i>	Standard Oil Co.	San Francisco.
Oct. 24.	<i>S. O. Barge No. 93</i>	Standard Oil Co.	San Francisco.
Oct. 24.	<i>Shodomon</i>	S. S. Goidelian & Cor., Ltd.	Portland.
Oct. 24.	<i>Lansing</i>	Union Oil Co.	Port San Luis.
Oct. 24.	<i>Kiyo Maru</i>	Toyo Kisen Kaisha.	Colonel.

## \*DEPARTURES.

Date	Vessel	Line	To
Oct. 21.	<i>Manari</i>	Pacific Steam Nav. Co.	Tahoea.
Oct. 21.	<i>Heracles</i>	Shipowners Towboat Co.	San Francisco.
Oct. 24.	<i>Pennsylvania</i>	Pacific Mail S. S. Co.	San Francisco.
Oct. 24.	<i>Lansing</i>	Union Oil Co.	Port San Luis.
Oct. 24.	<i>Kiyo Maru</i>	Toyo Kisen Kaisha.	Hongkong.
Oct. 24.	<i>H. Luckenbach</i>	Luckenbach Line.	Valparaiso.
Oct. 24.	<i>Isabela</i>	N. Y. & Porto Rican Co.	San Francisco.
Oct. 24.	<i>Limari</i>	Pacific Steam Nav. Co.	Valparaiso.
Oct. 24.	<i>Urubamba</i>	Peruvian S. S. Co.	Valparaiso.
Oct. 24.	<i>Guatemala</i>	Pacific Steam Nav. Co.	Valparaiso.

## EXPECTED ARRIVALS.

Date	Vessel	Line	From
Oct. 26.	<i>Capt. A. F. Lucas</i>	Standard Oil Co.	San Francisco.
Oct. 26.	<i>S. O. Barge No. 93</i>	Standard Oil Co.	San Francisco.
Oct. 26.	<i>Shodomon</i>	S. S. Goidelian & Cor., Ltd.	Portland.
Oct. 26.	<i>Lansing</i>	Union Oil Co.	Port San Luis.
Oct. 26.	<i>Kiyo Maru</i>	Toyo Kisen Kaisha.	Hongkong.
Oct. 26.	<i>H. Luckenbach</i>	Luckenbach Line.	Valparaiso.
Oct. 26.	<i>Isabela</i>	N. Y. & Porto Rican Co.	San Francisco.
Oct. 26.	<i>Limari</i>	Pacific Steam Nav. Co.	Valparaiso.
Oct. 26.	<i>Urubamba</i>	Peruvian S. S. Co.	Valparaiso.
Oct. 26.	<i>Guatemala</i>	Pacific Steam Nav. Co.	Valparaiso.

## EXPECTED DEPARTURES.

Date	Vessel	Line	To
Oct. 26.	<i>Capt. A. F. Lucas</i>	Standard Oil Co.	San Francisco.
Oct. 26.	<i>S. O. Barge No. 93</i>	Standard Oil Co.	San Francisco.
Oct. 26.	<i>Shodomon</i>	S. S. Goidelian & Cor., Ltd.	Portland.
Oct. 26.	<i>Lansing</i>	Union Oil Co.	Port San Luis.
Oct. 26.	<i>Kiyo Maru</i>	Toyo Kisen Kaisha.	Hongkong.
Oct. 26.	<i>H. Luckenbach</i>	Luckenbach Line.	Valparaiso.
Oct. 26.	<i>Isabela</i>	N. Y. & Porto Rican Co.	San Francisco.
Oct. 26.	<i>Limari</i>	Pacific Steam Nav. Co.	Valparaiso.
Oct. 26.	<i>Urubamba</i>	Peruvian S. S. Co.	Valparaiso.
Oct. 26.	<i>Guatemala</i>	Pacific Steam Nav. Co.	Valparaiso.

\*Including vessels arriving for transit through the Canal.

water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 9.0 feet below mean sea level. The depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

## Sailings of Vessels in Regular Service with the United States.

Vessel	Line	Sails	Arrives
Carrillo	U. F. C.	Oct. 20	Oct. 27
Colon	P. R. R.	Oct. 21	Oct. 27
Tenadores	U. F. C.	Oct. 23	Oct. 31
Santa Marta	U. F. C.	Oct. 27	Nov. 3
Advance	P. R. R.	Oct. 28	Nov. 4
Metapan	U. F. C.	Oct. 30	Nov. 8
Almirante	U. F. C.	Nov. 3	Nov. 10

## NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Sails	Arrives
Panama	P. R. R.	Nov. 4	Nov. 10
Pastores	U. F. C.	Nov. 4	Nov. 10
Zacapa	U. F. C.	Nov. 10	Nov. 17
Allianca	P. R. R.	Nov. 11	Nov. 17
Calamares	U. F. C.	Nov. 13	Nov. 21
Carrillo	U. F. C.	Nov. 17	Nov. 24
Colon	U. F. C.	Nov. 18	Nov. 24
Tenadores	U. F. C.	Nov. 20	Nov. 28
Santa Marta	U. F. C.	Nov. 24	Dec. 1
Advance	P. R. R.	Nov. 26	Dec. 3
Metapan	U. F. C.	Nov. 27	Dec. 6

## CRISTOBAL-COLON TO NEW YORK.

Vessel	Line	Sails	Arrives
Zacapa	U. F. C.	Oct. 28	Nov. 4
Allianca	P. R. R.	Oct. 29	Nov. 4
Calamares	U. F. C.	Nov. 1	Nov. 8
Carrillo	U. F. C.	Nov. 4	Nov. 11
Colon	P. R. R.	Nov. 5	Nov. 11
Tenadores	U. F. C.	Nov. 8	Nov. 15
Santa Marta	U. F. C.	Nov. 11	Nov. 18
Advance	P. R. R.	Nov. 12	Nov. 19
Metapan	U. F. C.	Nov. 15	Nov. 23
Almirante	U. F. C.	Nov. 18	Nov. 25
Panama	P. R. R.	Nov. 19	Nov. 25
Pastores	U. F. C.	Nov. 22	Nov. 29

Vessel	Line	Sails	Arrives
Zacapa	U. F. C.	Nov. 25	Dec. 2
Allianca	P. R. R.	Nov. 27	Dec. 3
Calamares	U. F. C.	Nov. 29	Dec. 6
Carrillo	U. F. C.	Dec. 2	Dec. 9
Colon	P. R. R.	Dec. 4	Dec. 10

## NEW ORLEANS TO CRISTOBAL-COLON.

Vessel	Line	Sails	Arrives
Parismina	U. F. C.	Oct. 23	Oct. 23
Atenas	U. F. C.	Oct. 27	Nov. 4
Cartago	U. F. C.	Oct. 30	Nov. 3
Turrialba	U. F. C.	Nov. 3	Nov. 10
Heredia	U. F. C.	Nov. 6	Nov. 11
Abangarez	U. F. C.	Nov. 10	Nov. 17
Parismina	U. F. C.	Nov. 13	Nov. 18
Atenas	U. F. C.	Nov. 17	Nov. 24
Cartago	U. F. C.	Dec. 1	Dec. 16

## CRISTOBAL-COLON TO NEW ORLEANS.

Vessel	Line	Sails	Arrives
Heredia	U. F. C.	Nov. 23	Nov. 2
Abangarez	U. F. C.	Nov. 28	Nov. 4
Parismina	U. F. C.	Nov. 4	Nov. 9
Atenas	U. F. C.	Nov. 4	Nov. 11
Cartago	U. F. C.	Nov. 11	Nov. 16
Turrialba	U. F. C.	Nov. 11	Nov. 18
Heredia	U. F. C.	Nov. 18	Nov. 23
Abangarez	U. F. C.	Nov. 18	Nov. 25



## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis. Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,  
THE CANAL RECORD,  
Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### The Slide Situation.

Excavation from Gaillard Cut during October amounted to 1,079,663 cubic yards, as compared with 1,052,586 cubic yards in September, 991,879 cubic yards in August, and 692,109 cubic yards in July. In October 872,952 cubic yards were taken from the bases of the Culebra slides.

Excavation in the seven days ending at 6 a. m., Tuesday, November 2, amounted to 257,029 cubic yards, of which 236,549 cubic yards were from the Culebra slides. In addition, 8,700 cubic yards were rehandled.

Excavation from the bases of the Culebra slides during the week ending at 6 a. m., Tuesday, October 26, amounted to 212,699 cubic yards. Other excavation from the Cut amounted to 61,246 cubic yards, making a total for the week of 273,945 cubic yards. The work by the several dredges during the two weeks was as follows:

		Yardage.	
Dredge.	Type.	Oct. 26	Nov. 2
Gamboa.....	15-yard dipper...	72,265	58,225
Paraiso.....	15-yard dipper...	56,035	66,910
Cascadas.....	15-yard dipper.....	.....	5,640
Corozal.....	Ladder.....	32,783	44,655
Cardenas.....	3-yard dipper.....	Repairs	Repairs
Chagres.....	8-yard dipper.....	25,610	9,320
Mindi.....	5-yard dipper.....	18,691	17,161
No. 86.....	Pipeline suction.....	34,080	29,180
Culebra.....	Seaguing suction.....	27,166	26,912
Mormot.....	Belgian ladder.....	7,315	7,720

The 15-yard dipper dredge *Paraiso* broke a spud on Monday, October 25, and was towed to the north end of the Cut for repairs, the spud being handled by the crane *Ajax*. The *Cardenas* was out of service during both the weeks for repairs, which were made at *Paraiso*. The ladder dredge *Mormot* was taken out of the Cut during two days of the week ending October 26 to dredge away spoil which had

obstructed a culvert under the Panama Railroad north of Gamboa.

### Dredge "Cascadas" at Work in the Cut.

The assembling of the new 15-yard dipper dredge *Cascadas* was completed at 6 p. m., October 30, and after a few hours spent in running and adjusting the machinery, the dredge was placed at work about noon, Sunday, October 31, at the bases of the Culebra slides.

The rapidity of assembling the *Cascadas* establishes a new record for such work. The assembling of the dredge *Gamboa* required 30 days, and the dredge *Paraiso* was completed in 14 days, and notwithstanding the fact that special arrangements had to be made for assembling the *Cascadas*, on account of not being able to bring the dredge to the dock at *Paraiso*, the work was completed in a little over seven working days. The forces of the Dredging Division began work on the *Cascadas* on her arrival at Gamboa about 4 p. m., Friday, October 22. No work was done on Sunday, October 24. The exceptionally fast work is accounted for by the fact that the senior dredge men were taken off the dredges *Gamboa* and *Paraiso*, and placed on the *Cascadas*; and also by the fact that the Dredging Division rigging gang has become expert in handling the heavy parts. Work was also facilitated by the ability of the 250-ton crane *Ajax* to handle the heavy parts quickly, and by rush work performed by the *Paraiso* shop men on the job, in view of the urgent need of the dredge in the Cut.

The *Cascadas* is of the same type as the *Gamboa* and *Paraiso*, but several feet broader in the beam and has some improvements over the earlier dredges, notably in the case of gantry for handling the spuds and the addition of the third boiler, thereby eliminating the 48 or 56 hours necessary for cleaning boilers on the *Gamboa* and the *Paraiso*.

The three are the dreadnaughts of the dredging fleet for rock excavation. One of them has made a record of excavating 17,185 cubic yards in 24 hours, and about 10,000 cubic yards a day has come to be regarded as a good day's work for one under the present operating conditions in the Cut.

### Ships That are Waiting for Transit.

The vessels waiting on the Atlantic side are, in the order of arrival, the *Acajulla*, *Wellington*, *Eureka*, *Florence Luckenbach*, *Camino*, *Lewis Luckenbach*, *Jacob Luckenbach*. Those waiting on the Pacific side are, in the order of their arrival, the *Newport*, *Olson* and *Mahony*, *Admiral*, *Aboukir*, *Grahamland*, *Netherpark*, *Coronado*, *Saint Louis*, *Navajo*, *Toromeo*, *Edison Light*, *Harry Luckenbach*, *Newton*, *Lady Carrington*, *Pleiades*, *Sultana*, *Constantinos XII*, *Arna*, *San Diego*, *Isabela*, *Urubamba*, *Guatemala*, *Jamaica*, *Crown of Grenada*, *Tricolor*, *Cauca*, *City of Para*, *Falstria*, *Matoppe*, *Corridge*, *Carolyn*, *O. M. Clark*, *Huasco*, *Huallaga*.

## COAL AND OIL LEASES.

Notices to Individuals and Companies Desiring Storage Facilities at Terminals.

In view of the interest shown in the coal and oil supplying facilities at the Canal, the following notices have been prepared and issued with the approval of the Secretary of War.

The first is circular No. 703, dated July 30, 1915, superseding the memorandum of January 24, 1913, and is as follows:

### Private Coal and Oil Depots.

1. The following is an outline of the policy decided upon by The Panama Canal, with the approval of the Secretary of War, in regard to applications received from coal companies and fuel oil companies in reference to establishing private coal and oil depots on the Isthmus to supply shipping passing through the Panama Canal.

2. Act of Congress, approved August 24, 1912, authorized the establishment of Government plants for coal, fuel oil, etc., for supplying shipping. Some of this work is completed. The balance is under way. It is not intended to prevent private interests doing business in the Canal Zone as regards selling coal and fuel oil to shipping.

3. Coal and fuel oil may be brought into the Canal Zone by individuals and companies without the payment of duty, unless such coal or fuel oil is disposed of for use outside of the Canal Zone and within the territory of the Republic of Panama.

4. Transportation of coal across the Isthmus will be cheaper by vessel, including payment of tolls, than by railroad. Moreover, the railroad will not be allowed to compete with the Canal.

5. Executive Order No. 1656, issued by the President under date of December 5, 1912, decrees that all land and land under water within the limits of the Canal Zone are necessary for the construction, maintenance, operation, and sanitation of the Panama Canal. The only way the use of land at the Canal termini can be granted under the law to individuals and companies is through a revocable license, which is not a contractual relation and is terminable at the will of the United States.

6. It is the policy of the United States to retain complete control of the terminals, water frontage, and transportation by land and water across the Isthmus. It is not the policy of the United States to attempt to monopolize the fuel business, and the establishment of private coal piles and private fuel oil depots on the Isthmus under proper conditions will be permitted.

7. Under the conditions of a revocable license, an individual or company would not be warranted from a business standpoint in making a large expenditure for dredging, wharf construction, and similar improvements. From the standpoint of the Canal, the duplication of such independent and separate im-



provements, the cost of which will have to be absorbed eventually by the selling price of coal and fuel oil, is not desirable whether suitable locations could be found and assigned for this purpose or not. The Government plants are being laid out so as to afford ample wharf room, and to provide ample modern coal and oil handling machinery for unloading into storage and reloading from storage all vessels, lighters, or barges.

8. So far as coal is concerned, a certain area at each plant has been set aside that will be served by the coal handling machinery with the same convenience as the area occupied by the Government coal pile, for the storage of the coal by individuals and companies.

9. This arrangement will obviate the necessity of any dredging, wharf construction, or purchase of coal handling machinery by private owners or companies, and at the same time will enable them to obtain the benefits of the rapid coal handling machinery to be purchased by the United States. The Panama Canal will reimburse itself for plant costs, including dredging, wharf construction, fitting up the storage area, etc., and for operating costs at reasonable rates to be apportioned among all who use these facilities on an equitable basis. The rates to be charged in connection with the coal handling plant and with the fuel oil plants are given in separate circulars. The participation of individuals and companies in The Panama Canal coal business will require no outlay for plant or improvements and will enable them to obtain the benefits of the rapid coal handling machinery being installed by The Panama Canal on more advantageous terms than if they should be permitted to carry on their coal business on the Isthmus entirely independent of each other and The Panama Canal plant. On account of lack of storage space and coal handling machinery, no arrangements can be made that will permit individuals and companies participating in Panama Canal coal business prior to completion of the permanent plants, which will be early in 1916 for the Cristobal plant, and in July, 1916, for the Balboa plant.

10. As regards fuel oil, the Government installations are completed and in operation, including cribs, oil handling plant, pipe lines between pumping plants and water fronts, manifolds, etc.

11. Applications can be made at any time for the lease of lots in the tank farms at Mount Hope and Balboa. Lessees are expected to do all grading, construct their tanks complete, fire walls surrounding tanks, and pipe lines between tanks and handling plant. Further details are covered by a separate circular. The only charges made are rental for the lot and handling charges for pumping oil from water front to tank and vice versa.

12. Vessels delivering oil to tanks will be subject to the usual wharfage and pilotage charges.

13. It is not the policy of The Panama Canal to appoint agents at home or abroad in connection with The Panama Canal fuel business.

14. Individuals and companies that are granted privileges allowing them to participate in The Panama Canal fuel business will be expected to comply with all rules and regulations issued by the Governor of The Panama Canal covering same under penalty of forfeiture; and, if requested and before action is taken on their applications, such individuals and companies may be required to furnish

such information as will enable the Governor of The Panama Canal to determine their ability to conduct their business in a satisfactory manner.

GEO. W. GOETHALS.

Approved:  
LINDLEY M. GARRISON,  
*Secretary of War.*  
Balboa Heights, C. Z., July 30, 1915.

The following, circular No. 704, issued under date of July 31, 1915, is supplementary to the foregoing:

**General Conditions Relative to Leasing of Coal Storage Areas.**

1. It is expected that the Cristobal plant will be ready for operation early in 1916, and the Balboa plant by July, 1916.

2. Berths alongside the coal dock for delivering coal will be guaranteed within 24 hours after arrival.

3. There will be no charge for pilotage or wharfage as regards the coal pier and docks for vessels taking coal. There will be the usual charge for pilotage and wharfage for vessels delivering coal.

4. The Panama Canal reserves the right to refuse to permit the storage of any coal of unsatisfactory quality, or coal that might be considered dangerous to the plant and coal pile.

5. Deliveries of coal will not be accepted except in single-deck vessels. Tween-deck vessels will not be placed under the unloading towers.

6. The guaranteed unloading rate at either the Cristobal or Balboa coaling plants will be 1,000 tons per day of 24 hours; time to commence when vessel comes alongside unloading dock.

7. There will be a charge for "despatch" in excess of 1,000 tons per day at the rate of four cents per net registered ton per day. Similarly, demurrage will be allowed at the rate of eight cents per net registered ton per day whenever the coal is not unloaded at the average rate of 1,000 tons per day.

8. The charge for unloading coal, including all trimming, and placing the coal at any desired point in the storage pile, will be 25 cents per ton.

9. The charge for taking coal from any points in the storage pile and delivering it at the end of one of the chutes at any point along the reloading wharf will be 20 cents per ton. This includes any necessary trimming in the storage pile.

10. The charge for trimming coal from the end of the delivery chute to the bunkers of a vessel lying alongside the reloading wharf will be based upon cost to The Panama Canal, and will be calculated in accordance with rules to be adopted by The Panama Canal governing same.

11. It is expected that the charges for coaling ships that do not come to the coal dock; that is, by coal barges or otherwise, after the permanent coaling plants are completed, will be similar to the charges which will be in effect for the temporary coaling plant at the time the permanent coaling plants are put into commission.

12. There will be a rental charge for coal storage space in the Cristobal and Balboa coaling plants of 20 cents per square foot per annum, measured center to center of partition walls. Coal can be stored in these plants to the amount of a little in excess of one-half ton per square foot. With coal "turned over" four times per annum, this rental charge would amount to about 10 cents per ton of coal sold.

13. The tonnage of coal is based on a ton of 2,240 pounds.

14. Upon completion, the permanent coaling plants will be turned over to the Panama Railroad for operation and maintenance.

15. A maximum price per ton will be fixed by the Panama Railroad. All coal in storage, owned by individuals and companies, will be subject to purchase by any vessel using the Canal.

16. Lessees are prohibited from offering or giving gratuities of any kind to any purchaser or any employee or representative of any purchaser.

17. The foregoing conditions and rates are subject to such change as may be ordered by the Governor from time to time.

GEO. W. GOETHALS,

Approved:  
LINDLEY M. GARRISON,  
*Secretary of War.*  
Balboa Heights, C. Z., July 31, 1915.

**Draining Ponds at Paraiso.**

A pond on the east side of the Canal, midway between Pedro Miguel and Paraiso, adjoining the old site of the Paraiso railroad station, and lying between the main line of the Panama Railroad and the Las Cascadas branch, is being drained by the forces of the Division of Municipal Engineering. The drainage work consists of cutting a trench to the Canal, about 125 feet to the west, and installing pipes of iron, 30 inches in diameter, which will then be filled over. The work is being done for sanitary purposes, and will cost approximately \$2,000.

In connection with this work, a pond behind the present railroad station at Paraiso, to the north of the pond first described, will be filled with hydraulic spoil until the water in it will flow into the first pond, and thus pass into the Canal through the 30-inch drainage pipe.

**Deceased Employees.**

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Albert Atkinson.....	61845	Jamaica.....	Panama.....	Ancon greenhouse	Oct. 20, 1915.
Jonathan E. Lovell, alias James Horre.....	89897	Demerara.....	Cristobal.....	Colon agency.....	Oct. 24, 1915.
Alexander Smith.....	95751	St. Lucia.....	Colon.....	P. R. R.....	Oct. 21, 1915.
Henry Walth.....	48276	Barbados.....	Panama.....	Term. Cons. Div.	Oct. 27, 1915.

The estates of the abovementioned deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## SHED FOR NEW PIER, NO. 7.

Designed with View to Presenting a Façade Appropriate to the Uses of the Building.

In line with the policy of making the permanent structures of the Canal pleasing to the eye and suggestive of the construction and the purpose of the buildings, the sheds over the new piers being constructed at the terminals, No. 7 at Cristobal, and No. 18 at Balboa, will be built on broad, simple lines having regard not only for their primary purpose of affording shelter but for the places they fill in the harbor landscape.

The elevation of the shore end of the shed authorized for Pier No. 7 at Cristobal is shown herewith. The sea end of the pier will be the same, except for modifications of the doors flanking the main entrance. The side walls will have panelling at the top, in harmony with the upper sections of the two ends, as shown. The pier head reproduced herewith will be 167 feet in width, with a height of 44 feet to the top of the wall and 56 feet to the highest point over the main entrance. The main entrance will be 22 feet in width, having a vertical folding door, of the Ogden type, 13 feet eight inches in height. The semicircle, drawn on a radius of 11 feet, forming the upper part of the entrance, will be closed with bronze grill work and the two side entrances will have bronze grill doors in harmony with this. The name of the pier will be shown in bronze characters, 26 inches high. Ten-inch bronze numerals will be used for the year mark at the lower left side of the main entrance, and the 40 entrances along sides of the pier will be designated by bronze letters and numerals 18 inches high. The shed will be 945 feet in length, which is 75 feet longer than the shed on pier No. 8.

The structural features of the pier shed were worked out in the office of the Engineer of Docks and the architectural finish was evolved in the office of the Canal Architect. The pier head was designed to be not too different from the straight-line construction of the adjoining pier sheds, and to be a step in making the Cristobal water front attractive and impressive.

The walls of the pier shed will be, for a height of 10 feet above the floor level, of solid reinforced concrete, 13 inches thick. Above this the walls will be constructed according to the Lewen system, using interlocking corrugated

steel plates, plastered on both sides with Portland cement plaster. The plaster will be mixed with a minimum of lime, in order to increase its durability, and increase the protection of the reinforcement. Bids for contracts for the plastering are advertised for in this issue of THE CANAL RECORD, and the work is to be done under the supervision of the Engineer of Docks, who has prepared the specifications.

## Supply of Oil on the Isthmus.

The steamship *A. F. Lucas* and barge No. 93 of the Standard Oil Company, and the Union Oil Company's *Lansing*, which arrived at Balboa on Sunday, October 24, with a total of 104,000 barrels of crude fuel oil, were all completely discharged before noon of Tuesday.

These consignments have provided plenty of oil on the Pacific side, and arrangements have been made to transship by rail such quantities as may be required at the Atlantic terminus, if any will be needed in addition to the stock in storage there. The Panama Railroad has completed delivery of 2,500 barrels of Diesel oil from Balboa for the motorship *Pacific*, at Cristobal, and 2,600 barrels for the *Jullandia*, and the equipment used for the transportation of this oil may be used for crude oil if desired. The railroad is using in this service 18 tenders detached from retired locomotives. Each will carry about 84 barrels of oil, so that the entire 18 in a train can transport approximately 1,500 barrels at a trip.

Oil is delivered at the Atlantic entrance regularly at Dock 14, and delivery of the Diesel oil from the locomotive tenders was made there and on the adjoining Dock 13. A temporary 8-inch line has been laid to the coaling plant, and ships can take oil there. On the Pacific side, delivery may be made either at the oil crib or at the steel pier, Dock 4. The extension of pipe line to the pier allows the delivery of oil while a vessel is discharging or taking on cargo.

A slide in the steep slope on the west side of the track of the Panama Railroad near milepost No. 38, between Pedro Miguel and New Culebra, in the afternoon of Sunday, October 31, caused suspension of traffic for several hours. The trackman stationed on the section reported the slide in time to avoid danger to trains.

## EXECUTIVE ORDER.

## Annual Recesses of Joint Land Commission and Leave Regulations.

By direction of the President, it is ordered:

1. That the Joint Land Commission for the appraisal and settlement of damages to property in the Canal Zone, established in accordance with the provisions of the Canal Convention between the United States and Panama, concluded November 18, 1903, is hereby authorized, with the approval of the Secretary of State of the United States and the Panaman Executive, to take a recess of not exceeding sixty days in each fiscal year, and the members thereof, or any of them, may be granted a leave of absence during the recess of the Commission, by their respective Governments.

2. That payment for any absence of a member of the Commission, due to illness or injury, shall be made upon the certificate of a physician in the employ of The Panama Canal that such absence is due to illness or injury.

3. That payment for leave of absence granted under the provisions of this order during the recess of the Commission shall be made at the rate of Fifteen Dollars (\$15) per day.

4. That payment for absence, whether granted as leave in conformity with the provisions of this order, or whether due to illness or injury, shall not be made for more than sixty days in one fiscal year.

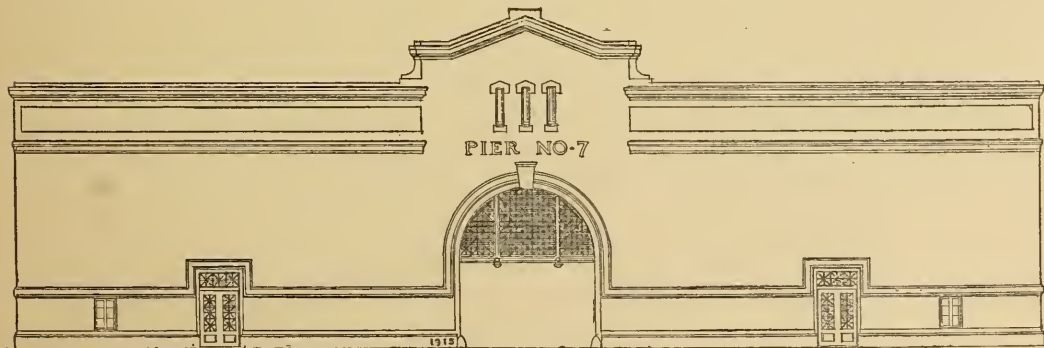
5. That no payment shall be made for any days during which the members of the Commission may be absent from duty except as authorized by this order, and except to the American Commissioners for the time required for them to return to New York upon the termination of their services.

LINDLEY M. GARRISON,  
Secretary of War.

WAR DEPARTMENT,  
October 16, 1915.

The foregoing Executive Order has been published as Panama Canal circular No. 601-48.

Authority has been granted for an extension of the present sewer along Colon Beach, between Third Street and Battery Morgan, to deep water.



SHORE END ELEVATION OF SHED FOR PIER NO. 7, CRISTOBAL.

## COALING SHIPS AT BALBOA.

Rate of Supply Has Been Tripled and the Congestion Relieved.

The congestion in the delivery of coal to vessels at Balboa ensuing from the extraordinary demands caused by the closing of the Canal and the need of the ships to bunker at Balboa before leaving, has practically passed. On Saturday, October 30, the orders placed with the Balboa agency, beyond those then being filled, aggregated 8,800 tons. The agency has been supplying from 1,400 to 2,200 tons a day, and the indications are that all demands will have been met before the end of the current week. During the month of October the coal furnished to ships at Balboa amounted to approximately 37,000 tons.

Under normal conditions before the closing of the Canal, nearly all of the bunkering was done at the Atlantic end of the Canal, at which the price is \$1 less per ton than at Balboa. Coaling at Balboa amounted to approximately 4,000 tons a month. The vessels which bunkered there were principally the Toyo Kisen Kai-sha and other ships engaged in the Pacific coasting trade, with occasional demands from naval vessels and tramp steamers making Balboa for supplies while on the way between other Pacific ports; and once in a while a ship passing through the Canal would bunker at Balboa for the sake of quicker service than might be obtained at Cristobal at the time. Under such conditions, the facilities of the temporary coaling plant, supplying about 450 or 500 tons a day, were usually adequate.

Extending the facilities of the temporary plant to supply between 1,400 and 2,200 tons a day has been accomplished by hard work, long hours, and the use of means in which speed was held paramount and economy secondary. The force now engaged in the coaling work of the Balboa agency is about two-thirds of the entire force of the agency, which is approximately 700 men since the congestion. Two shifts are employed in coaling, working night and day. The time of each shift has been increased from nine to 10 hours. Five coaling berths, not including the dolphins in the inner harbor, have been provided. Three of these are along the quay wall adjoining the Port Captain's office, and a special track has been laid along the deck of this wharf, in addition to the regular track along the face of the wharf, to expedite the handling of the locomotive cranes and of the coal cars without interference. To increase the output of the cranes at these berths the coal is dumped on the wharf, instead of being handled out of the cars.

Two cranes are equipped with clamshell buckets, and handle direct from flat-bottom cars. Four lighters belonging to the Panama Railroad are in constant use for hauling coal to ships which moor at the dolphins in the inner harbor, and they are supplemented by the intermittent use of lighters belonging to the Pacific Steam Navigation Company, whenever they are available. A 103-ton locomotive is especially assigned to switching the coal cars. Four locomotive cranes have been put in service on the quay wall, in place of the one which before was borrowed from the Mechanical Division as needed.

The extensions noted have increased the cost of handling the coal, per ton, but

the price of the coal has been kept the same. This is \$7 per ton at Balboa, trimmed in bunkers, when handled by the ship's gear; or if a locomotive crane is used for handling it, the price of \$7 per ton is increased by a charge of \$1 per hour for the use of the crane. The operation of the crane costs the railroad company approximately \$2 an hour.

## Finishing Foundation for Reloader Wharf at Balboa Coaling Plant.

To the morning of November 1, all but six of the 78 caissons for the reloader wharf of the coal handling plant at Balboa had been sunk to rock, and it is expected that the sinking of all of them will be completed within the present month. There are eight caissons, eight feet in diameter, placed in the outside and center rows under the coal bunker; the most of the caissons are six feet in diameter. All are of cylindrical steel shells, filled with reinforced concrete.

The filling of the shells with reinforcement and concrete to elevation +9.5 has been in progress since February, and at this time about one-third of the total number have been completed, while the remaining ones, excepting seven, have been filled to elevation -5.

In connection with this work, anchor rods are embedded in the concrete near sealevel, and arrangements are made for attachment to tie rods leading to anchorages in the bank behind the wharf. This is to hold the caissons against the outward thrust of the earth which slopes from the floor level to the bottom of the slip.

## Applications for Family Quarters.

Applications for married quarters were on file on September 30, 1915, as follows:

STATIONS.	Number of applications.
Ancon .....	346 (79)
Paraíso .....	166 (26)
Gatun .....	110 (20)
Cristobal .....	145 (34)
Total .....	767 (159)

NOTE—The figures in parentheses show the number of applicants already occupying regular or nonregular family quarters at stations other than those at which applications are filed.

The United States Army transport *Buford*, which brought the Twenty-seventh Regiment of Infantry to the Canal, on its way to the Philippine Islands from Texas City, arriving at Cristobal on October 6, sailed on Sunday, October 31, for Jacksonville. The regiment has remained on the Isthmus, awaiting the resumption of traffic through the Canal.

The French steamship *Saint Louis*, which arrived at Balboa on Saturday, October 9, is on the way from Papeete to New York with a general cargo of 6,911 tons. This vessel belongs to the Campagne Navale de L'Océanie, which sent the first French vessel through the Canal, the *Saint Andre*, entering on March 16, and coming, like the *Saint Louis*, from the French colonies in the Society Islands. The *Saint Andre* was bound for Glasgow from Tahiti with a cargo of chrome ores.

November 3, the independence day of Panama, being a holiday on the Canal Zone as well as in Panama, the Panama Railroad is operating its trains on the regular schedule for Sundays and holidays. This service began with the Saturday-night schedule for the evening of Tuesday, November 2.

## OFFICIAL CIRCULARS.

## Rates of Pay, Silver Roll.

THE PANAMA CANAL  
THE PANAMA RAILROAD COMPANY,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., October 19, 1915.

CIRCULAR NO. 666-6 (Superseding all previous circulars of 666 series):

1. Effective November 1, 1915, all employees on the silver roll of The Panama Canal or Panama Railroad Company shall be rated as hereinafter shown. These ratings and rates of pay have been prepared with a view to limiting the maximum rating that can be given to this class of help, without the necessity of obtaining prior authority, and to eliminating, so far as possible all unnecessary ratings. It is also desired to establish a uniform rate of pay for work of a similar nature in different departments and divisions.

2. An employee's rating shall in all cases correspond with his duties. Where it is considered desirable to pay a higher rate or rating than that shown, each case should be taken up separately and authority secured to use the higher rate of pay or different rating. It is thought that the ratings and rates of pay hereinafter shown will be sufficient to meet all ordinary requirements and no changes should be requested unless absolutely necessary in order to make the employee's pay commensurate with the work done or to make the rating correspond with the duties performed.

3. Unless otherwise specified, the maximum entrance salary shall be the lowest rate of pay given under the authorized ratings, and a new employment shall not be made at a higher rate of pay than that authorized as the maximum entrance salary for the class of work performed; roll keepers must see that new employees are not started at higher rates unless specially authorized by the Governor; however,

(a) an employee may be regularly transferred from one department, division, or gang to another without reduction;

(b) an employee, absent for not more than 30 days, with the prior consent of competent authority in his department or division, may be reinstated at his former rate, or an employee discharged on account of reduction of force or lack of work, may be reinstated, within 60 days, at his former rate of pay.

(c) An employee transferred from one class of work (artisan to clerk, etc.) may be paid at the monthly rate or hourly rate corresponding to that received at the time of transfer or the next higher or lower rate, at the discretion of the head of the department, regardless of the entrance salary of the position to which transferred.

4. The following conditions shall govern the reemployment of former employees on the silver roll who have been discharged for unsatisfactory service or misconduct, with no objections to reemployment, or who have left the service of their own accord:

(a) If discharged for unsatisfactory service or misconduct, with no objections to reemployment, he may be reemployed only at a lower rate of pay than that previously received and may not be promoted to his old rate under six months;

(b) If he quits voluntarily, with no objections to reemployment, without having given five days' notice, he may be reemployed only at a lower rate of pay than that previously received, and may not be promoted to his old rate under two months;

(c) If he quits voluntarily, with no objections to reemployment, after having given five days' notice, he may be reemployed at the same rate previously received, or at the entrance salary of any other position for which he is qualified, even though such entrance rate be higher than his old rate.

5. An employee on the silver roll who has been discharged for unsatisfactory service or misconduct, with objections to reemployment, may not be reemployed unless objections are removed by the department or division entering the objections, or by the Governor, and then only under the conditions quoted in paragraph 4, section "a".

6. All employees leaving the service or transferring from one department, division, or gang, to another, with the exception of Boys "A", Laborers "A", and Laborers "B" will be furnished with "Silver Employee's Service Slip," Form PC No. 262-2, properly filled out.

7. The maximum monthly rate of pay for silver employees shall be \$60 United States currency, except where otherwise shown or where special authority has been granted as provided in paragraph 71, to pay a higher rate. The monthly silver rates of pay are intended for those employees whose hours of work are more or less irregular, or whose time it would be difficult to check up on an hourly basis. The rate of pay per month shall not exceed the pay which would be received for the number of hours worked at the hourly rate of pay established for the same class of work. Whenever practicable, an hourly rate should be applied in preference to a monthly



rate. The following table shows the corresponding monthly amount, at the different standard hourly rates of pay based on eight, nine, 10 and 12 hours work per day:

STANDARD RATES OF PAY.  
(U. S. CURRENCY.)

5 cents.....	10.20
7 cents.....	14.28
10 cents.....	20.40
12 cents.....	24.48
15 cents.....	30.60
16 cents.....	32.64
18 cents.....	36.72
22 cents.....	44.88

rate of pay shall be given only to those artisans whose services are particularly satisfactory and who show an especial fitness for the work performed. Under no circumstances shall an employee be given this rating until

MONTHLY PAY EQUIVALENT TO DIFFERENT HOURLY RATES. SUNDAYS NOT INCLUDED.

8 hours daily, 204 hours per month.	9 hours daily, 230 hours per month.	10 hours daily, 255 hours per month.	12 hours daily, 306 hours per month.
\$10.20	\$11.50	\$12.75	\$15.30
14.28	16.10	17.85	21.42
20.40	23.00	25.50	30.60
24.48	27.60	30.60	36.72
30.60	34.50	38.25	45.90
32.64	36.80	40.80	48.96
36.72	41.40	45.90	55.08
44.88	50.60	56.10	67.32

8. Unless otherwise specified, employees will be required to serve at least three months before being promoted to a higher grade. Promotions shall always be made to the next higher grade.

9. All employments, changes in ratings, transfers, and terminations of American citizens, or of aliens who receive more than \$75 a month or 40 cents an hour, on the silver roll, should be reported in the same manner and on the same forms as in case of persons employed on the gold roll, except that no medical certificate is required in connection with a person employed on the silver roll. As the above classes of employees are entitled to leave privileges, it is necessary that this information be furnished in all cases, and that all assents be reported on the prescribed form (PC 484), as promptly as possible in order that proper entries may be made on the records.

10. In all time books and on all pay rolls the designations used shall be: Laborer "A", Laborer "B", Laborer "C", Helper, Artisan "A", Artisan "B", Artisan "C", as the case may be. The term "Artisan" will cover the various vocations as shown under this heading.

11. The standard, hourly rates of pay for silver employees shall be five cents, seven cents, 10 cents, 12 cents, 15 cents, 16 cents, 18 cents, and 22 cents, United States currency. The duties to be performed under each grade are as follows:

12. Boy "A"—Five cents per hour—This is the entrance rate of pay for all boys (including water, shop, and messenger). They may be promoted to Boy "B", at seven cents per hour, after six months' satisfactory service.

13. Boy "B"—Seven cents per hour—This rate can be used as the entrance rate only in cases where prior authority has been obtained from the Governor's office and for well-developed boys of 16 years of age or over.

14. Laborer "A"—Ten cents per hour—This will cover all common labor, except as hereinafter specifically authorized.

15. Laborer "B"—Thirteen cents per hour—This is a special rate and can be used only where the work is especially difficult, extra hazardous, or particularly disagreeable, as work that requires the men to be in mud continuously, caisson work, cleaning sewers, etc. Prior authority must be obtained in each case where it is considered necessary to use this rate and a statement should be furnished showing the nature of the work to be performed and the approximate length of the time that this class of labor will be required. It will also be the entrance rate for white labor.

16. Laborer "C"—Sixteen cents per hour—Only white labor is included in this class. Whenever it becomes necessary to employ laborers, it is desired that colored labor, at 10 cents per hour, be used whenever and wherever practicable.

17. Helper—Twelve cents per hour—This rating can be applied only to those performing the duties of helpers to shop or other mechanics, such as machinists, car repairers, carpenters, plumbers, etc.

18. Artisan "A"—Fifteen cents per hour—Those employees performing the duties of shop, building construction, and other mechanics, and artisans shall be given this rating. It is the standard rate of pay for this class of help and shall be the maximum entrance rate for artisans. This designation covers employees performing the services, under the direction of white foremen, as follows:

Blacksmith, boilermaker, cable splicer, carpenter, car repairer, calker, cement finisher, copersmith, drill runner, ironworker, lineman, machinist, mason, molder, painter, pipefitter, pressman, planing mill hand, plumber, riveter, upholsterer, wireman.

19. Artisan "B"—Eighteen cents per hour—Artisans can receive this rating only after demonstrating that the quality and quantity of their work is such as would, in the opinion of the foreman in charge, entitle them to a higher rate than Artisan "A". Promotion shall not be made in any case until after six months' satisfactory service. This designation covers employees performing the same services as under Artisan "A".

20. Artisan "C"—Twenty-two cents per hour—This

he has served at least one year in the lower grades. This designation covers employees performing the same services as under Artisan "A".

21. The rates marked with a star (\*) in the lists following are special and will be eliminated as fast as practicable. Employees receiving these rates as of May 1, 1914, except Clerks, may be continued without change if necessary for the good of the service; but no further promotions to these rates may be made without the approval of the Governor.

22. The salaries of disabled silver employees who are given employment at Corral Farm will be fixed in accordance with circular No. 625-2.

23. Office timekeepers will see that no employee is carried on the rolls, unless the foregoing instructions have been complied with.

#### DESIGNATIONS AND RATES OF PAY.

##### Hourly Rates.

Artisan A, 15; B, 18; C, 22 cents.

(Note—For explanation of duties to be performed under this designation, see paragraphs Nos. 18, 19, and 20.)

Artisan D, 25; E, 32 cents per hour.

(Note—The Artisan "D" rate at 25 cents and "E" rate at 32 cents are for use in Mechanical Division only.)

Baggage-master, 25 cents per hour.

(Note—For use on P. R. R. main line only.)

Blueprinter, 18 cents per hour.

(Note—These rates for use in blueprinting room of Administration Building only.)

Bookkeeper, 25 cents per hour.

Boy, A, 5; B, 7 cents per hour.

(Note—See paragraphs Nos. 12 and 13.)

Brakeman, 18; (local freight), 20 cents per hour.

(Note—These rates for use on P. R. R. main line only.)

Bricklayer, 25 and 30 cents per hour.

(Note—These rates for European workmen only.)

Caissonman (for work at top of caisson), 15 cents per hour.

Caissonman (for work in caisson), 16 cents per hour.

Cementman, 13 cents per hour.

(Note—This rate shall apply only to men handling dry cement in cars and cement sheds.)

Checker, 16 and 20 cents per hour.

Coal handler, 13 cents per hour.

(Note—For use on P. R. R. docks only.)

Coal trimmer, 15 cents per hour.

(Note—For use on P. R. R. docks only.)

Compositor, 20 and 25 cents per hour.

Concrete man, 13 cents per hour.

(Note—This rate shall apply only to men handling concrete materials to mixers and to men placing concrete in forms.)

Diver, 20, 25, and 45 cents per hour.

(Note—The 25-cent rate for pile-driving work.)

Fireman, 11, 15, and 25 cents per hour.

(Note—The 11-cent rate is for P. R. R. docks only.

The 15-cent rate is for P. R. R. docks and yards only.

The 25-cent rate is for P. R. R. main line service only.)

Flagman, 20 cents per hour.

(Note—For P. R. R. main line service only.)

Foreman, 18, 20, and 72 cents per hour.

(Note—These rates are for use on P. R. R. docks only.)

Gangwayman, 15 cents per hour.

(Note—For P. R. R. docks only.)

Helper, 12 cents per hour.

(Note—For explanation of duties to be performed under this designation see paragraph No. 17.)

Ironworker, 25 cents per hour.

(Note—For extra skillful men working aloft.)

Laborer A, 10; B, 13; C, 16 cents per hour.

(Note—For explanation of different grades see paragraphs Nos. 14, 15, and 16.)

Laundress, 8, 9, and 10 cents per hour.

Laundryman, 10, 12, 15, 18, and 22 cents per hour.

Leverman, 13 cents per hour.

(Note—For P. R. R. main line service only.)

Longshoreman, 12 cents per hour.

(Note—For P. R. R. docks only.)

Molders, tile, 18 cents per hour.

(Note—For concrete block plant only.)

Mucker, 12 cents per hour.

Nozzle man, 16, 18, and 20 cents per hour.

Operator, crane, 16 and 20 cents per hour.

Packer (female), 7 cents per hour.

Paper cutter, 20 cents per hour.

Paver, 13 cents per hour.

Pitman, 13 cents per hour.

Powder helper, 13 cents per hour.

Powderman (men loading holes), 13 and 16 cents per hour.

Printer, 25 cents per hour.

(Note—Per special classes of work and extra skillful men only.)

Rigger, 13 cents per hour.

Riveter, 25 cents per hour.

(Note—For extra skillful men working aloft.)

Rubber stamp maker, 25 cents per hour.

Seytheman, 13 cents per hour.

Shoemaker, 16 cents per hour.

Stower, 12 cents per hour.

(Note—For P. R. R. docks only.)

Switchman, 16 and 18 cents per hour.

(Note—These rates for use in P. R. R. yards only.)

Switchtender, 10 and 13 cents per hour.

(Note—The 13-cent rate is for use on P. R. R. main line only.)

Trucker, 11 cents per hour.

(Note—For P. R. R. docks only.)

Winchman, 15 and 17 cents per hour.

(Note—These rates are for use on P. R. R. docks only.)

Woodman, 16 cents per hour.

(Note—This rate for field parties only.)

##### Monthly Rates.

Agent, \$50 and \$60; assistant, \$75.

(Note—These ratings are for use on P. R. R. only.)

Artisan, \$30, \$35, \$40, \$45, \$60.

(Note—These ratings are for the lock operation division only. The \$60 rate to be used only at Gatun Lock.)

Attendant, \$5, \$15, \$20, \$25, \$30, \$35, \$40, \$45.

(Note—The \$5 rate is to be used only for the Ancon Hospital chronic ward; the \$40 rate is exclusively for morgue attendants; the \$45 rate is exclusively for operating room attendants, laboratory attendants working in filtration plants, and one at Palo Seco.)

Baker, \$37.50, \$40, \$45, \$50, \$60.

Barber, \$25.

Blacksmith, \$40, \$50.

(Note—These ratings are for use in corrals and on floating equipment only.)

Boatman, \$25, \$30, \$35, \$37.50.

(Note—These ratings are for the crews of cayucas and rowboats only. The entrance rate for crews of cayucas shall be \$30. This does not apply to crews of rowboats.)

Boatswain, \$45, \$55.

Boy, \$10, \$12.50, \$15, \$20.

(Note—Water boys and shop boys shall be employed at hourly rate only. Cabin boys and mess boys shall be rated as waiters. The \$20 rate is for bell boys at the Tivoli and Washington Hotels only.)

Butcher, \$40, \$45, \$50.

Captain: dredge, \$100; claret, \$85; steam launch, \$75.

(Note—Masters will be known and rated as Captains. Ratings above \$75 per month are for white employees only.)

Carpenter, \$40, \$45, \$60.

(Note—The \$40 and \$45 rates are for floating equipment only. The \$60 rate is for seagoing dredges and lock operator, division—Pacific locks only.)

Car recorder and sealer, \$45.

(Note—For P. R. R. docks only.)

Cartman, \$30, \$35.

Cattlemen, \$25, \$30, \$35, \$40.

Cemeteryman, \$32.50.

Chainman, \$30, \$37.50.

Chainman foreman, \$45, \$50.

Chauffeur, \$30, \$40, \$45, \$50.

(Note—Entrance rate when subsistence is furnished shall be \$30. Entrance rate when subsistence is not furnished shall be \$40. The maximum rate when subsistence is furnished shall be \$40.)

Checkers, \$30, \$35, \$40.

Clerk, \$25, \$30, \$35, \$40, \$45, \$50, \$60, \$75.

(Note—The usual entrance salary for clerks is \$30. The \$75 rate shall only be paid to Vard Clerks in the service of the P. R. R. where long hours and Sunday and holiday work are required.)

Coachman, \$50, \$75.

Coalman, \$30.

Coalpasser, \$40.

(Note—Coalpassers shall be employed only on floating equipment.)

Cook, \$20, \$25, \$30, \$35, \$40, \$45, \$50, \$55, \$60.

(Note—The maximum entrance rate for cook on main equipment and field parties is \$40. In all other cases the maximum entrance rate shall be \$25.)

Counter man, \$20, \$25, \$30.

(Note—For hotels with a la carte service only.)



Crib and valve tender, \$35, \$40.

Dairyman, \$20, \$25.

Elevatorman, \$40.

(Note—For passenger elevatormen only.)

Engineer:

Marine (dredge), \$67.50, \$75.

Marine (clapet), \$65, \$75.

Marine (steam launch), \$75.

Steam, \$30, \$35, \$40, \$45, \$50, \$55, \$60.

Farrier, \$40, \$50.

Fireman, \$25, \$30, \$35, \$40, \$45, \$50, \$60.

(Note—The maximum entrance rate for firemen on pile drivers shall be \$3; for standard gage locomotives, \$35, for firemen at the Cristobal power plant, \$40; for firemen on dredges, tugs, and clapets, \$45. The maximum rate of pay for firemen on standard gage locomotives shall be \$45.)

Flagman (crossing), \$30, \$37.50.

(Note—These rates for use on P. R. R. only.)

Foreman, \$25, \$30, \$35, \$40, \$45, \$50, \$60, \$75.

(Note—The maximum entrance rate for white foremen shall be \$50. An entrance and maximum rate of \$50 shall be allowed for dock foremen.

Gardener, \$7, \$30.

Gateman, \$40.

(Note—For use on coal handling plants only.)

Helper, \$10, \$12.50, \$15, \$17.50, \$20, \$35.

(Note—The designation of "Helper" will apply to cook's helpers, kitchen helpers, scullions, scrubbers, and other employees performing helpers' duties for which distinct designations are not provided. A maximum entrance rate of \$17.50 shall be allowed for helpers picking fruit and vegetables at the cold storage plant. The \$35 rate shall be paid only to the helper at the P. R. R. motor bus garage at Balboa.)

Hostler, \$25, \$30, \$35, \$40.

Janitor, \$25, \$30.

Janitor, head, \$37.50.

Keeper, \$15, \$60, \$65, \$75.

(Note—The \$15 rate shall not be regarded as the maximum entrance rate.)

Assistant, \$35, \$42.50, \$50, \$60.

Laborer, \$30.

(Note—To be used only at fuel oil handling plants.)

Lamplighter, \$37.50.

(Note—For P. R. R. service only.)

Laundress, \$15, \$17.50, \$20, \$22.50, \$25, \$30, \$35.

Laundryman, \$75, \$30, \$35, \$40, \$45, \$50.

Leadman, \$40, \$45.

(Note—For hydrographic work only.)

Leverman, \$12.50.

Lockman, \$25, \$30.

Foreman, \$60, \$75.

(Note—These rates for lock operation division only.)

Luggerman, \$25, \$30, \$35, \$40, \$45.

(Note—The rating of luggerman shall be confined to men handling ice, meat, and other cold storage supplies. The maximum entrance rate shall be \$30.)

Maid, \$12, \$15.

(Note—The \$15 rate shall be confined to maids at the insane asylum, the quarantine station at Balboa, and at Palo Seco.)

Maintainer, \$37.50, \$12.50.

Mate: Dredge, \$90; clapet, \$75.

Messenger, \$17.50, \$20, \$25, \$30, \$35, \$40.

(Note—The maximum entrance rate for messengers shall be \$25.)

Money counter, \$50, \$65, \$75.

Oil, \$30, \$35, \$40, \$45, \$50, \$55.

(Note—On dredges, tugs, and clapets, oilers may be appointed at a maximum entrance rate of \$50. The \$35 rate shall be confined to oilers on seagoing dredges, pipeline dredges, and tugs; the \$50 rate shall be confined to oilers on marine equipment. The maximum rate for oilers on load shall be \$45.)

Operator:

Air compressor, \$60, \$75.

(Note—For operators in power plants.)

Electric, \$40, \$45.

Filter, \$50.

Motorboat, \$30, \$35, \$40, \$45, \$50, \$55, \$60, \$75.

(Note—For motorboat operators a maximum entrance rate of \$50 is authorized for positions authorized at a rate of \$60 or more.)

Motor truck, \$30, \$35.

(Note—For operators of electric baggage trucks on docks and in railroad stations.)

Pontoon Bridge, \$37.50.

Pump, \$50.

(Note—The rating of Operator (pump) at \$50 shall be confined to employees in pump stations where there is no white supervision.)

Telephone, \$30, \$35, \$40, \$45, \$50.

Paint and Call Boy, \$37.50.

(Note—P. R. R. docks only.)

Patrolman, \$35, \$40, \$50.

Policeman, \$40, \$50, \$60.

(Note—The \$60 rate for policeman is for the operator of police launches only.)

Porter, \$25, \$30, \$35.

(Note—The rating of porter shall be used for employees handling baggage at P. R. R. stations only.)

Saddler, \$30, \$40, \$50.

Salesman, \$30, \$35, \$40, \$45.

Scavenger, \$32.50.

Seaman, \$30, \$35, \$40, \$45, \$55.

(Note—The \$55 rate for seaman is not allowed if subsistence is furnished.)

Signalman, \$60.

(Note—For Marine Division only.)

Stableman, \$30.

Steward, \$37.50, \$50, \$62.50, \$75.

Storeman, \$25, \$30, \$35, \$40, \$45, \$50.

Teachers, \$30, \$60, \$65; Palo Seco, \$5.

Teamsters, \$35, \$40.

Trackman, \$30.

(Note—This rating is for emergency use only on P. R. R. where long hours and Sunday and holiday work are required.)

Trackwalker, \$27.

(Note—For use on P. R. R. only.)

Trainman, \$30, \$35, \$37.50.

Waiter, \$15, \$17.50, \$20, \$30.

(Note—The \$30 rate is for use only on floating equipment where the waiters have the care of crews' quarters in addition to other duties.)

Waiter, head, \$25, \$30, \$37.50.

Watchman, \$20, \$25, \$30, \$35, \$37.50.

Watchman, per day, \$1.

(Note—For use on P. R. R. docks, when required.)

Water tender, \$55.

Wheelwright, \$50.

Winchman, \$50, \$55.

GEORGE W. GOETHALS,

Governor.

### Card Passes to Be Shown to Conductors.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., October 25, 1915.

To all holders of Panama Railroad card passes—The Superintendent of the Panama Railroad Company reports that it has become a general practice among passengers holding annual card transportation to call to conductors the number of their passes instead of showing the same as required by the regulations.

As conductors have instructions to inspect all card passes presented on their trains it is requested that all holders of card transportation show their passes to the conductor instead of calling out the number thereof.

GEORGE W. GOETHALS,

Governor, The Panama Canal,  
President, Panama Railroad Company.

### Acting Surveying Officer.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., October 25, 1915.

To all concerned—During the absence on leave of Mr. Charles L. Parker, beginning this date, Mr. Fred H. Stephens, assistant surveying officer, will perform the duties of the Surveying Officer.

GEORGE W. GOETHALS,

Governor.

### Prices of Chagres River Sand and Gravel.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., October 27, 1915.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective November 1, 1915, sand and gravel from the Chagres River will be invoiced to departments and divisions of The Panama Canal and Panama Railroad Company at 55 cents per cubic yard.

Sand and gravel from the Chagres River will be sold to employees of The Panama Canal and Panama Railroad Company, and to others entitled to the same rates as employees, at \$1.50 per cubic yard, delivered at nearest Panama Railroad siding.

GEORGE W. GOETHALS,

Governor.

### Handling Baggage between Wharves in Cristobal-Colon and Colon Passenger Station.

THE PANAMA RAILROAD COMPANY,

OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., October 27, 1915.

CIRCULAR NO. 175:

To all concerned—Effective November 1, 1915, the baggage transfer department at Cristobal will handle baggage between the Cristobal passenger station and the various wharves at Colon and Colon at the following rates: Fifteen cents for small pieces; 25 cents for pieces weighing up to 150 pounds; 40 cents for pieces weighing in excess of 150 pounds.

The baggage transfer department will collect these charges only where it actually handles baggage between the wharves and Colon passenger station.

C. H. MOTSELT,

Superintendent.

## COMMISSARY DEPARTMENT.

### Cold Storage Prices.

The following list of retail prices of cold storage provisions which will be effective November 4, 1915.

The prices are increased by 10 cent per sales to commercial and foreign naval vessels, and by 20 cent for sales to youths:

### FRESH BEEF.

	Price.
Beef, suet, special, per lb.	03 1/2
Beef suet, native, per lb.	03 1/2
Soup beef, special, per lb.	07
Soup beef, native, per lb.	08
Soup bone, special, per lb.	02 1/2
Soup bone, native, per lb.	02 1/2
Stew beef, special, per lb.	11
Stew beef, native, per lb.	08
Plate beef, special, per lb.	12
Plate beef, native, per lb.	08
Chuck roast (3 lbs. up), special, per lb.	12
Chuck roast (3 lbs. up), native, per lb.	08
Rib roast, 2d cut (3 1/2 lbs. up), special, per lb.	16
Rib roast, 2d cut (3 1/2 lbs. up), native, per lb.	09
Rib roast, 1st cut (3 1/2 lbs. up), special, per lb.	19
Rib roast, 1st cut (3 1/2 lbs. up), native, per lb.	11
Pot roast, special, per lb.	20
Pot roast, native, per lb.	12
Rump roast, special, per lb.	20
Rump roast, native, per lb.	15
Porterhouse roast, choice, per lb.	31
Porterhouse roast, special, per lb.	22
Porterhouse roast, native, per lb.	16
Chuck steak, special, per lb.	13
Chuck steak, native, per lb.	09
Round steak, bottom, special, per lb.	10
Round steak, bottom, native, per lb.	09
Round steak, top, special, per lb.	15
Round steak, top, native, per lb.	10
Sirloin steak, special, per lb.	20
Sirloin steak, native, per lb.	12
Sirloin steak, choice cut, special, per lb.	22
Sirloin steak, choice cut, native, per lb.	16
Rump steak, special, per lb.	20
Rump steak, native, per lb.	12
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	23
Porterhouse steak (1 1/2 lbs. up), special, per lb.	23
Porterhouse steak (1 1/2 lbs. up), native, per lb.	17
Porterhouse steak, short, choice, per lb.	28
Porterhouse steak, short, special, per lb.	28
Porterhouse steak, short, native, per lb.	12
Tenderloin steak, special, per lb.	35
Tenderloin steak, native, per lb.	25

### FRESH MEATS.

Lamb chops, per lb.	29
Lamb chops, shoulder, per lb.	20
Lamb, legs, 5 to 8 lbs., per lb.	24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	15
Lamb, stewing, per lb.	15
Mutton chops, short cut, per lb.	23
Mutton chops, shoulder, per lb.	17
Mutton, leg, 8 to 10 lbs., per lb.	19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	12
Mutton, stewing, per lb.	09
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	23 1/2
Pork loins, chops, or roast, per lb.	18
Pork, shoulders, fresh (see footnote), per lb.	19 1/2
Veal chops, per lb.	20
Veal chops, shoulder, per lb.	20
Veal cutlets, per lb.	36
Veal, loin for roasting, per lb.	30
Veal, shoulder for roasting, not under 4 lbs., per lb.	15
Veal, stewing, per lb.	12

### MISCELLANEOUS.

Brains, calves', per lb.	07
Calves' heads, ea.	78
Kidneys, beef, per lb.	09
Livers, beef, per lb.	09
Pates, calves', per lb.	27
Pates de foie gras, jar.	67
Pigs' feet, fresh, per lb.	05
Pigs' head, fresh, whole, per lb.	83
Pigs' heads, fresh, 4 head, half.	12
Sausage, bologna, per lb.	12 1/2
Sausage, frankfurter, per lb.	14
Sausage, frankfurters, imported, tin.	08
Sausage, liverwurst, per lb.	12 1/2
Sausage, pork, per lb.	23 1/2
Sausage, pork, homemade, per lb.	24 1/2
Spare ribs, pork, per lb.	16 1/2
Steak, hamburger, pkg.	17
Steak, hamburger, 20-pound container, per lb.	14
Sweet bread, beef, per lb.	17
Tails, ox, per lb.	09
Tongue, beef, native, whole, per lb.	31
Yeast, per lb.	31
Yeast, cake.	02

### CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	31 1/2
Bacon, breakfast, sliced, per lb.	32 1/2
Bacon, sliced, fat, per lb.	28
Bacon, sliced, tin.	27
Bacon, squares, whole square, per lb.	19
Bacon, strips, whole strip, per lb.	20
Beef, corned—No. 1, per lb.	15
Beef, corned—No. 2, per lb.	12
Ham, genuine Westphalia, per lb.	50
Ham, lunch, per lb.	50
Ham, mixed, "Rohlsn" style, per lb.	14 1/2
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	17 1/2
Ham, sugar cured (whole) per lb.	23 1/2

Ham, sugar cured (half) per lb.	26*
Ham, sugar cured (sliced) per lb.	31*
Ham, sugar cured, boiled (whole) per lb.	29*
Ham, sugar cured, boiled (half) per lb.	32*
Ham, sugar cured, boiled (sliced) per lb.	37*
Pigs' feet, pickled, per lb.	08
Pork, bellies, per lb.	18
Pork, clear, per lb.	11
Pork, standard mess, per lb.	20
Tongue, beef, corned native, whole, per lb.	20
Tongue, ox, whole, 3 to 5 lbs., per lb.	22
Tongue, pigs', per lb.	22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	31
Broilers, milk fed, per lb.	34
Capons, per lb.	34
Chickens, fancy roasting, corn fed, per lb.	29
Chickens, fancy roasting, milk fed, per lb.	33
Ducklings, per lb.	24
Ducks, mallard, 2 to 2 1/2 lbs., ea.	2.35
Fowls, light, per lb.	23
Fowls, western, dry picked, per lb.	25
Geese, per lb.	22
Grouse, ea.	1.00
Squabs, ea.	44
Turkeys, per lb.	30

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	40
Butter, creamery, 60-62 lb., tub, whole tub, per lb.	41
Butter, Sheffield, farms, extra fancy, per lb.	58
Cheese, Edam, ea.	1.15
Cheese, Gouda, tin, per lb.	39
Cheese, Gouda, per lb.	26
Cheese, Parmesan, per lb.	39*
Cheese, Philadelphia cream, per lb.	09
Cheese, Roquefort, per lb.	48*
Cheese, snappy, cake, per lb.	09
Cheese, Swiss, per lb.	34
Cheese, Young American, per lb.	34
Cream, 30 per cent., 1 pt.	17*
Cream, 30 per cent., qt.	20**
Cream, 30 per cent., gal.	52**
Eggs, fresh, per doz.	21
Eggs, fresh, 1/2 doz. (only).	21
Fer-mil-lac, bottle.	25**
Ice cream, (see footnote) qt.	25*
Ice cream, (see footnote) gal.	25*
Milk, Sheffield farms, 1 qt.	15**
Oleomargarine, per lb. carton.	29

## FISH.

Bluefish, per lb.	16
Codfish, dried, per lb.	11
Haddock, smoked, per lb.	09
Halibut, fresh, per lb.	11
Herring, smoked, per lb.	11
Oysters, fresh, per qt.	28
Salmon, fresh, per lb.	10
Whitefish, smoked, per lb.	18

## VEGETABLES.

Beets, per lb.	02
Cabbage, per lb.	011
Carrots, per lb.	02
Celery, per head.	04*
Lettuce, per lb.	07*
Onions, per lb.	03
Parsnips, per lb.	02 1/2
Plantains, per doz.	12
Potatoes, white, per lb.	02 1/2
Potatoes, sweet, per lb.	03
Squash, per lb.	02 1/4
Squash, fancy, per lb.	08
Tomatoes, per lb.	07
Turnips, per lb.	02
Yams, luca, per lb.	03

## FRUITS, DRIED.

Apples, evaporated, per lb.	11 1/2
Apricots, evaporated, per lb.	13*
Currants, cleaned, pkg.	13
Figs, dried, 12-oz pkg.	14
Peaches, evaporated, per lb.	07
Pears, evaporated, per lb.	18
Pear, citron, per lb.	22*
Peel, lemon, per lb.	16*
Peel, orange, per lb.	16*
Raspberries, stewing, per lb.	11
Raisins, seeded, pkg.	10
Raisins, table cluster, per lb.	34

## FRUITS, FRESH.

Apples, fresh, per lb.	04*
Apples, fresh select, per lb.	04*
Bananas, 8 hands and over, per bunch.	48
Bananas, 6 and 7 hands, per bunch.	32
Bananas, ea.	00 1/2
Coconuts, ea.	04
Grapes, Malaga and Tokay, per lb.	06
Grapefruit, select, ea.	09
Grapefruit, tropical, ea.	03 1/2
Lemons, per doz.	17
Limes, per 100	25
Oranges, select, ea.	04
Oranges, tropical, per doz.	12 1/2
Peaches, fresh, per lb.	04
Pears, fresh, per lb.	06*

\* Indicates advance from preceding list.

\*\* Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

† Sold only from commissaries, no orders taken for delivery.  
‡ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Proposals for Plastering Walls of Shed for Pier No. 7, Cristobal.

Sealed proposals will be received at the office of the Chief Quartermaster, Balboa Heights, C. Z., until 10 a. m., November 20, 1915, and then opened, for the plastering of the inside and outside surfaces of the walls of the shed of pier No. 7, Cristobal.

Complete specifications, plans, form of contract, proposal, and bond may be obtained upon written application to the Chief Quartermaster, such application to be accompanied by cash, certified check, or post-office money order made payable to the Collector, The Panama Canal, in the sum of \$10. Deposits covering these plans and specifications will be returned to the bidders who return the plans to the above office on or before the hour of opening bids or who submit regular bids before that hour, but will be forfeited and become payable to The Panama Canal in all other cases. Any additional information or explanation of specifications or plans may be obtained upon application to the Engineer of Docks, Cristobal, C. Z.

Bids must be accompanied by cash, post-office money order, or certified check made payable to the Collector, The Panama Canal, in the sum of \$1,000 as a guarantee that the bidder will, if required by the Panama Railroad Company, enter into a contract with satisfactory security in an amount not less than 15 per cent of the price bid as a guarantee that he will faithfully perform the work covered by the contract. Deposits will be returned to unsuccessful bidders upon rejection of their bids.

The Panama Railroad Company reserves the right to accept any bid or to reject any or all bids and to make award to the bidder whose bid it considers the most advantageous.

Bids must be marked "Proposal for plastering walls of shed for pier No. 7, Cristobal," and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Proposals for Furnishing 150 Linear Feet of Lignum-Vita.

Sealed proposals will be received at the office of the Chief Quartermaster, Balboa Heights, C. Z., until 10 a. m., November 13, 1915, and then opened, for furnishing 150 linear feet of lignum-vita, 12 by 12 inches, square, hewn or sawed, in pieces five feet and longer, to be straight, and of well seasoned material, delivery to be made to the General Storekeeper, Balboa, C. Z., within two weeks from the date of notice of acceptance of bid. Material will be subject to inspection and acceptance by the General Storekeeper, Balboa, and any further information as to the acceptability of any material proposed to be furnished may be obtained upon application to him.

Proposals should be marked "Proposal for furnishing 150 linear feet of lignum-vita" and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Misdirected Letters.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon application of the addressee:

Adams, R. H.	Hecht, M.
Aldrich, Miss Imogene E.	Henderson, Fred
Atkins, John	Howsen, W. A.
Austin, Edward M.	King, Lee M. (2)
Austin, Frank T.	Klinger, John C.*
Baker, Fred M.	La Rock, Herbert
Balderson, Alfred L.	McCarley, Earl S.
Baldensperger, Jacob G.	Meyer, Max L.
Bolen, Henry D.	Neary, Walter T.
Breward, Edward	Oliver, Amos*
Bunting, Marvin	Parsons, N. W.
Campbell, Walter	Potter, L. B.
Choulders, Mrs. J. P.	Richardson, Arthur
Courts, Master Corporal	Rochford, George
Doherty, Dr. Helen T.	Rose, John J.
Geddes, George	Ross, Dr. Edward B.
Gilmore, J. E.	Sheffield, Lamar C.
Ginnup, Mary A. (pkg.)	Simons, B.
Grant, F. N.	Taylor, Miss Fanny
Hallett, Mrs. Harley, c/o	Van Devanor, Fred
Capt. Hallett	Wey, Jno. H.
Hartwig, Cnas. *	Whitesides, J. C.

\*Paper.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective November 1:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Boards, wash, ea.	\$0.77	\$0.61
Bulbs, electric light, ea.	.29	.76
Carriages, baby, ea.	8.95	7.15
Knives, peeling, ea.	.05	.00
Springs, bed, ea.	5.50	5.00
Canvas, white, yd.	.62	.81
Flannel, canton, yd.	.14	.11

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next six weeks are given in this table:

NOVEMBER.

DATE.	Time and height of high and low water.			
	0:46	7:04	13:14	19:20
Thurs., Nov. 4.....	1:31	2.4	12.8	2.2
Fri., Nov. 5.....	1:32	7.51	14:01	20:06
Sat., Nov. 6.....	2:20	8.36	14:57	21:03
Sun., Nov. 7.....	15.2	0.0	14.8	0.4
Mon., Nov. 8.....	16.2	9.20	15:29	21:37
Tues., Nov. 9.....	16.2	1.0	15.7	-0.2
Wed., Nov. 10.....	3:43	10:04	16:13	22:23
Thurs., Nov. 11.....	16.8	-1.6	16.2	-0.5
Fri., Nov. 12.....	4:26	10:50	16:58	23:09
Sat., Nov. 13.....	12.8	1.8	16.3	-0.5
Sun., Nov. 14.....	5:12	11:37	17:45	23:55
Mon., Nov. 15.....	16.9	-1.5	16.0	0.0
Tues., Nov. 16.....	6:00	12:26	18:35	0.0
Wed., Nov. 17.....	6.3	1.5	15.4	0.0
Thurs., Nov. 18.....	0.50	6.51	13:18	19:30
Fri., Nov. 19.....	0.8	15.3	0.1	14.6
Sat., Nov. 20.....	1:46	7.47	14:15	20:30
Sun., Nov. 21.....	1.7	14.1	13.7	13.7
Mon., Nov. 22.....	2.8	8.84	15:18	21:40
Tues., Nov. 23.....	2.6	13.0	2.1	13.1
Wed., Nov. 24.....	3:59	10:10	16:24	22:55
Thurs., Nov. 25.....	3.1	12.2	2.8	12.8
Fri., Nov. 26.....	5:10	11:07	17:13	23:41
Sat., Nov. 27.....	3.3	11.9	3.1	13.1
Sun., Nov. 28.....	0:07	6:16	12:43	18:37
Mon., Nov. 29.....	12.8	3.0	12.1	3.1
Tues., Nov. 30.....	1:08	7.08	13:12	19:21
Wed., Nov. 1.....	1.3	2.5	12.6	2.9
Thurs., Nov. 2.....	15.8	8.03	14:30	20:18
Fri., Nov. 3.....	13.5	2.0	13.1	2.6
Sat., Nov. 4.....	2:40	8:47	15:11	21:03
Sun., Nov. 5.....	1.9	1.5	13.5	2.3
Mon., Nov. 6.....	3:18	9:26	15:48	21:43
Tues., Nov. 7.....	14.1	1.1	13.7	2.1
Wed., Nov. 8.....	10:05	10:54	16:24	22:10
Thurs., Nov. 9.....	14.2	0.9	13.9	2.1
Fri., Nov. 10.....	4:28	10:42	16:58	22:59
Sat., Nov. 11.....	14.2	0.9	13.8	2.2
Sun., Nov. 12.....	5:02	11:27	17:42	23:37
Mon., Nov. 13.....	14.1	1.0	13.7	2.4
Tues., Nov. 14.....	5:36	11:59	18:08	24:08
Wed., Nov. 15.....	13.8	1.4	13.4	2.4
Thurs., Nov. 16.....	6:12	12:18	18:38	24:46
Fri., Nov. 17.....	2.8	13.4	1.8	14.9
Sat., Nov. 18.....	0:58	6:49	13:19	19:26
Sun., Nov. 19.....	3.2	12.9	2.3	12.7
Mon., Nov. 20.....	14.4	1.30	14:04	20:08
Tues., Nov. 21.....	3.6	12.3	2.8	12.8
Wed., Nov. 22.....	2:32	8:17	14:52	20:57
Thurs., Nov. 23.....	3.9	11.8	3.3	12.7
Fri., Nov. 24.....	3:28	9:15	15:46	21:53
Sat., Nov. 25.....	4.0	11.5	3.5	12.3

## DECEMBER.

DATE.	Time and height of high and low water.			
	4:26	10:10	16:44	22:53
Wed., Dec. 1.....	3.7	7.5	16.4	17.5
Thurs., Dec. 2.....	5:25	11:27	17:41	23:52
Fri., Dec. 3.....	6.3	11.8	3.2	13.3
Sat., Dec. 4.....	6:23	12:30	18:39	24:51
Sun., Dec. 5.....	7.3	12.5	2.6	12.6
Mon., Dec. 6.....	0:49	7:16	13:26	19:33
Tues., Dec. 7.....	14.1	1.3	13.4	1.8
Wed., Dec. 8.....	1:42	8:07	14:20	20:25
Thurs., Dec. 9.....	2.0	0.1	14.8	1.0
Fri., Dec. 10.....	2:33	8:57	15:10	21:17
Sat., Dec. 11.....	15.8	-0.7	15.3	0.3
Sun., Dec. 12.....	3:23	9:46	15:59	22:06
Mon., Dec. 13.....	15.8	-0.5	15.9	-0.2
Tues., Dec. 14.....	4:12	10:36	16:48	22:56
Wed., Dec. 15.....	16.8	-1.7	16.2	-0.3
Thurs., Dec. 16.....	5:01	11:24	17:37	23:48
Fri., Dec. 17.....	16.7	1.6	16.2	-0.1
Sat., Dec. 18.....	5:51	12:14	18:28	24:39
Sun., Dec. 19.....	16.2	-1.1	15.8	0.0
Mon., Dec. 20.....	6:40	6:43	13:04	19:19
Tues., Dec. 21.....	0.5	5.1	-0.3	13.0
Wed., Dec. 22.....	1:34	7:37	13:56	20:13
Thurs., Dec. 23.....	1.2	14.4	0.7	14.4
Fri., Dec. 24.....	2:31	8:35	14:52	21:12
Sat., Dec. 25.....	2.0	1.0	15.0	13.0
Sun., Dec. 26.....	3:32	9:40	15:52	22:16
Mon., Dec. 27.....	2.7	12.3	2.8	13.0
Tues., Dec. 28.....	4:34	10:52	16:53	23:22
Wed., Dec. 29.....	3.1	11.7	3.5	12.6

The times are placed on the upper line of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is designated on sailing charts as the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for 15° meridian 75° W. The hours of the day are numbered consecutively from 0 to 24 (midnight to 24 (11:00 p. m.)). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the true time reckoning; for instance: 15:47 is 3:47 p. m.



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., October 31, 1915.)

There were no vessels arriving during the week, for transit of the Canal.

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	To
Oct. 27.....	Wegadesk.....	Earn Line.....	Norfolk.	Oct. 29.....	Albanian.....	Leyland Line.....	Liverpool.
Oct. 29.....	Belgian.....	Leyland Line.....	Liverpool.	Oct. 30.....	Wegadesk.....	Earn Line.....	Felton, Cuba.
				Oct. 31.....	Hermod.....	Earn Line.....	New York.
				Oct. 31.....	Bufoad.....	U. S. Army transport.	Jacksonville.
*EXPECTED ARRIVALS.				*EXPECTED DEPARTURES.			
Nov. 1.....	Niagra.....	French Line.....	Bordeaux.	Nov. 1.....	Niagra.....	French Line.....	Bordeaux.

\*Other than vessels which arrived for transit through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

*ARRIVALS.				*DEPARTURES.			
Oct. 25.....	Jamaica.....	Pacific Steam Nav. Co.....	Guayaquil.	Oct. 26.....	Capt. A. F. Lucas.....	Standard Oil Co.....	San Francisco.
Oct. 27.....	Tricolor.....	W. Wilhelmsen.....	Tacoma.	Oct. 26.....	Berge No. 93.....	Standard Oil Co.....	San Francisco.
				Oct. 26.....	Kiyo Maru.....	Toyokisen Kaisha.....	Hongkong.
				Oct. 27.....	Lansing.....	Uni on Oil Company.....	San Luis.
				Oct. 27.....	Chile.....	Pacific Steam Nav. Co.....	Valparaiso.
EXPECTED ARRIVALS.				EXPECTED DEPARTURES.			
					Snoedonian.....	S. S. Goidelian & Canadian.	
					H. Luckenbach.....	Luckenbach Line.....	San Francisco.
					Isabela.....	N. Y. & Porto Rican Co.....	
					Limari.....	South American S. S. Co.....	Talcahuano.
					Urubamba.....	Peruvian Line.....	Valparaiso.
					Guatemala.....	Pacific Steam Nav. Co.....	Valparaiso.
					Jamaica.....	Pacific Steam Nav. Co.....	Guayaquil.
					Tricolor.....	W. Wilhelmsen.....	Guayaquil.

\*Including vessels arriving for transit through the Canal.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, October 30, 1915:

DAY AND DATE.	STATIONS.				
	Vigia.	Alhajuela.	Gatun.	Gatun Lakes.	Miraflores Lake.
Sua., Oct. 24.....	129.10	94.72	86.26	86.19	54.47
Mon., Oct. 25.....	127.90	94.15	86.00	86.05	54.33
Tues., Oct. 26.....	126.80	93.08	86.03	86.07	54.20
Wed., Oct. 27.....	131.50	96.51	86.07	86.09	54.23
Thurs., Oct. 28.....	129.00	94.50	86.04	86.08	54.31
Fri., Oct. 29.....	127.30	93.60	85.98	86.05	54.25
Sat., Oct. 30.....	135.55	99.50	86.16	86.10	54.30

Heights of low water to nearest foot.....

125 0 91.0

## Rainfall from October 1 to 23, 1915, Inclusive.

STATIONS.	Maximum in one day.		Date.	Total for period.
	Ins.	Ins.		
<b>Pacific Section—</b>				
Balboa.....	2.17	8.05		
Balboa Heights.....	2.07	8.01		
Miraflores.....	2.62	9.13		
Pedro Miguel.....	2.84	11.76		
Rio Grande.....	1.51	2.89		
<b>Central Section—</b>				
Culebra.....	1.17	7.02		
*Camacho.....	2.21	2.97		
Empire.....	1.72	6.95		
Camboa.....	1.03	7.30		
*Juan Mina.....	2.45	10.76		
Alhajuela.....	1.39	6.89		
*Vigia.....	1.99	6.92		
Frijoles.....	1.87	8.24		
*Monte Lirio.....	4.60	12.02		
<b>Atlantic Section—</b>				
Gatun.....	2.25	10.12		
*Brazos Brook.....	1.93	10.51		
Colon.....	4.69	14.05		
*Bocas del Toro.....				

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values midnight to midnight.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Thursday to New Orleans, for all States. Due at New Orleans on the following Tuesday.

Every Friday or Saturday to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week—on Friday when the vessel has been sent through the Canal to Balboa from New York, and on Saturday if the vessel has been sent to Balboa. The day of departure from Cristobal is bulletined by the Panama Railroad Company several days in advance. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE—The sailings on Monday, November 15 and December 13, will not land mail in New York until Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday boat to New Orleans. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vess.	Line.	Sails.	Arrives.
Santa Marta.....	U. F. C.	Oct. 27.....	Nov. 3
Advance.....	P. R. R.	Oct. 28.....	Nov. 4
Metapan.....	U. F. C.	Oct. 30.....	Nov. 8
Almirante.....	U. F. C.	Nov. 3.....	Nov. 10
Panama.....	P. R. R.	Nov. 4.....	Nov. 10
Pastores.....	U. F. C.	Nov. 6.....	Nov. 14
Zacapa.....	U. F. C.	Nov. 10.....	Nov. 17
Allianca.....	P. R. R.	Nov. 11.....	Nov. 17
Calamares.....	U. F. C.	Nov. 13.....	Nov. 21

Carrillo.....	U. F. C.	Nov. 17.....	Nov. 24
Colon.....	P. R. R.	Nov. 18.....	Nov. 24
Tenadores.....	U. F. C.	Nov. 20.....	Nov. 28
Santa Marta.....	U. F. C.	Nov. 24.....	Dec. 1
Advance.....	P. R. R.	Nov. 26.....	Dec. 3
Metapan.....	U. F. C.	Nov. 27.....	Dec. 6

## CRISTOBAL-COLON TO NEW YORK.

Carrillo.....	U. F. C.	Nov. 4.....	Nov. 11
Colon.....	P. R. R.	Nov. 5.....	Nov. 11
Tenadores.....	U. F. C.	Nov. 8.....	Nov. 15
Santa Marta.....	U. F. C.	Nov. 11.....	Nov. 18
Advance.....	P. R. R.	Nov. 12.....	Nov. 19
Metapan.....	U. F. C.	Nov. 15.....	Nov. 23
Almirante.....	U. F. C.	Nov. 18.....	Nov. 25
Panama.....	P. R. R.	Nov. 19.....	Nov. 25
Pastores.....	U. F. C.	Nov. 22.....	Nov. 29
Zacapa.....	U. F. C.	Nov. 25.....	Dec. 2
Allianca.....	P. R. R.	Nov. 27.....	Dec. 3
Calamares.....	U. F. C.	Nov. 29.....	Dec. 6
Carrillo.....	U. F. C.	Dec. 2.....	Dec. 9
Colon.....	P. R. R.	Dec. 4.....	Dec. 10

## NEW ORLEANS TO CRISTOBAL-COLON.

Atenas.....	U. F. C.	Oct. 27.....	Nov. 4
Cartago.....	U. F. C.	Oct. 30.....	Nov. 3
Turrialba.....	U. F. C.	Nov. 3.....	Nov. 10
Heredia.....	U. F. C.	Nov. 6.....	Nov. 11
Abangarez.....	U. F. C.	Nov. 10.....	Nov. 17
Paraisima.....	U. F. C.	Nov. 13.....	Nov. 18
Atenas.....	U. F. C.	Nov. 17.....	Nov. 24
Cartago.....	U. F. C.	Dec. 11.....	Dec. 16
Cartago.....	U. F. C.	Nov. 20.....	Nov. 25
Turrialba.....	U. F. C.	Nov. 24.....	Dec. 1
Heredia.....	U. F. C.	Nov. 27.....	Dec. 2
Abangarez.....	U. F. C.	Dec. 1.....	Dec. 8
Paraisima.....	U. F. C.	Dec. 4.....	Dec. 9
Atenas.....	U. F. C.	Dec. 8.....	Dec. 15

## CRISTOBAL-COLON TO NEW ORLEANS.

Paraisima.....	U. F. C.	Nov. 4.....	Nov. 9
Atenas.....	U. F. C.	Nov. 4.....	Nov. 11
Cartago.....	U. F. C.	Nov. 11.....	Nov. 16
Turrialba.....	U. F. C.	Nov. 11.....	Nov. 18
Heredia.....	U. F. C.	Nov. 18.....	Nov. 23
Abangarez.....	U. F. C.	Nov. 18.....	Nov. 25
Paraisima.....	U. F. C.	Nov. 25.....	Nov. 30
Atenas.....	U. F. C.	Dec. 25.....	Dec. 2
Cartago.....	U. F. C.	Dec. 2.....	Dec. 7
Turrialba.....	U. F. C.	Dec. 2.....	Dec. 9
Heredia.....	U. F. C.	Dec. 9.....	Dec. 14
Abangarez.....	U. F. C.	Dec. 9.....	Dec. 16





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds, and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Canal Record Index.

The index to Volume VIII of THE CANAL RECORD in form suitable for binding is now ready for distribution. It will be sent free, on application, to such persons, institutions, libraries, etc., as desire to preserve their copies of THE CANAL RECORD in book form. Applications should be made either to THE CANAL RECORD, Balboa Heights, Canal Zone, or to the Chief of Office, The Panama Canal, Washington, D. C.

#### The Slide Situation.

Excavation from the bases of the Culebra slides during the week ending at 6 a. m., Tuesday, November 9, amounted to 237,025 cubic yards. Other excavation from the Cut during the period amounted to 19,237 cubic yards, making a total for the week of 256,262 cubic yards. In addition, 31,960 cubic yards were re-handled. The excavation by the several dredges during the week was as follows:

Gambao.....	15-yard dipper.....	73,155
Paraiso.....	15-yard dipper.....	60,325
Cascadas.....	15-yard dipper.....	38,235
Corozal.....	Ladder.....	42,940
Mindi.....	5-yard dipper.....	6,275
No. 88.....	Pipeline suction.....	31,960
Culebra.....	Sauging suction.....	19,237
Marmal.....	Belgian ladder.....	16,095

The total excavations in the preceding two weeks were 273,945 and 257,029 cubic yards, respectively.

There is nothing in the conditions to warrant any prediction as to the probable date of the opening of the Canal.

#### Paying More for Coal than for Tolls.

The Ellerman and Bucknall steamship *Matoppe*, which arrived at Balboa in the morning of November 1 on the way from San Francis-

co for London, cleared from Balboa on Saturday, November 6, after taking on 900 tons of coal from the Panama Railroad, and will proceed by way of the Strait of Magellan. According to a statement by her first officer, she uses about 36 tons of coal a day and makes about 10 knots an hour. The distance from Balboa to London by way of the Strait of Magellan is about 11,500 miles, which would mean approximately 43 steaming days. The coal she took at Balboa will last her 25 days, or slightly over half of the voyage.

The 900 tons of coal taken at Balboa cost the ship \$6,300. Had she been able to go through the Canal her tolls, at \$1.20 per ton on 4,476 net tons, Panama Canal measurement, would have been \$5,371.20. The coaling for half of the long voyage cost more than the Canal tolls would have been. To go from Cristobal to London would require about 19 days for the *Matoppe*, with a coal consumption of 684 tons, costing, at \$7 a ton, \$4,788. To have gone through the Canal, tolls and coal, would have aggregated \$10,000, if the coal had been bought at Balboa, which would have been at least \$2,500 cheaper than the voyage through the Strait of Magellan, on the cost of coal alone. And if the Canal had been open the vessel could have secured coal at Cristobal for \$1 less per ton, which would have increased the saving on fuel to over \$3,000.

The case of the *Matoppe* has been paralleled by the *Arna*, and the *Rondo*, and many other vessels which have been diverted by the closing of the Canal. They show strikingly the economy which is afforded when the Canal is open.

#### Preparations for Placing Armor Cubes on East Breakwater.

Orders have been issued for the segregation of 75 steel flat cars of 50-tons capacity for service in hauling concrete blocks for armoring the East Breakwater. The cars will be stencilled "E. B.," like the Lidgerwood flat cars now used for hauling rock from the quarry at Sosa Hill to the breakwater. The blocks, which are cubes, seven feet on the edge, contain approximately 12.3 cubic yards each and weigh about 25 tons. Two blocks to the car will be the rule in hauling them. Barge transportation through the Canal, from Gambao to the East Breakwater, has been suggested but it is expected that the most of the transportation will be by rail, principally for the reason that the blocks can be placed more advantageously from cars, on the trestle above the fill, than from barges, and because the dredging and harbor services require the use of all available tugs and barges.

Since the pouring of the blocks was begun at Gambao, on Saturday, October 9, a total of 412 blocks had been manufactured up to the morning of November 1. The plant for their making is situated on a fill directly east of the Panama Railroad tracks at Gambao, made principally of soft earth spoil from dry

excavation in Culebra Cut, and the softness of the earth has caused the contractor's forces some trouble in the handling of the blocks; these conditions and the breaking of a locomotive crane used for handling the materials at the mixing plant have caused delays in the manufacture. The contract calls for the manufacture of 10,000 blocks, at \$4.7355 per block.

#### Measurement of Vessels for the Levy of Tolls.

Inquiry has been made whether the certificate of measurement of a vessel for the levy of tolls at the Suez Canal is of assistance in determining the net tonnage of a vessel according to the Panama Canal rules. The Suez certificate is not exactly like the Panama certificate and the latter has, of course, to be made out for all vessels using the Canal, regardless of other certificates of measurement or registry which they may possess. It frequently happens, however, that the measurements contained in other certificates are of assistance to the Panama Canal measurers and expedite materially the issuance of the Canal certificate. On the other hand, any vessel presenting herself at the Canal without a Canal certificate would probably meet with some delay while the certificate was being prepared; hence the vessel would do best to secure her certificate while lying in port, before coming to the Canal. There are designated authorities in all the principal maritime countries who can issue Panama Canal certificates, and all that the Canal measurers have to do with such a certificate is to check it, perhaps correct it, which would normally require not more than an hour. A fee is usually charged by the officials in foreign countries for issuing a Canal certificate, but no fee is charged in any United States port or at the Canal.

In this connection, attention is called to the fact that it is desirable for a ship to have a certificate of measurement according to the rules for registration in the United States, in addition to her Panama Canal certificate. This is for the ship's protection. Tolls on laden vessels are levied at \$1.20 per net ton according to Canal measurement, but the amount collectible shall not be in excess of the equivalent of \$1.25 per net ton on the basis of United States registry. Since this ruling has been established, the form of measurement for registry in the United States has been changed somewhat, most notably by a circular issued by the Commissioner of Navigation on March 16, 1915, which exempted bridge-deck and certain closed-in spaces from measurement. Operators are advised to keep themselves informed of the status of measurement for registry in the United States, in order that they may check the Canal measurers' determination of United States net tonnage according to their interpretation of the rules.

## RECEIPTS AND EXPENSES.

Cost of Operation and Maintenance in September  
Exceeded Tolls.—Comparative Figures.

During the month of September, as in August, the expenses charged to the operation and maintenance of the Canal were in excess of the tolls collected on vessels making use of the Canal.

The shortage was \$63,177.33; and it is interesting to note that for September a year ago, the second month of Canal operation, the tolls exceeded the cost of operation and maintenance by \$63,601. The loss in the corresponding month of the second year was

almost the same as the gain in September, 1914.

The Canal was closed, on account of slides in the Cut, during nearly one-half of September, 1915; the last vessel to go through from the Atlantic was the *Tampico*, entering on September 15, and the last to make the transit from the Pacific was the *Ormiston*, entering on September 17. In addition, the cost of the dredging operations in the Cut during September, 1915, was \$259,604.07, as compared with \$31,545.94 last year. The charges for the dredging in the Cut were more than one-half of the total charges for operation and maintenance in September, 1915.

For operation and maintenance proper,

not including the proportionate share of the overhead expenses, the cost was \$339,559.92. Of this, the \$259,604.07 charged to dredging in Gaillard Cut was over three-fourths of the total.

A summary of the charges for operation and maintenance in September, 1915, as compared with August, 1915, and September, 1914, and with the fiscal year to date, this year and last year, is given in the following table.

The "proportion of overhead expenses", following the summary of operations and maintenance proper, is approximately one-third of the total Canal overhead charges. It is made up of costs for administration, sanitary work, and civil government:

ITEMS.	This m nth	Last month	This month last year.	Fiscal Year to Date.	
				This year.	Last year.
Marine Division:					
Admeasurement of vessels.....	\$1,131.52	\$927.40	\$907.36	\$2,999.85	\$1,728.43
Local inspection.....	271.30	273.46	253.75	893.06	838.78
Aids to navigation.....	4,134.28	3,593.34	3,238.74	11,530.17	12,136.19
Pilotage.....	5,877.82	6,835.24	3,243.74	19,713.32	5,259.20
Operation of harbor tugs—balance.....	3,667.86	2,088.86		9,323.61	
Total, Marine Division.....	\$15,082.68	\$13,718.30	\$7,643.72	\$44,369.01	\$19,962.60
Locks operation and maintenance:					
Gatun Locks:					
Superintendence.....	\$951.47	\$1,134.90	\$1,418.92	\$3,465.57	\$4,163.58
Operation.....	10,595.58	9,878.21	9,536.37	29,400.12	23,082.65
Maintenance of machinery and equipment.....	13,914.93	31,742.87	4,766.86	59,708.73	13,589.51
Maintenance of structure.....	494.92	304.80	3,218.44	1,750.58	4,580.31
Miscellaneous supplies and expenses.....	244.17	361.05	312.53	719.31	767.31
Total, Gatun Locks.....	\$26,201.07	\$43,421.83	\$19,253.12	\$95,044.31	\$46,153.36
Gatun Spillway:					
Operation.....	\$122.34	\$70.89	\$77.25	\$280.26	\$357.37
Maintenance of machinery and equipment.....	21.59	35.75	118.12	166.37	1,506.53
Maintenance of structure.....		85.08	415.75	85.08	430.85
Total, Gatun Spillway.....	\$143.93	\$191.72	\$611.12	\$531.71	\$2,294.75
Pedro Miguel Lock:					
Superintendence.....	\$1,379.24	\$1,573.84	\$1,087.81	\$4,475.13	\$27,514.75
Operation.....	5,855.51	6,224.64	9,124.67	18,713.80	24,294.97
Maintenance of machinery and equipment.....	4,001.49	5,069.04	2,707.56	14,133.09	7,026.97
Maintenance of structure.....	2,187.85	1,849.47	544.23	4,786.86	1,301.12
Miscellaneous supplies and expenses.....	231.15	222.99	173.54	666.46	410.53
Total, Pedro Miguel Lock.....	\$13,655.24	\$14,939.98	\$13,637.81	\$42,775.34	\$35,548.34
Pedro Miguel Dam:					
Maintenance.....					
Mirafleres Locks:					
Superintendence.....	\$1,388.13	\$1,624.64	\$1,620.27	\$4,462.45	\$3,416.83
Operation.....	7,140.81	7,863.89	9,142.09	23,070.80	27,627.34
Maintenance of machinery and equipment.....	5,038.24	4,057.03	5,045.49	12,600.27	10,640.13
Maintenance of structure.....	1,440.24	1,215.32	2,066.70	3,333.05	2,726.91
Miscellaneous supplies and expenses.....	183.71	346.09	337.43	726.14	755.19
Total, Mirafleres Locks.....	\$15,191.13	\$15,106.97	\$18,211.98	\$44,192.71	\$45,166.40
Mirafleres Spillway and East Dam:					
Operation.....		\$16.09	\$11.41	\$46.09	\$634.95
Maintenance of machinery and equipment.....	\$90.31	43.47	3,303.23	183.36	6,348.22
Maintenance of structure.....	49.85		19.18	92.10	97.62
Total, Mirafleres Spillway and East Dam.....	\$140.16	\$89.56	\$3,333.82	\$321.55	\$7,080.79
Mirafleres West Dam:					
Maintenance.....		\$207.98	\$2.32	\$207.98	\$2.32
Total, lock operation and maintenance.....	\$55,331.53	\$73,958.04	\$55,050.07	\$183,073.60	\$136,245.96
Dredging:					
Atlantic entrance.....	\$722.87	\$730.42	\$10,250.15	\$4,232.56	\$33,563.14
Gatun Lake.....	259,604.07	257,593.47	31,545.94	698,067.11	141,702.01
Gaillard Cut.....				9,286.43	1,245.91
Mirafleres Lake.....	443.96	4,727.55			
Pacific entrance.....					
Total, dredging.....	\$260,770.90	\$263,051.44	\$41,796.09	\$711,586.10	\$176,511.06
Gatun Dam, maintenance.....	\$2,105.01	2,045.33	\$1,696.40	\$6,412.17	\$3,794.62
Removal of floating obstructions.....	1,560.83	1,614.34	1,552.79	4,911.18	3,413.32
Gatun-Mindil Levee, maintenance.....			9,393.75		21,161.41
Colon West Breakwater, maintenance.....	182.86			182.86	
Colon East Breakwater, maintenance.....					
Naos Island Breakwater, maintenance.....		29.25	244.23	29.25	322.61
Damages to vessels in locks.....	220.71	365.61		758.21	
Damages to vessels in Canal.....					
Operation of floating cranes.....	3,932.94			3,932.94	
Maintenance of transportation tracks.....	372.46	1,608.03	694.20	3,462.31	2,187.08
Total, operation and maintenance.....	\$339,559.92	\$356,387.54	\$118,071.44	\$958,717.63	\$363,703.66
Proportion of overhead expenses.....	159,505.72	203,581.82	82,928.36	556,112.95	231,521.34
Total.....	\$499,065.64	\$559,969.36	\$201,999.80	\$1,514,830.58	\$595,225.00
Tolls earned in excess of expenses.....	348,730.30	496,792.03	265,600.80	1,439,634.07	361,601.00
Expenses in excess of tolls earned.....			63,601.00		
Total.....	\$150,335.34	\$63,177.33		\$75,196.51	\$233,624.00

## SHED FOR PIER 18, BALBOA.

Designed to Have Pleasing Appearance as Well as Commercial Sufficiency.

The sheds on piers No. 7 at Cristobal and No. 18 at Balboa, as explained in THE CANAL RECORD of last week, are to be finished with more regard to architectural and scenic fitness than was given to the piers and wharves of earlier construction on the Isthmus. The shore end elevation of the shed for pier No. 7 was reproduced last week, and elevations of the shore end of pier No. 18 are presented herewith.

On pier No. 18 part of the first transverse bay will be used as a kind of pierhouse at the land end, providing space for toilets and time-

keepers' offices on the first floor, with a mezzanine floor for additional offices. The windows shown have been put in for the purpose of lighting these rooms. They will be fitted with steel sash and wire glass, for the sake of strength and fireproofing, and elsewhere in the shed there will be no windows, except one to light a toilet room at the extreme outer

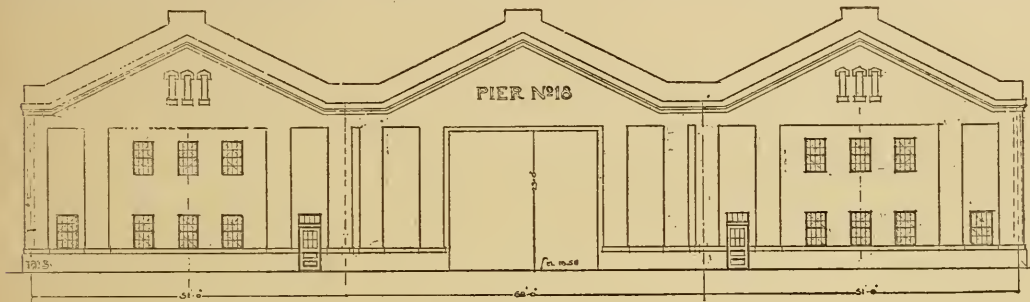
end of the pier, and small, fixed windows in the gable-ends of the two side bays. The main floor area will be lighted by skylights.

The shed is being built in three longitudinal bays. The two side bays will be 51 feet in width, and the center bay 58 feet in width, giving a total width of 160 feet. Each bay is spanned by Fink trusses and will be roofed with red cement tile. Along the center bay will be a monitor, for light and ventilation. The walls at the ends of the pier rise above the roof, but the outline parallels the lines of the roof. The tops of the walls are 31 feet above the level of the floor at the lowest points, and 43½ feet above at the highest points. The flattened points of the gable-

above the door in the central bay, are to be of bronze, two feet high, and the year mark at the lower left corner will be in bronze numerals 10 inches high.

The 1,000-foot length of the shed will be divided into 34 transverse bays, all of which except one at each end will be fitted with Ogden steel doors on each side. The bays without doors are those to be occupied by the office and toilet rooms. Letters, A to G, will be used to indicate the berths along the sides and sea end of the pier, and the doors will be marked by numbers, 1 to 10, for each berth.

The walls of the shed will be built of poured concrete, reinforced. Their normal thickness



SHORE END ELEVATION OF SHED FOR PIER NO. 18, BALBOA. end triangles are six feet across.

The sea end of the shed will have the same general façade as the land end, but the windows in the ends of the side bays will be supplanted by Ogden steel doors, 24 feet wide by 23 feet high, of the same dimensions as the doors in the sides of the shed.

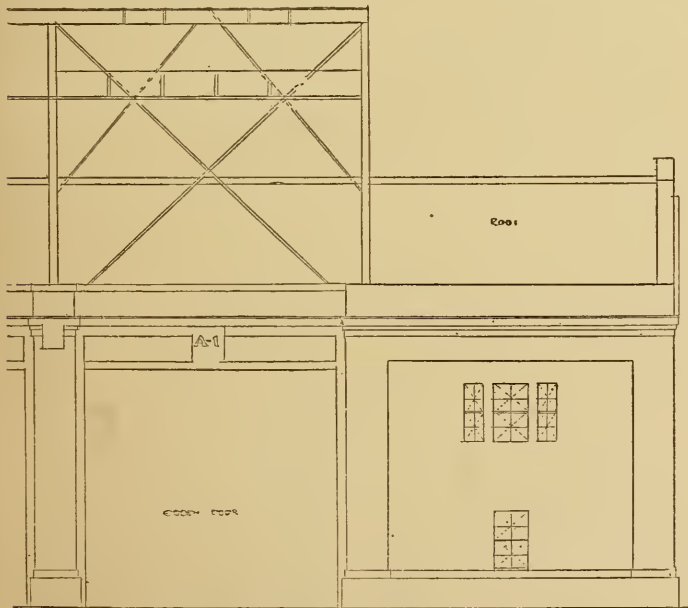
The characters giving the name of the pier,

will be six inches, but this will be increased at the base and cornices. Steel unloader masts will extend above the tops of the side walls. The clear space between the shed and the face of the pier will be about 20 feet, and the clear space at the sea end will be approximately 33 feet.

#### Index and Numerical List of Official Circulars.

An index and a numerical list of the official circulars of The Panama Canal have been issued by the Executive Office and distributed to those on the mailing list for circulars. They include additions and revisions to the previous index and list up to October 20, 1915, and cover all the general official circulars issued by the Governor since The Panama Canal succeeded the Isthmian Canal Commission, on April 1, 1914, and in effect as of October 20. The index contains five pages, eight by 10½ inches, and the numerical list three pages, both lists being punched for insertion in the standard binders for the circulars. The matter is printed in double columns of nonpareil type, the last pages being filled out with blanks to provide space for additional entries before the issuance of the next revised lists. The Record Bureau has a limited number of extra copies on hand, for supplying needs not met by the regular distribution. In this connection, it is suggested that the offices keeping files of these circulars have them checked against the numerical list to make sure that they are complete. If circulars are missing extra copies may be obtained from the Record Bureau. It is also suggested that offices which may have duplicate or otherwise superfluous files of the circulars turn them into the Record Bureau, for reissue.

The Marine Superintendent and the Captains of Ports and the pilot in charge of lighthouses spent Tuesday, November 9, in investigating a possible location of a signal station along the Canal channel between Gamboa and Gatun Locks.



ELEVATION OF SIDE OF PIER NO. 18, BALBOA, AT SHORE END.



## SIX SPILLWAY GATES OPEN.

Following Freshets, Maximum Discharge at Gatun Was 71,334 Cubic Feet per Second.

The heaviest freshets and sharpest rise which have occurred on the Chagres River and in Gatun Lake since the Canal was placed in commercial operation were experienced in the three days from October 30 to November 1, inclusive. In order to maintain the level of the lake at 86 feet it was necessary to keep six gates of the Gatun Spillway open for a continuous period of 7½ hours, which period was preceded and followed by the operation of five gates for periods of 7½ and three hours, respectively, and by the operation of four gates for a period of two hours. When the six gates were open the maximum recorded discharge was at the rate of 71,334 cubic feet per second. The spillway is provided with 14 gates.

General rains over the lake and river valley began about 3 to 5 p. m. on October 30, and by 12.30 a. m. that night the Chagres had risen 8.90 feet at Vigia and 6.66 feet at Alhajuela. During about the same period the surface of the lake at Gatun rose from 86.00 to 86.11. Five gates of the spillway were open continuously from 8 p. m. on October 30 to 3 in the morning of the following day. By 1 p. m. of the 31st the river had fallen to about three feet above low water stages, the lake was at 86.00 again, and was held there with one gate open.

Recurring rains through the afternoon of the 31st caused another heavy rise. The Chagres rose again, about 11 feet at Vigia and eight feet at Alhajuela. At Juan Mina the lake rose from 86.01 to 87.42. At Gamboa the lake rose in the same time from 85.98 to 86.33. At Gatun the surface rose from 86.00 at 1 p. m. on the 31st to a maximum elevation of 86.18 at 1 a. m., November 1. It was be-

tween 7.45 p. m. and 3 a. m. of this night that the six gates were in use.

The maximum momentary discharge at Alhajuela was at the rate of 27,721 cubic feet per second, and the maximum 12 and 36-hour discharges were at the rates of 20,790 and 13,930 cubic feet per second, respectively. During the 42-hour period from 3 p. m. on October 30 to 9 a. m. on November 1, the passage of water through the river at Alhajuela amounted to 1,890,000,000 cubic feet. Starting at the lake elevation of 86.00 feet on October 30, this flow would have raised the surface to 86.43 if there had been no spillway operation. During the period, however, the spillway discharged 6,956,000,000 cubic feet, enough to have raised the surface of the lake to 87.53. The spillway waste was 3.68 times the Alhajuela discharges, which indicates that a large part of the rise was due to rainfall on the lake and over other parts of the watershed than the valley of the Chagres.

During 40 hours beginning at 5 p. m., October 30, the spillway was in continuous operation, with from one to six gates open, with an average for the period of slightly over four. The total operation was 164 gate-hours for that period.

On account of the tendency of the spillway discharge to interfere with the effective operation of the turbines of the hydroelectric plant, which discharge into the spillway discharge channel, it is not desired to operate six gates except in case of emergency. In order to avoid this, the lake has been lowered to elevation 85 feet and this level is to be maintained during November, which is the month of the most freshets. In December, before the beginning of the dry season, the surface will be raised slowly, so that there may be an elevation of close to 87 feet at the beginning of the dry season.

## WEATHER CONDITIONS, CANAL ZONE, OCTOBER, 1915.

The rainfall for the month was above normal everywhere, except at Balboa Heights, Frijoles, and Trinidad. The totals ranged from 10.29 inches at Balboa to 21.86 inches at Colon.

The maximum amount of precipitation recorded on any one day was 4.69 inches, at Colon on the 16th, and daily rains in excess of four inches occurred also at Monte Lirio on the 9th, and at Rio Grande, Empire, Camacho, and Vigia on the 31st. Heavy rains occurred generally throughout the Zone on the 2nd and 31st of the month.

The estimated rainfall over the Gatun Lake watershed was 17 per cent above the normal, or 17.02 inches against a 15-year average of 14.52 inches.

The air temperature at Balboa Heights was approximately normal, while at Colon it was almost two degrees Fahrenheit above the average.

The atmospheric pressure and evaporation were below normal, the relative humidity and wind movement were approximately normal, while the daytime cloudiness and temperature of the sea water were above normal on both coasts.

No fogs were observed at either coast station, but several night and early morning fogs occurred at interior stations, 75 per cent of which were dissipated by 6.30 a. m., 96 per cent by 7.30 a. m., and all fogs observed either lifted or were dissipated by 8 a. m.

The elevations of Gatun Lake, in feet above mean sealevel, were as follows: Mean for the month, 86.02; maximum, on the 9th and 31st, 86.18; minimum, on the 20th and 21st, 85.95; evaporation from the lake surface, 4.228 inches.

The following is a summary of meteorological conditions at the Atlantic and Pacific ends of the Canal Zone in October:

STATIONS.	Pressure (reduced to sea level at 24 hours)	Temperature.						Precipitation.				Wind.			
		Mean.		Maximum.		Minimum.		Total inches.	Station average.	Days of 0.1 inch or more.	Total movement (miles).	Prevailing direction.	Max. velocity in miles.	Direction.	Date.
		Mean.	Date.	Maximum.	Date.	Minimum.	Date.								
Colon.....	29.826	80.8	90	Oct. 26	74	Oct. 16	90	21.86	14.72	29	5,436	S. E.	30	S. W.	Oct. 31
* Balboa Heights ...	29.821	79.1	89	Oct. 15	72	Oct. 25	92	10.51	10.53	25	4,698	N. W.	35	N. W.	Oct. 23

\*Formerly Ancon.

## THANKSGIVING.

## The President's Proclamation.

By the President of the United States of America. A Proclamation:

It has long been the honoured custom of our people to turn in the fruitful autumn of the year in praise and thanksgiving to Almighty God for his many blessings and mercies to us as a nation. The year that is now drawing to a close since we last observed our day of national thanksgiving has been, while a year of discipline because of the mighty forces of war and of change which have disturbed the world, also a year of special blessing for us.

Another year of peace has been vouchsafed us; another year in which not only to take thought of our duty to ourselves and to mankind but also to adjust ourselves to the many responsibilities thrust upon us by a war which has involved almost the whole of Europe. We have been able to assert our rights and the rights of mankind without breach of friendship with the great nations with whom we have had to deal; and while we have asserted rights we have been able also to perform duties and exercise privileges of succour and helpfulness which should serve to demonstrate our desire to make the offices of friendship the means of truly disinterested and unselfish service. Our ability to serve all who could avail themselves of our services in the midst of crisis has been increased, by a gracious Providence, by more and more abundant crops; our ample financial resources have enabled us to steady the markets of the world and facilitate necessary movements of commerce which the war might otherwise have rendered impossible; and our people have come more and more to a sober realization of the part they have been called upon to play in a time when all the world is shaken by unparalleled distresses and disasters. The extraordinary circumstances of such a time have done much to quicken our national consciousness and deepen and confirm our confidence on the principles of peace and freedom by which we have always sought to be guided. Out of darkness and perplexity have come firmer counsels of policy and clearer perceptions of the essential welfare of the nation. We have prospered while other peoples were at war, but our prosperity has been vouchsafed us, we believe, only that we might the better perform the functions which war rendered it impossible for them to perform.

Now, therefore, I, Woodrow Wilson, President of the United States of America, do hereby designate Thursday the twenty-fifth of November next as a day of thanksgiving and prayer, and invite the people throughout the land to cease from their wonted occupations and in their several homes and places of worship render thanks to Almighty God.

In witness whereof I have hereto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington this twentieth day of October in the year of our Lord one thousand nine hundred [SEAL.] and fifteen and of the independence of the United States of America the one hundred and fortieth.

WOODROW WILSON.

By the President:  
ROBERT LANSING,  
Secretary of State.

## OFFICIAL CIRCULARS.

## Lighters Alongside Vessels with Hazardous Cargo.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., October 30, 1915.

CIRCULAR No. 705:

Hereafter no lighter equipped with steam power, either for propulsion or for handling cargo or coal, shall be used alongside any ship whose cargo contains explosives or inflammable products.

GEO. W. GOETHALS,  
Governor.

## Fortification Division Abolished.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., October 30, 1915.

CIRCULAR No. 659-28:

Effective November 1, 1915, the Fortification Division is abolished. The work of this division will be carried on under the supervision of the Engineer of Maintenance.

GEO. W. GOETHALS,  
Governor.

## Berths Alongside of Coal Dock.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., October 16, 1915.

CIRCULAR No. 701-1:

Paragraph 2 of Circular No. 704, dated July 31, 1915, covering the general conditions relative to leasing of coal storage areas, is hereby amended to read as follows:

2. Berths alongside the coal dock for delivering coal will be guaranteed within 24 hours after arrival.

GEO. W. GOETHALS,  
Governor.

## Remittances by Collecting Agents.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., October 23, 1915.

To officers, agents, and employees of The Panama Canal collecting cash on the Isthmus—The practice which has heretofore obtained in many cases of having a deputy collector make a personal call on collecting agents for the purpose of collecting their cash on hand will be discontinued effective at once and all collecting agents will hereafter make remittance by registered mail or personal delivery direct to the Collector of The Panama Canal at Balboa Heights, or, where it is more convenient, by personal delivery to the deputy collector at Colon. All persons receiving cash should remit the same to the Collector with as little delay as practicable, keeping on hand only such amounts as is necessary to properly transact their business. Final remittance for the month should be made so as to reach the Collector's office not later than noon of the next working day of the month. Any amounts received after this final remittance is made should be carried as cash on hand when the monthly collection account is rendered.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
GEO. W. GOETHALS,  
Governor.

## Collection of Charges for Stevedoring and Handling of Cargo across Docks and Transfer over the Railroad of Through Cargo.

THE PANAMA CANAL,  
PANAMA RAILROAD COMPANY,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., November 4, 1915.

HEADS OF DEPARTMENTS AND DIVISIONS:

1. Receiving and forwarding agents at Cristobal or Balboa will prepare the customary number of accounts receivable vouchers covering charges for stevedoring, craning, handling of cargo, freight, etc. Accounts receivable vouchers for freight charges, based upon bills of lading and manifests received from steamers, will be rendered by the agent making the shipment.

2. The original and two copies of each such accounts receivable will be forwarded to the Collector at Balboa Heights, or the deputy collector at Cristobal, and one signed copy will be forwarded immediately to the Auditor with a copy of each bill of lading and manifest attached thereto.

3. As soon as receiving and forwarding agents ascertain that they will render service to any vessel in port, they will advise the Collector at Balboa Heights or the deputy collector at Cristobal as to the character of the service that will be rendered, whether for stevedoring, handling of cargo, craning, or transportation over the road. Notice shall be given by telephone and confirmed in writing.

4. Before the Collector gives authority to the Port Captains to clear vessels for which services have been

rendered the collection of all charges must be made or their payment secured. The collector will collect in cash or by drafts acceptable on the Isthmus or from funds on deposit to cover Canal tolls and other charges, provided payment from such deposits is authorized by the company making the deposit. Drafts on New York agents or managers given by the master or agents of companies approved by the Auditor may also be accepted. Authority may be given to clear vessels without prior payment of bills upon advice that The Panama Canal or Panama Railroad Company is indebted to the company against whom the accounts receivable are rendered in excess of the amount thereof. Bills may also be charged against the New York office upon receipt of advice, before the steamer's departure, that deposit has been made with that office to cover the charges.

H. A. A. SMITH,  
Auditor, The Panama Canal.

GEO. W. GOETHALS,  
Governor, The Panama Canal,  
President, Panama Railroad Company.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., November 1, 1915.

CIRCULAR No. 107:

Effective at once, Mr. L. J. Stapleton is designated an accountable official of The Panama Canal, vice V. C. Dillon, and as such will account for stock charged to dry dock store, Cristobal. Nonexpended property in use at dry dock store will be carried on the property records of the district quartermaster, Cristobal.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
GEO. W. GOETHALS,  
Governor.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., October 26, 1915.

CIRCULAR No. 108:

Effective October 31, 1915, Col. Jay J. Morrow is designated an accountable official of The Panama Canal, vice Lieut. C. Garlington, and as such will account for all nonexpended property in the service of the Fortification Division.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
GEO. W. GOETHALS,  
Governor.

## Organizations under the Engineer of Maintenance.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,

BALBOA HEIGHTS, C. Z., October 30, 1915.

To all concerned—Until further notice, the heads of organizations under the Engineer of Maintenance will report to Lieut.-Col. Jay J. Morrow, U. S. A., as Assistant to the Engineer of Maintenance.

CHESTER HARDING,  
Engineer of Maintenance.

## Flat Cars for Hauling Concrete Blocks.

PANAMA RAILROAD COMPANY,

OFFICE OF MASTER OF TRANSPORTATION,

BALBOA HEIGHTS, C. Z., November 1, 1915.

CIRCULAR No. 180:

To all concerned—Arrangements have been made to stencil 75 50-ton steel flat cars "East Breakwater." These cars are to be used only for the handling of concrete blocks from Gamboa to East Breakwater, Cristobal. They must not be used for commercial service or by other departments, except upon authority received from this office.

S. W. HEALD,  
Master of Transportation.

Approved:  
C. H. MOTSETT,  
Superintendent.

## Users of Gatun-Colon Labor Train.

THE PANAMA RAILROAD COMPANY,

OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., November 1, 1915.

CIRCULAR No. 183:

To all heads of departments—In order to prorate the charges for the operation of the Gatun-Colon labor train, it is requested that you forward to my office at an early date a statement showing the number of men employed in your department making use of this train. Will you kindly give this matter early attention so that we will have a basis for distribution of October charges?

C. H. MOTSETT,  
Superintendent.

## Position of Chief Dispatcher, Panama Railroad, Abolished.

PANAMA RAILROAD COMPANY,

OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., October 30, 1915.

CIRCULAR No. 179:

To all concerned—Effective midnight, October 31, 1915, the position of Chief Dispatcher is abolished, and the duties of that office will be placed under the direction and supervision of the Master of Transportation.

C. H. MOTSETT,  
Superintendent.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, November 17, 1915, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, November 19, 1915, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board,  
GEORGE J. VANDERSLICE,  
Recorder, Board of Local Inspectors.

## Proposals for Making Fill in Low Areas in Vicinity of Mount Hope.

Sealed proposals will be received at the office of the Chief Quartermaster, Balboa Heights, C. Z., until 10 a. m., November 30, 1915, and then opened for the excavation of 103,000 cubic yards, more or less, of fill to be made in the low areas in the vicinity of Mount Hope, as shown on Municipal Division drawing No. 2008. Specifications, form of contract, bond and proposal, and blue print of drawing No. 2008, may be obtained upon written application to the Chief Quartermaster, Balboa Heights, C. Z. Bids must be accompanied by cash, certified check, or postoffice money order made payable to the Collector, Panama Canal, in the sum of \$3,000 as a guarantee that the bidder will, if required by The Panama Canal, enter into a contract with satisfactory bond, certified check, or cash in the sum of \$3,000 as security for the faithful performance of the work. If the bidder to whom the award is made fails or refuses to enter into contract within 10 days of the date of notice of award, with satisfactory security as mentioned above, the deposit made with the bid will be forfeited and become payable to The Panama Canal as liquidated damages. Deposits will be returned to the unsuccessful bidders on rejection of their bids. The Panama Canal reserves the right to accept any bid or to reject any or all bids.

Bids should be marked "Proposal for making fill in low areas in vicinity of Mount Hope, C. Z.," and addressed to the Chief Quartermaster, Panama Canal Balboa Heights, C. Z.

## Taboga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p. m.; Monday, Thursday, Saturday, and Sunday, at 9 a. m. m.

Leave Taboga—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier.) Monday, Thursday, and Saturday at 1.30 p. m.; Sunday at 7.15 p. m. The 9.40 a. m. trips from Balboa await the arrival of Panama Railroad trains.



## COMMISSARY DEPARTMENT.

## La Boca Store for Silver Employees.

Commissary patrons are advised that the La Boca commissary store is being operated for silver employees only, and the practice of serving gold employees in the warehouse or behind the counters will be discontinued on and after November 15, 1915.

Gold employees are urged to transact their business at the commissary operated for their benefit at Balboa.

## Toys, Candles, and Christmas Trees.

THE PANAMA CANAL.

SUPPLY DEPARTMENT.

CRISTOBAL, C. Z., November 8, 1915.

BULLETIN No. 415:

To commissary managers—I am informed that persistent rumor is circulating to the effect that the commissary branch will not handle toys this year.

Please give as wide publicity as possible to the statement that a line of candies, toys and Christmas trees, as full and complete as that carried last year, has been ordered for the Christmas trade and will be sold under practically the same conditions (details will be published later) as last year.

BENJ. L. JACOBSON,  
Depot Commissary.

## Cold Storage Prices.

The following list gives retail prices of cold storage provisions which will be effective November 11, 1915.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.		Price.
Beef, suet, special, per lb.	..	\$.03
Beef suet, native, per lb.	..	\$.03
Soup beef, special, per lb.	..	\$.07
Soup beef, native, per lb.	..	\$.05
Soup bone, special, per lb.	..	\$.02
Soup bone, native, per lb.	..	\$.02
Stew beef, special, per lb.	..	\$.11
Stew beef, native, per lb.	..	\$.12
Chuck roast (3 lbs. up), special, per lb.	..	\$.08
Chuck roast (3 lbs. up), native, per lb.	..	\$.08
Rib roast, 24 cut (3 lbs. up), special, per lb.	..	\$.16
Rib roast, 24 cut (3 lbs. up), native, per lb.	..	\$.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	..	\$.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	..	\$.11
Pot roast, special, per lb.	..	\$.20
Pot roast, native, per lb.	..	\$.12
Rump roast, special, per lb.	..	\$.20
Rump roast, native, per lb.	..	\$.31
Porterhouse roast, special, per lb.	..	\$.22
Porterhouse roast, native, per lb.	..	\$.16
Chuck steak, special, per lb.	..	\$.09
Chuck steak, native, per lb.	..	\$.09
Round steak, bottom, special, per lb.	..	\$.13
Round steak, bottom, native, per lb.	..	\$.09
Round steak, top, special, per lb.	..	\$.15
Round steak, top, native, per lb.	..	\$.15
Sirloin steak, special, per lb.	..	\$.20
Sirloin steak, native, per lb.	..	\$.12
Sirloin steak, choice cut, special, per lb.	..	\$.23
Sirloin steak, choice cut, native, per lb.	..	\$.16
Rump steak, special, per lb.	..	\$.20
Rump steak, native, per lb.	..	\$.12
Porterhouse steak (14 lbs. up), choice, per lb.	..	\$.34
Porterhouse steak (14 lbs. up), native, per lb.	..	\$.23
Porterhouse steak (14 lbs. up), native, per lb.	..	\$.17
Porterhouse steak, short, choice, per lb.	..	\$.28
Porterhouse steak, short, special, per lb.	..	\$.20
Porterhouse steak, short, native, per lb.	..	\$.12
Tenderloin steak, special, per lb.	..	\$.35
Tenderloin steak, native, per lb.	..	\$.25

## FRESH MEATS.

Lamb chops, per lb.	..	\$.20
Lamb chops, short, per lb.	..	\$.20
Lamb, legs, 5 to 8 lbs., per lb.	..	\$.24
Lamb, shoulder, trimmed, not less than 34 lbs., per lb.	..	\$.15
Lamb, stewing, per lb.	..	\$.12
Mutton chops, short cut, per lb.	..	\$.23
Mutton chops, shoulder, per lb.	..	\$.17
Mutton, leg, 8 to 10 lbs., per lb.	..	\$.17
Mutton, shoulder, trimmed, not less than 34 lbs., per lb.	..	\$.12
Mutton, stewing, per lb.	..	\$.09
Pork hams, fresh (see footnote), per lb.	..	\$.25
Pork loins, chops, short, native, per lb.	..	\$.20
Pork, shoulders, fresh (see footnote), per lb.	..	\$.20
Veal chops, per lb.	..	\$.27
Veal chops, shoulder, per lb.	..	\$.27
Veal, loin, for roasting, per lb.	..	\$.40
Veal, shoulder for roasting, not under 4 lbs., per lb.	..	\$.20
Veal, stewing, per lb.	..	\$.16

## MISCELLANEOUS.

Brains, calves, per lb.	..	\$.07
Calves' heads, per lb.	..	\$.08
Kidneys, beef, per lb.	..	\$.09

Livers, beef, per lb.	..	\$.09
Livers, calves, per lb.	..	\$.27
Pates de foie gras, jar.	..	\$.67
Pigs' feet, fresh, per lb.	..	\$.05
Pigs' head, fresh, whole, ea.	..	\$.83
Pigs' heads, fresh, 1/2 head, half.	..	\$.42
Sausage, Bologna, per lb.	..	\$.12
Sausage, frankfurter, per lb.	..	\$.14
Sausage, cervoise, per lb.	..	\$.08
Sausage, pork, per lb.	..	\$.17
Sausage, pork, homemade, per lb.	..	\$.24
Shore ribs, pork, per lb.	..	\$.17
Steak, hamburger, pkg.	..	\$.17
Steak, hamburger, 20-pound container, per lb.	..	\$.14
Sweet bread, beef, per lb.	..	\$.17
Tails, ox, per lb.	..	\$.09
Tongue, beef, native, whole, per lb.	..	\$.20
Yeast, per lb.	..	\$.31
Yeast, cake	..	\$.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	..	\$.31
Bacon, breakfast, sliced, per lb.	..	\$.28
Bacon, sliced, jar.	..	\$.31
Bacon, sliced, tin.	..	\$.27
Bacon, squares, whole square, per lb.	..	\$.19
Bacon, strips, whole strip.	..	\$.20
Corned—No. 1, per lb.	..	\$.15
Beef, corned—No. 2, per lb.	..	\$.12
Ham, genuine Westphalia, per lb.	..	\$.50
Ham, lunch, per lb.	..	\$.40
Ham, mixed, "Bologna style," per lb.	..	\$.12
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	..	\$.18
Ham, sugar cured (whole) per lb.	..	\$.20
Ham, sugar cured (half) per lb.	..	\$.20
Ham, sugar cured (sliced) per lb.	..	\$.31
Ham, sugar cured, boiled (whole) per lb.	..	\$.29
Ham, sugar cured, boiled (half) per lb.	..	\$.37
Pigs' feet, pickled, per lb.	..	\$.08
Pork, bellies, per lb.	..	\$.18
Pork, clear, per lb.	..	\$.11
Pork, suet, meat, per lb.	..	\$.22
Tongue, beef, corned native, whole, per lb.	..	\$.20
Tongue, ox, whole, 3 to 5 lbs., per lb.	..	\$.24
Tongue, pigs', per lb.	..	\$.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	..	\$.31
Broilers, milk fed, per lb.	..	\$.34
Capon, per lb.	..	\$.39
Chickens, fancy roasting, corn fed, per lb.	..	\$.24
Chickens, fancy roasting, milk fed, per lb.	..	\$.33
Ducklings, per lb.	..	\$.24
Ducks, mallard, 2 to 24 lbs. ea.	..	75¢
Fowls, light, per lb.	..	\$.23
Fowls, western, dry picked, per lb.	..	\$.25
Geese, per lb.	..	\$.22
Grouse, ea.	..	60¢
Squabs, ea.	..	\$.44
Turkeys, per lb.	..	\$.30

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	..	\$.41
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	..	\$.40
Butter, Sheffield farms, extra fancy, per lb.	..	\$.40
Cheese, Edam, ea.	..	1.15
Cheese, Edam, tin.	..	\$.39
Cheese, Gouda, per lb.	..	\$.26
Cheese, Gruyere, per lb.	..	\$.39
Cheese, Philadelphia cream cake.	..	\$.09
Cheese, Roquefort, per lb.	..	\$.48
Cheese, Snappy, cake.	..	\$.09
Cheese, Swiss, per lb.	..	\$.34
Cheese, Young American, per lb.	..	\$.20
Cream, 30 cent, 1 pt.	..	17¢
Cream, 30 cent, pt.	..	20¢
Eggs, fresh, per doz.	..	52¢
Eggs, fresh, 1 doz. (only).	..	43¢
Fer-mil-lac, bottle.	..	25¢
Ice cream, (see footnote) 1 gal.	..	50¢
Milk, Sheffield farms, qt.	..	15¢
Oleomargarine, per lb. carton.	..	\$.29

## FISH.

Bluefish, fresh, per lb.	..	\$.16
Codfish, dried, per lb.	..	\$.11
Haddock, smoked, per lb.	..	\$.09
Halibut, fresh, per lb.	..	\$.11
Herring, smoked, per lb.	..	\$.11
Oysters, fresh, per qt.	..	\$.28
Salmon, fresh, per lb.	..	\$.18
Whitefish, smoked, per lb.	..	\$.18

## VEGETABLES.

Beets, per lb.	..	\$.02
Cabbage, per lb.	..	\$.01
Carrots, per lb.	..	\$.02
Calliflower, per lb.	..	\$.11
Celery, per head.	..	\$.04
Cucumbers, per doz.	..	10¢
Onions, per lb.	..	\$.03
Parasuts, per lb.	..	\$.04
Plantains, per doz.	..	\$.04
Potatoes, white, per lb.	..	\$.02
Potatoes, sweet, per lb.	..	\$.03
Squash, per lb.	..	\$.02
Squash, fancy, per lb.	..	\$.02
Turnips, per lb.	..	\$.02
Yams, lucca, per lb.	..	\$.03

## FRUITS, DRIED.

Apples, evaporated, per lb.	..	12¢
Apricots, evaporated, per lb.	..	15¢

Currants, cleaned, pkg.	..	13¢
Figs, dried, 12-oz. pkg.	..	14¢
Peaches, evaporated, per lb.	..	08¢
Pears, evaporated, per lb.	..	18¢
Peel citron, per lb.	..	22¢
Peel, lemon, per lb.	..	16¢
Peel, orange, per lb.	..	16¢
Raisins, stewing, per lb.	..	11¢
Raisins, seeded, pkg.	..	10¢
Raisins, table cluster, per lb.	..	23¢

## FRUITS, FRESH.

Apples, fresh, per lb.	..	04
Apples, fresh, select, per lb.	..	06
Bananas, 8 hands and over, per bunch.	..	40¢
Bananas, 6 and 7 hands, per bunch.	..	28¢
Bananas, 4 hands, per bunch.	..	00¢
Cocconuts, ea.	..	14¢
Grapes, Malaga per lb.	..	14¢
Grapefruit, select, ea.	..	09
Grapefruit, tropical, ea.	..	03
Lemons, per doz.	..	11¢
Limes, per 100	..	25
Oranges, select, ea.	..	04
Oranges, tropical, per doz.	..	12
Pears, fresh, per lb.	..	07

\* Indicates advance from preceding list.

† Indicates five cents allowed for return of bottle.

‡ Indicates reduction from preceding list.  
§ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m. and 1.30 to 3.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and other sailing days of Panama Railroad vessels.

## Price Changes.

The following changes in prices of articles in stock at the commissary store became effective November 1:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Garters, Boston, pr.	\$0.35	\$0.32
Leven, persian, yd.	..	19
Overalls, boy's, pr.	..	22
Pins, hair, doz.	..	21
Serge, blue, yd.	3.25	3.00
Suiting, union, yd.	..	24
Thread, linen, spool.	..	11
Candy:		
Toffee, McIntosh, 4-oz. tin.	..	12
Sugar:		
Granulated, 5-lb. sack.	..	29
Loaf, 2-lb. ctn.	..	19
Powdered, 2-lb. tin.	..	21
Yellow, 1-lb. ctn.	..	05
Relish, tomato, Heinz, 9-oz. bot.	..	15

## Additions to Stock.

Brassieres, model, ea.	..	\$0.40
Sheets, ti. S. lineal, 72" by 108", pr.	..	7.14
Sheets, H. S. lineal, 90" by 117", pr.	..	6.90
Covers, cushion, embroidery, 20" by 20", ea.	..	33
Covers, cushion, embroidery, 20" by 20", ea.	..	37
Embroidery, all over, 45", yd.	..	52
Embroidery, all over, 45", yd.	..	92
Cups, egg, ea.	..	11
Dishes, oatmeal, ea.	..	11
Jugs, cream, ea.	..	12
Bowls, sugar, ea.	..	52
Pots, tea, ea.	..	70
Cups, egg, ea.	..	12
Dishes, oatmeal, ea.	..	12
Jugs, cream, ea.	..	23
Bowls, sugar, ea.	..	56
Cups, egg, ea.	..	73
Wringers, clothes, ea.	..	2.45
Brushes, shoe, ea.	..	34
Daubers, snipe, metal, top.	..	10
Crepe, cream, Perfect, ea.	..	20
Mosquito netting, white, yd.	..	07
Poplin, Peerless, yd.	..	17
Crepe de chine, yd.	..	43
Linen thread, Barbour's, spool.	..	19
Straw hats, china braid, soft brim, ea.	..	2.20
Pruning shears, ea.	..	57
Tuna fish, tin.	..	17
For, for winter shoes, large.	..	05
Marshmallows, F. & T., 3 1/2 oz. tin.	..	07
Mum padding, Heinz, tin.	..	13
Roers, shad, 1 oz. tin.	..	21
Richard Strauss, Cut, 20s, ea.	..	16
Baskets, fruit, ea.	..	17
Cups, drinking, enamel, 1 pt. ea.	..	08
Voile, antique, striped, yd.	..	25
Voile, embroidery, yd.	..	13
Voile, striped, yd.	..	13
Wash, mouth, antiseptic, P. C., 4 oz. bot.	..	12



## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions until December 23 are given in this table:

## NOVEMBER.

DATE.	Time and height of high and low water.			
Wed., Nov. 10....	5:12	11:37	17:45	23:58
Thurs., Nov. 11....	6:00	12:26	18:35	0.0
Fri., Nov. 12....	6:50	13:15	19:25	0.8
Sat., Nov. 13....	1:46	7:47	14:15	20:30
Sun., Nov. 14....	2:49	8:54	15:18	21:40
Mon., Nov. 15....	3:59	10:10	16:24	22:55
Tues., Nov. 16....	5:10	11:31	17:33	24.1
Wed., Nov. 17....	0:07	6:16	12:43	18:37
Thurs., Nov. 18....	1:08	7:14	13:42	19:32
Fri., Nov. 19....	1:58	8:03	14:30	20:18
Sat., Nov. 20....	2:40	8:47	15:11	21:01
Sun., Nov. 21....	3:18	9:26	15:48	21:43
Mon., Nov. 22....	4:12	10:15	16:24	22.2
Tues., Nov. 23....	4:28	10:42	16:58	22:59
Wed., Nov. 24....	5:02	11:20	17:32	23:37
Thurs., Nov. 25....	5:36	11:59	18:08	24.1
Fri., Nov. 26....	0:18	6:12	12:38	18:46
Sat., Nov. 27....	0:58	6:49	13:19	19:26
Sun., Nov. 28....	1:44	7:30	14:04	20:08
Mon., Nov. 29....	2:32	8:17	14:52	20:57
Tues., Nov. 30....	3:28	9:15	15:40	21:53
	4 0	11.5	3.5	12.3

## DECEMBER.

DATE.	Time and height of high and low water.			
Wed., Dec. 1....	4:26	10:19	16:44	22:53
Thurs., Dec. 2....	5:25	11:27	17:41	23:52
Fri., Dec. 3....	6:31	12:30	18:32	0.3
Sat., Dec. 4....	2 3	12 5	2 6	
Sun., Dec. 5....	0:49	7:16	13:26	19:33
Mon., Dec. 6....	1:41	8:13	14:14	20:25
Tues., Dec. 7....	2:33	9:07	15:01	21:17
Wed., Dec. 8....	3:27	10:00	15:50	22:06
Thurs., Dec. 9....	4:12	10:36	16:48	22:56
Fri., Dec. 10....	5:01	11:24	17:37	23:48
Sat., Dec. 11....	5:51	12:14	18:28	24.4
Sun., Dec. 12....	6:40	13:05	19:19	25.3
Mon., Dec. 13....	1:24	7:37	13:56	20:12
Tues., Dec. 14....	2:13	8:13	14:52	21:12
Wed., Dec. 15....	3:02	9:00	15:52	22:15
Thurs., Dec. 16....	3:52	9:45	16:50	23:01
Fri., Dec. 17....	4:43	10:32	17:41	23:59
Sat., Dec. 18....	5:34	11:20	18:32	0.3
Sun., Dec. 19....	6:24	12:10	19:22	1.1
Mon., Dec. 20....	7:14	13:00	20:12	1.9
Tues., Dec. 21....	8:04	13:50	21:02	2.7
Wed., Dec. 22....	8:54	14:40	21:52	3.5
	13.8	1.2	13.6	2.4

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is the Commonopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0% (midnight) to 23% (11:00 p. m.).

All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

## Rainfall from October 1 to 31, 1915, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>
Balboa.....	2.17	2	10.29
Balboa Heights.....	2.07	2	10.51
Miraflores.....	2.62	9	17.29
Pedro Miguel.....	2.84	10	16.38
Rio Grande.....	4.31	31	17.49
<b>Central Section—</b>			
Culebra.....	2.86	31	14.78
*Camacho.....	3.26	31	17.64
Empire.....	4.11	31	16.36
Gambou.....	3.31	31	15.93
*Juan Mina.....	3.77	31	19.23
Alhajuela.....	3.26	30	16.40
*Vigia.....	4.64	31	18.50
Frijoles.....	2.62	31	16.19
*Trinidad.....	1.67	31	11.41
*Monte Lirio.....	4.60	9	17.78
<b>Atlantic Section—</b>			
Gatun.....	3.14	31	19.55
*Brazos Brook.....	2.51	24	18.32
Colon.....	4.69	16	21.86
*Bocas del Toro.....	1.05	6	4.61

## Rainfall from November 1 to 6, 1915, Inclusive.

STATIONS.	Ins.	Date.	Ins.
<b>Pacific Section—</b>			
Balboa.....	.50	6	.74
Balboa Heights.....	.41	6	.73
Miraflores.....	.20	2	.50
Pedro Miguel.....	.34	1	1.79
Rio Grande.....	.59	1	.95
<b>Central Section—</b>			
Culebra.....	1.72	1	2.32
*Camacho.....	1.44	1	2.79
Empire.....	.63	1	1.57
Gambou.....	.46	2	.76
*Juan Mina.....	1.53	2	2.97
Alhajuela.....	.95	1	2.16
*Vigia.....	1.29	1	2.67
Frijoles.....	1.58	1	5.29
*Trinidad.....	2.14	1	6.27
*Monte Lirio.....			
Gatun.....	.57	2	1.48
*Brazos Brook.....	.75	1	1.78
Colon.....	1.03	4	2.59

\*Standard rain gauge—readings at 5 p. m. daily. Automatic rain gauge at unstarred stations—values midnight to midnight.

## October Rainfall for Three Years.

STATIONS.	1913	1914	1915	Station Av.	Mean of record.	Rainy days.
<b>Pacific Section—</b>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>		
Balboa.....	10.33	6.97	10.29	9.49	17	26
Balboa Heights.....	8.30	6.44	10.51	10.53	19	25
Miraflores.....	10.28	8.18	17.29	12.58	8	26
Pedro Miguel.....	12.07	6.74	16.38	12.24	8	28
Rio Grande.....	7.08	8.19	17.49	12.50	11	26
<b>Central Section—</b>						
Culebra.....	6.08	8.20	14.78	11.33	27	27
*Camacho.....	7.78	9.22	17.64	13.43	10	23
Empire.....	7.25	9.07	16.13	12.15	8	25
Gambou.....	8.71	7.99	15.93	12.68	33	24
*Juan Mina.....	7.90	20.19	19.23	14.10	6	30
Alhajuela.....	6.41	12.91	16.61	13.84	17	28
*Vigia.....	8.26	12.46	18.50	16.23	8	25
Frijoles.....	14.52	18.99	11.49	17.22	4	27
*Trinidad.....	11.86	16.93	11.41	15.00	8	24
*Monte Lirio.....	14.90	18.17	17.78	16.73	8	22
<b>Atlantic Section—</b>						
Gatun.....	15.17	14.14	19.55	16.53	11	26
*Brazos Brook.....	17.85	22.30	18.32	16.48	10	28
Colon.....	18.63	22.16	21.86	14.72	46	29

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., November 10, 1915.  
The following misdirected letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon application of the addressees:  
Aiken, D. R. Leighton, M. E.  
Alkins, John Miller, B. G.  
Clark, Letter (card) Morgan, Miss W. C.  
Clark, W. Walden Robinson, Cleo  
Corson, W. M. (catalog) Rogers, Mrs. Harold  
Evans, Dock W. Schriver, Harry  
Feeley, J. M. Ryson, Frank  
Hoffman, Wm., Co. C. Snowden, H. H.  
Icaza, Eduardo (paper) Wedgewood, Lt. Bruce  
Kraig, Andrew Weisbrod, E. D.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, November 6, 1915:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gambou	Gatun Lake	Miraflores Lake
Sun., Oct. 31....	139.00	102.10	158.36	35.6	18.54
Mon., Nov. 1....	135.20	100.80	158.36	35.6	18.54
Tues., Nov. 2....	128.50	94.68	158.36	35.6	18.54
Wed., Nov. 3....	127.93	94.68	158.36	35.6	18.54
Thurs., Nov. 4....	127.15	93.51	158.36	35.6	18.54
Fri., Nov. 5....	128.70	94.45	158.36	35.6	18.54
Sat., Nov. 6....	128.00	94.32	158.36	35.6	18.54

Heights of low water to nearest foot..... 125 0 91 0

## Proposal for Furnishing Green Coffee to the Commissary Branch.

Sealed proposals will be received at the office of the Depot Commissary, Cristobal, Canal Zone, until 4 p. m., December 15, 1915, and then opened, for furnishing the commissary branch of The Panama Canal with 15,000 pounds of green coffee. Specifications may be obtained upon application to the Depot Commissary, Cristobal, Canal Zone. The Panama Canal reserves the right to reject any or all bids. Bids should be marked "Proposal for furnishing green coffee, to be opened December 15, 1915," and addressed to the Depot Commissary, Panama Canal, Cristobal, C. Z.

## Sale of Gasoline Engine.

Sealed bids will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., November 18, 1915, and then opened in public, for the purchase of one Brownell gasoline marine engine, approximately 60 horsepower, six cylinder. The engine may be seen at the Balboa store, on any working day.

The Panama Canal reserves the right to accept any bid or to reject any or all bids. Bids must be plainly marked "Proposal for purchase of gasoline engine," and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Mail Despatches.

Following is the schedule of despatches of mail made to the United States each week by the Canal Zone postal service:

Every Thursday to New Orleans, for all States. Due at New Orleans on the following Tuesday.

Every Friday or Saturday to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week—on Friday when the vessel has not been sent through the Canal to Balboa from New York, and on Saturday if the vessel has been sent to Balboa. The day of departure from Cristobal is bulletined by the Panama Railroad Company several days in advance. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

\*Train No. 6, leaving Panama at 11 a. m., connects with the above despatch.

\*NOTE—The sailings on Monday, November 15 and December 13, will not land mail in New York until Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Thursday boat to New Orleans. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the two sailings mentioned above.

## Fuel and Supplies.

Fuel is supplied to vessels at both Cristobal and Balboa at the rate of between 6 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., November 7, 1915.)

There were no vessels entering the Canal during the week, for transit.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

Date	Vessel	Line	From
Nov. 3.....	<i>Jacob Luckenbach</i>	Luckenbach Line.....	New York.

\*Vessels which came for passage through the Canal.

## \*ARRIVALS AND EXPECTED ARRIVALS FROM PACIFIC.

Date	Vessel	Line	From
Nov. 3.....	<i>Jacob Luckenbach</i>	Luckenbach Line.....	New York.

## PORT OF CRISTOBAL

## \*ARRIVALS.

Date	Vessel	Line	From
Nov. 1.....	<i>Niagra</i> .....	French Line.....	Bordeaux.
Nov. 4.....	<i>Bologna</i> .....	Italian Line.....	Genoa.
Nov. 6.....	<i>Florence Luckenbach</i>	Luckenbach Line.....	San Francisco.
Nov. 7.....	<i>Belona</i> .....	Italian Line.....	Genoa.
Nov. 7.....	<i>Wellington</i> .....	Canadian Collier Co.....	Philadelphia.

## EXPECTED ARRIVALS.

Nov. 9.....	<i>Manuel Calvo</i> .....	Spanish Line.....	Barcelona.
Nov. 9.....	<i>Magdalena</i> .....	Royal Mail S. P. Co.....	London.

## \*DEPARTURES.

Date	Vessel	Line	To
Nov. 1.....	<i>Belgian</i> .....	Leyland Line.....	Liverpool.
Nov. 6.....	<i>Coronado</i> .....	Elders & Fyffes.....	Bristol.
Nov. 6.....	<i>Florence Luckenbach</i>	Luckenbach Line.....	New York.
Nov. 7.....	<i>Belona</i> .....	Italian Line.....	Genoa.
Nov. 7.....	<i>Wellington</i> .....	Canadian Collier Co.....	Philadelphia.

## \*EXPECTED DEPARTURES.

Nov. 10.....	<i>Magdalena</i> .....	Royal Mail S. P. Co.....	London.
Nov. 12.....	<i>Manuel Calvo</i> .....	Spanish Line.....	Barcelona.

\*Other than vessels which arrived for transit through the Canal, United Fruit Company's vessels, and vessels in regular service to the United States. \*

## PORT OF BALBOA.

## \*ARRIVALS.

Oct. 28.....	<i>Stella</i> .....	Dutch Royal Mail Co.....	Seattle.
Oct. 28.....	<i>Cauca</i> .....	Pacific Steam Nav. Co.....	Guayaquil.
Oct. 28.....	<i>Manavi</i> .....	Pacific Steam Nav. Co.....	Tobago.
Nov. 1.....	<i>City of Para</i> .....	Pacific Mail S. S. Co.....	San Francisco.
Nov. 1.....	<i>Fairley</i> .....	Houlder, Middleton & Co.....	San Francisco.
Nov. 1.....	<i>Falstria</i> .....	East Asiatic Co.....	San Francisco.
Nov. 1.....	<i>Maltopo</i> .....	Ellerman & Bucknall.....	San Francisco.
Nov. 1.....	<i>Torridge</i> .....	Tatem Steam Nav. Co.....	San Francisco.
Nov. 2.....	<i>Cardyn</i> .....	Luckenbach Line.....	San Francisco.
Nov. 3.....	<i>O. H. Clark</i> .....	C. H. Higgins Co.....	San Francisco.
Nov. 3.....	<i>Hualtaga</i> .....	Peruvian Line.....	Mollendo.
Nov. 3.....	<i>Huasco</i> .....	South American S. S. Co.....	Talcahuano.
Nov. 4.....	<i>San Jose</i> .....	Pacific Mail S. S. Co.....	San Francisco.
Nov. 5.....	<i>Anjo Maru</i> .....	Toyo Kisen Kaisha.....	Hongkong.
Nov. 7.....	<i>Shimosa</i> .....	N. Y. & Oriental S. S. Co.....	Philippines.

## \*DEPARTURES.

Oct. 31.....	<i>Arna</i> .....	Akies Aera.....	San Francisco.
Oct. 31.....	<i>Clan Alpine</i> .....	Cayzer, Irvine & Co.....	Pisagua.
Nov. 1.....	<i>Limari</i> .....	South American S. S. Co.....	Valparaiso.
Nov. 2.....	<i>Pukey</i> .....	Houlder, Middleton & Co.....	Avonmouth.
Nov. 2.....	<i>Canastota</i> .....	Canastota S. S. Co.....	Coronel.
Nov. 2.....	<i>Salvador</i> .....	Pacific Steam Nav. Co.....	Guayaquil.
Nov. 3.....	<i>Crown of Grenada</i> .....	Crown S. S. Co.....	London.
Nov. 3.....	<i>Aboukir</i> .....	Clydesdale Shipowners.....	Coronel.
Nov. 3.....	<i>Netherpark</i> .....	Netherpark S. S. Co.....	Coronel.
Nov. 3.....	<i>Tatit Luckenbach</i> .....	Luckenbach Line.....	San Francisco.
Nov. 3.....	<i>Saint Louis</i> .....	Cie. Navale de l'Oceanic.....	Coronel.
Nov. 4.....	<i>Torneo</i> .....	British Government.....	Coronel.
Nov. 4.....	<i>Cauca</i> .....	Pacific Steam Nav. Co.....	Tobago.
Nov. 4.....	<i>Conango</i> .....	Australian Government.....	Guayaquil.
Nov. 5.....	<i>Urumbaba</i> .....	Peruvian Line.....	Callao.
Nov. 5.....	<i>Constantinos XII</i> .....	Hellenic Transport Co.....	Lebu.
Nov. 6.....	<i>Tricolor</i> .....	W. R. Grace & Co.....	Coronel.
Nov. 6.....	<i>Torridge</i> .....	Tatem Steam Nav. Co.....	Callao.
Nov. 6.....	<i>Maltopo</i> .....	Ellerman & Bucknall.....	London.
Nov. 7.....	<i>Falstria</i> .....	East Asiatic Co.....	Cape Verde.
Nov. 7.....	<i>Olson &amp; Mahony</i> .....	Olson & Mahony.....	San Francisco.

\*Including vessels arriving for transit through the Canal.

## EXPECTED ARRIVALS.

Nov. 9.....	<i>Isabela</i> .....	N. Y. & Porto Rican Line.....	Toconilla.
Nov. 9.....	<i>Anjo Maru</i> .....	Toyo Kisen Kaisha.....	Valparaiso.
Nov. 12.....	<i>Hualtaga</i> .....	Salvador R. K. Co.....	Callao.
Nov. 13.....	<i>City of Para</i> .....	Pacific Mail S. S. Co.....	San Francisco.
Nov. 14.....	<i>Huasco</i> .....	South American S. S. Co.....	Valparaiso.
Nov. 15.....	<i>San Jose</i> .....	Pacific Mail S. S. Co.....	San Francisco.

## EXPECTED DEPARTURES.

Nov. 9.....	<i>Isabela</i> .....	N. Y. & Porto Rican Line.....	Toconilla.
Nov. 9.....	<i>Anjo Maru</i> .....	Toyo Kisen Kaisha.....	Valparaiso.
Nov. 12.....	<i>Hualtaga</i> .....	Salvador R. K. Co.....	Callao.
Nov. 13.....	<i>City of Para</i> .....	Pacific Mail S. S. Co.....	San Francisco.
Nov. 14.....	<i>Huasco</i> .....	South American S. S. Co.....	Valparaiso.
Nov. 15.....	<i>San Jose</i> .....	Pacific Mail S. S. Co.....	San Francisco.

approximately 45 shillings per ton of seven barrels.

Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

All standard lubricants, light and heavy hardware, cordage, and miscellaneous ship chandlery supplies are sold from the storehouses at Cristobal and Balboa.

Ice may be obtained in any reasonable quantity. The price is 33 cents per 100 pounds at either Cristobal or Balboa.

Repairs to vessels may be made to any extent, except turning of the largest crank shafts or longest line shafts or work requiring dry docking of large vessels.

The Government hospital service is fully equipped for the treatment of medical and surgical cases. The charge for consultation at the dispensaries is \$3; for hospital treatment for seamen in ward the charge is \$1.50 per day.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Sails	Arrives
Almirante.....	U. F. C. Nov.	3.....Nov. 10	
Panama.....	P. R. R. Nov.	4.....Nov. 10	
Pastores.....	U. F. C. Nov.	6.....Nov. 14	
Zacapa.....	U. F. C. Nov.	10.....Nov. 17	

Allianca.....	P. R. R. Nov.	11.....Nov. 17	
Calamares.....	U. F. C. Nov.	13.....Nov. 21	
Carrillo.....	U. F. C. Nov.	17.....Nov. 24	
Colon.....	P. R. R. Nov.	18.....Nov. 24	
Tenadores.....	U. F. C. Nov.	20.....Nov. 28	
Santa Marta.....	U. F. C. Nov.	24.....Dec. 1	
Advance.....	P. R. R. Nov.	26.....Dec. 3	
Metapan.....	U. F. C. Nov.	27.....Dec. 6	
Almirante.....	U. F. C. Dec.	1.....Dec. 8	
Panama.....	P. R. R. Dec.	2.....Dec. 8	
Pastores.....	U. F. C. Dec.	4.....Dec. 12	
Zacapa.....	U. F. C. Dec.	8.....Dec. 15	
Allianca.....	P. R. R. Dec.	9.....Dec. 15	
Calamares.....	U. F. C. Dec.	11.....Dec. 19	

## CRISTOBAL-COLON TO NEW YORK.

Santa Marta.....	U. F. C. Nov.	11.....Nov. 18	
Advance.....	P. R. R. Nov.	12.....Nov. 19	
Metapan.....	U. F. C. Nov.	15.....Nov. 23	
Almirante.....	U. F. C. Nov.	18.....Nov. 25	
Panama.....	P. R. R. Nov.	19.....Nov. 25	
Pastores.....	U. F. C. Nov.	22.....Nov. 29	
Zacapa.....	U. F. C. Nov.	25.....Dec. 2	
Allianca.....	P. R. R. Nov.	26.....Dec. 2	
Calamares.....	U. F. C. Nov.	29.....Dec. 6	
Carrillo.....	U. F. C. Dec.	2.....Dec. 9	
Colon.....	P. R. R. Dec.	3.....Dec. 9	
Tenadores.....	U. F. C. Dec.	6.....Dec. 13	
Santa Marta.....	U. F. C. Dec.	9.....Dec. 16	
Advance.....	P. R. R. Dec.	10.....Dec. 17	
Metapan.....	U. F. C. Dec.	13.....Dec. 21	
Almirante.....	U. F. C. Dec.	16.....Dec. 23	
Panama.....	P. R. R. Dec.	17.....Dec. 23	

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba.....	U. F. C. Nov.	3.....Nov. 10	
Heredia.....	U. F. C. Nov.	6.....Nov. 11	
Abangarez.....	U. F. C. Nov.	10.....Nov. 17	
Parminina.....	U. F. C. Nov.	13.....Nov. 18	
Atenas.....	U. F. C. Nov.	17.....Nov. 24	
Cartago.....	U. F. C. Nov.	20.....Nov. 25	
Turrialba.....	U. F. C. Nov.	24.....Dec. 1	
Heredia.....	U. F. C. Nov.	27.....Dec. 2	
Abangarez.....	U. F. C. Dec.	1.....Dec. 8	
Parminina.....	U. F. C. Dec.	4.....Dec. 9	
Atenas.....	U. F. C. Dec.	8.....Dec. 15	
Cartago.....	U. F. C. Dec.	11.....Dec. 16	
Turrialba.....	U. F. C. Dec.	15.....Dec. 22	
Heredia.....	U. F. C. Dec.	18.....Dec. 23	
Abangarez.....	U. F. C. Dec.	22.....Dec. 29	
Parminina.....	U. F. C. Dec.	25.....Dec. 30	

## CRISTOBAL-COLON TO NEW ORLEANS.

Cartago.....	U. F. C. Nov.	11.....Nov. 16	
Turrialba.....	U. F. C. Nov.	11.....Nov. 18	
Heredia.....	U. F. C. Nov.	18.....Nov. 23	
Abangarez.....	U. F. C. Nov.	18.....Nov. 25	
Parminina.....	U. F. C. Nov.	25.....Nov. 30	
Atenas.....	U. F. C. Nov.	25.....Dec. 2	
Cartago.....	U. F. C. Dec.	2.....Dec. 7	
Turrialba.....	U. F. C. Dec.	2.....Dec. 9	
Heredia.....	U. F. C. Dec.	9.....Dec. 14	
Abangarez.....	U. F. C. Dec.	9.....Dec. 16	
Parminina.....	U. F. C. Dec.	16.....Dec. 21	
Atenas.....	U. F. C. Dec.	16.....Dec. 23	
Cartago.....	U. F. C. Dec.	23.....Dec. 28	
Turrialba.....	U. F. C. Dec.	23.....Dec. 30	

# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, NOVEMBER 17, 1915. No. 13.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications.

THE CANAL RECORD.

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### The Slide Situation.

Excavation from the bases of the Culebra slides during the week ending at 6 a. m., Tuesday, November 16, amounted to 239,400 cubic yards. Other excavation from the Cut during the same period amounted to 55,298 cubic yards, making a total for the week of 294,698 cubic yards. In addition, 5,020 cubic yards were rehandled.

A record for Sunday work was established in the 24 hours from 6 a. m., Sunday, November 14, to 6 a. m., Monday, November 15, with an aggregate excavation amounting to 44,495 cubic yards.

The excavation by the several dredges during the week ending Tuesday morning was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	78,090
Gamboa.....	15-yard dipper.....	62,295
Paraiso.....	15-yard dipper.....	64,670
Corozal.....	Ladder.....	19,815
No. 86.....	Pipeline suction.....	36,000
Culebra.....	Seagoing suction.....	24,318
Marmot.....	Belgian ladder.....	5,715
No. 5.....	Belgian ladder.....	8,815

The total excavations for the preceding three weeks were 239,885, 254,286 and 256,262 cubic yards, respectively.

Retirement of the "Cardenas," "Chagres," and "Mindi."

Following the entry of the new 15-yard dipper dredge *Cascadas* into service in the Cut, the Dredging Division has retired the three 5-yard dipper dredges, the *Cardenas*, *Chagres*, and *Mindi* from active service. They will, however, be maintained in a state of repair, ready to return to service in case of breakdowns among the larger dredges. Three gold employes have been laid off in

consequence of the retirement of the small dipper dredges, three reduced in grade, and two transferred.

The 5-yard dipper dredges have been set aside as no longer economical to operate, and because, with the present shortage of barges and towboats, better results can be obtained by concentrating the service on the larger dredges. The normal output of one of the 15-yard dipper dredges is over three times that of a 5-yard dredge, so the *Cascadas* is capable of doing the work of the three smaller and older dredges. The present fleet at the bases of the Culebra slides consists of the *Cascadas*, *Gamboa*, *Paraiso*, *Corozal*, and *Marmot*, the two last named being ladder dredges.

The *Chagres* and the *Mindi* have been in service since 1907, when they were brought from the United States and placed at work in the Atlantic entrance channel. The *Cardenas* was originally employed in the Pacific entrance channel, and began work in May, 1907. All three were named for Isthmian rivers.

Change in Schedule of Steamship Services with New Orleans and New York.

The United Fruit Company has changed the schedules of its services between New Orleans and Cristobal. Under the new arrangement the vessels making the direct trip, in five days, leave New Orleans on Wednesday at 11 a. m., and arrive at Colon on Monday at 7 a. m.; they leave Cristobal on Sunday at 3 p. m. and arrive at New Orleans on Friday at 7 a. m. The vessels making the trip by way of Havana leave New Orleans on Saturday at 11 a. m., and arrive at Cristobal on the following Saturday at 1 p. m.; on the voyage to New Orleans, they leave Cristobal on Monday at 5 p. m., and arrive at New Orleans on the following Monday at 5 p. m.

The Panama Railroad Steamship Line, beginning with the sailing of the *Panama* from Cristobal on November 18, will despatch its vessels to New York on Thursday of each week. This arrangement is to last during such time as the Canal is closed to commerce.

A list of the sailings in the near future is published on the last page of THE CANAL RECORD. Attention is also invited to the revised schedule of despatches of mail to the United States, resulting from the changes in steamship schedules.

### Sailing of the "Cristobal."

The steamship *Cristobal* of the Panama Railroad Steamship Line will sail for New York with cargo and passengers on or about Wednesday, November 24. Following discharge of the cargo she brought from New York she will be used for a trip to Limon to bring cattle for the commissary branch of the Supply Department, after which she will load at Cristobal for New York.

## ELECTRIC TRUCKS AT DOCKS.

Save in Cost of Handling Cargo and Eliminate Many Delays.

During the past three months the receiving and forwarding agency of the Panama Railroad at Colon and Cristobal has been operating 12 electric trucks on the piers of the Atlantic terminal. They have been very satisfactory, and specifications are being prepared for 12 more trucks, to be ordered in the United States.

Before the electric trucks were placed in use the handling of cargo on the terminals was done entirely by means of two-wheeled push trucks for pieces of cargo weighing up to 500 pounds, and with locomotive cranes and flat cars for the unusually large and heavy pieces. Each truck was handled by a trucker, and at times as many as 1,200 were in use. The number used depended on the status of traffic, and varied from day to day, according to the work to be done for the ships in the docks. The average in use was approximately 500. At 10 cents an hour, the wages of a trucker amount to 90 cents a day; and the employment of 500 would come to \$450 for the day.

The use of the trucks has greatly reduced this force. Each truck has been found to take the place of at least 12 men, or in a day-and-night shift operation to supplant about 25 men. The cost of operating the truck during the 24-hour day is approximately \$3.50, of which \$2 is for the operators, one to a shift, \$1 is for charging the storage batteries, and 50 cents covers the interest on the investment, and the wear and tear on the machine. In a double-shift day, each truck effects a saving of about \$19. The trucks are employed constantly, and the fluctuations in cargo are met by variations in the employment of two-wheel trucks. On Wednesday, November 10, the number of truckers employed was 380. On Friday, November 12, the number was 290. On Saturday, November 13, the number was 243.

The electric trucks handle from 4,000 to 6,600 pounds at a trip, and move at speeds varying between eight and 12 miles an hour. Three types are in use at Cristobal. Four of the 12 use trailers and haul 6,600 pounds at eight miles an hour. Three are rated to carry 4,000 pounds, and make 10 miles an hour. Five are rated to carry 4,400 pounds and to make 12 miles an hour. When pieces weighing over two tons are to be handled, they are placed on dollies and a truck is used as a locomotive to draw the dollies.

The relatively great capacity and speed of the trucks allow them to be used to a large extent in place of railway cars for handling cargo between piers. Where cargo is to be transferred from a vessel at Dock 10, for instance, to one at Pier 8, the goods may be loaded on trucks, which will make the run of approximately 2,000 feet to Pier 8 in three or



four minutes, and handle the cargo more quickly than it could be handled by train. This eliminates a great deal of switching, with the delays incident to waiting for cars and engines, and saves a great deal of rehandling. Frequently cargo can be delivered to a truck in the sling into which it was loaded in the hold of the ship, hauled to some other point at the terminal, and swung from the truck into another vessel in the same sling in which it was first loaded. When refrigerated goods for the commissary branch are unloaded, the trucks can carry them direct to the cold storage plant. They run very satisfactorily on the streets, and have been equipped with license tags and regulation warning bells, as provided for automobile trucks.

Other short-cuts for efficiency in handling cargo are originated almost every day in meeting the various transfer problems. When the Panama Railroad vessels from the United States bring mail the trucks go to the ship's side and handle the pouches quickly to the several cars of the special train. Goods for the line commissaries are handled from the ships to cars designated for various towns; it is not necessary to take them first to the general warehouse. Local cargo for Colon is handled, as unloaded, direct to the land end of the pier, from which it can be taken by the cartmen with a minimum of delay and confusion. Locally loaded cargo of coconuts and other native produce is handled from the land direct to the ship; frequently a wide gang-plank is laid down and the trucks are run aboard the ship, to chute their produce down into the hold. The unloading slings, hawsers, and other parts of ship's unloading gear are regularly stored in a room on Pier 8; when a ship comes in a truck goes to this room, loads up with the requisite gear, and delivers it at the ship's side in the time in which a two-wheeled truck gang could have been assembled at the storage room. In many ways the trucks allow the substitution of a relatively few speedy units of large capacity for many units slow in their movements, interfering with one another by their very numbers, and in need of constant supervision and speeding-up. The saving is not only in cost but in time, which is very important to ship operators.

#### New Launch of the "Taboga" Type Ordered.

A 50-foot gasoline launch, capable of carrying 50 passengers and going well out to sea, has been ordered from the United States for use about the harbor of Balboa, and for auxiliary service in transporting passengers between Balboa and Taboga Island when required. This launch will be the exact duplicate of the *Taboga* which is used in general harbor service at the Atlantic terminus, and will cost, like the *Taboga*, \$7,000, delivered at ship's side in New York. Its machinery will also be the duplicate of the machinery in the several pilot boats, and it is the expectation of the Marine Division that this duplication will result in economy in the provision of spare parts and in other details of operation.

#### Roasting Ears.

Three of the 12 plantations operated by the Supply Department are supplying green corn to the commissary branch at present. Their combined output is from 2,500 to 5,000 ears a week. The extent of the demand for fresh table corn, however, is such as to make this supply, in the words of one of the authorities in charge, "just a drop in the bucket".

#### Further Tests of Chain Fender Machines.

Additional testing of the chain fender machinery in the upper chamber of the west flight of Gatun Locks was made on Tuesday, November 16, with the steamship *Cristobal* of the Panama Railroad Steamship Line. Previous tests had been made on October 26 with the *Allianca*, and the tests with the *Cristobal* were meant to determine the action with a larger vessel and at the same time to study the effect of changes made in the machinery after the tests with the *Allianca*. During

the trials the *Cristobal* was laden with most of the cargo with which she arrived from New York on November 13. The discharge of cargo began in the morning of Wednesday, November 17, at Pier 9, *Cristobal*.

The order established early in November, to maintain the surface of Gatun Lake at 85 feet above sealevel throughout this month, has been amended by establishing the limit at 85.50 feet.

### LABOR FORCE AND QUARTERS IN OCTOBER.

The force report of Wednesday, October 27, shows the actual working force of The Panama Canal on that date to have been 19,808; of the Panama Railroad, 3,916; and of contractors, 343, a total effective working force of 24,067. This is an increase of 306 over the 23,761 employed on September 22; a decrease of 1,357 from the force on August 25, which was 25,424; is 2,838 less than the 26,905 employed on July 21; is 2,830 less than the 26,897 employed on June 23; is 2,367 less than the 26,434 employed on May 26; and 748 less than the 24,815 employed on April 21. It is, however, 693 more than the 23,374 employed on March 24, and 722 more than the 23,345 employed on February 24. The force employed on January 20, was 24,853, which is 786 more than that employed on October 27.

The gold force on the Isthmus on October 27, composed almost exclusively of white Americans, was 3,743, an increase of 143 from the 3,600 employed on September 22; an increase of 147 over the 3,596 employed on August 25; 122 more than the 3,621 on July 21; 150 more than the 3,593 employed on June 23; 128 more than the 3,615 on May 26; and 382 more than the 3,361 employed on April 21. The gold force on October 27, numbering 3,743 was distributed as follows: The Panama Canal, 3,270; the Panama Railroad, 363; contractors, 110. Detailed figures of the employment on the Isthmus on October 27 follow:

DEPARTMENT OR DIVISION.	SILVER EMPLOYEES*													Total silver.	Total gold.	Grand total.
	Artisans.						Laborers.									
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Euro- pean	16 cents.	13 cents.	10 cents.	7 cents.	5 cents.			
Operation and Main- tenance; locks & office	429	1	3	27	66	11	.....	.....	7	9	.....	.....	553	180	733	
Terminal Construct'n	410	.....	54	202	454	101	26	84	310	399	2	19	2,061	265	2,326	
Building Division.....	110	2	365	527	603	26	.....	3	273	162	2	10	2,083	181	2,264	
Electrical.....	88	7	36	50	106	140	.....	.....	45	1	.....	.....	4	477	166	643
Municipal Eng.....	298	.....	55	162	193	154	81	18	197	765	12	34	1,971	88	2,059	
Dredging.....	1,387	.....	11	37	115	47	.....	.....	1	128	33	.....	4	2,261	334	2,598
Mechanical.....	146	8	62	114	586	601	.....	.....	14	44	161	6	7	1,749	825	2,574
Marine Division.....	164	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	164	53	217
Fortifications.....	56	.....	32	59	103	17	20	1	79	85	.....	.....	422	83	505	
General Construct'n	4	.....	.....	.....	.....	1	.....	1	10	49	1	.....	66	2	68	
Total.....	3,592	19	618	1,178	2,228	1,098	127	122	1,093	1,634	23	78	11,810	2,177	13,987	
Supply; main office.....	818	.....	4	6	2	9	250	.....	.....	171	25	1	1,305	165	1,470	
Commissary.....	528	.....	3	3	2	9	.....	.....	.....	.....	.....	.....	545	30	575	
Subsistence.....	805	42	67	70	71	.....	7	17	113	639	7	1	1,838	81	1,919	
Quartermaster.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Accounting.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23	203	226	
Health.....	396	3	3	4	13	.....	6	.....	32	408	9	11	892	180	1,072	
Executive.....	123	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	125	419	544	
Panama Railroad.....	339	124	40	187	398	680	783	24	493	465	9	11	3,553	363	3,916	
Contractors.....	40	4	7	34	11	.....	108	.....	49	5	.....	.....	233	110	343	
Grand total.....	6,664	193	743	1,482	2,739	1,800	1,281	164	1,750	3,322	66	120	20,324	3,743	24,067	
Month previous.....	6,416	163	765	1,536	2,971	1,242	925	144	2,103	3,717	53	121	20,161	3,600	23,761	
Changes.....	+248	+25	-22	-54	-232	+558	+356	+20	-353	-395	13	-1	+163	+143	+306	

\*The wages are stated in United States currency.

#### QUARTERS.

A summary of the occupation of Government quarters on the Isthmus on October 31, 1915, is given below:

PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa <sup>(1)</sup>	893	249	242	145 <sup>(2)</sup>	8	15	1,482 <sup>(3)</sup>	476	638
Ancon.....	950	423	354	.....	.....	.....	244	19	.....
Corozal.....	63	41	32	1	1	1	194	34	53
Pedro Miguel.....	218	110	136	8	.....	.....	315 <sup>(4)</sup>	38	50
Culebra <sup>(5)</sup>	308	79	90	124	.....	16	463	104	147
Gambos.....	23	14	14	3	2	7	431 <sup>(6)</sup>	278	323
Gatun.....	20	3	6	.....	.....	.....	111	19	34
Colon.....	21	172	224	61	3	8	648	356	618
Cristobal <sup>(7)</sup>	1,031	337	405	84	.....	.....	1,631 <sup>(8)</sup>	189	390
Total.....	3,732	1,420	1,503	420	19	44	5,519	1,513	2,310

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 13 Asiatics. (3) Includes 18 American negroes, 60 Colombian and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores. (5) Includes 30 Panamanians. (6) Includes Empire, Las Cascaidas, and Bas Ojisojo. (7) Includes 13 Panamanians. (8) Includes Colon Beach and Colon Hospital. (9) Includes 20 East Indians, 18 colored American citizens, and 148 Panamanians.

## FROM MANILA TO NEW YORK.

Vessel Choosing Panama Canal Instead of Suez Found It Closed.

One of the vessels which was held up at the Pacific end of the Canal by the suspension of traffic resulting from the slides at Culcra was on the way from Manila to New York. The distance from Manila to New York by the Panama Canal, sailing by Yokohama and the Great Circle to San Francisco, is 11,585 miles; by way of Guam and Honolulu it is

11,675 miles. By way of the Suez Canal the distance is 11,601 miles. It is thus seen that there is little choice among the routes as far as distance alone is concerned, and the ship's coming this way instead of by the Suez Canal was due less to this consideration than to conditions affecting the particular vessel at this time. When the ship arrived at Balboa the Canal was closed. It was accordingly necessary for the remainder of the voyage to be made by way of the Strait of Magellan. This meant

an additional run of approximately 11,130 miles. This is almost as much as the regular voyage from Manila to New York by either of the canals.

The region including the Philippines, Australia, and New Zealand, and Japan is almost antipodal to the Atlantic ports of the United States and Europe. The lines of equal distance by Suez and by Panama from New York and Liverpool are shown in the accompanying map.



MAP SHOWING LINES OF EQUAL DISTANCE FROM NEW YORK AND LIVERPOOL BY SUEZ AND PANAMA CANALS.

## QUARANTINE ACTIVITIES.

Immigration Exceeded Emigration in October.—  
Smallest Number of Inspections This Year.

Immigration to the Isthmus from foreign ports during the month of October, 1915, exceeded emigration to foreign ports during the month by 206 persons, according to the count kept by the quarantine officials of the ports of Cristobal-Colon and Balboa-Panama. This makes the net emigration since July 1, 1913, a period of two years and four months, amount to 26,928. This is at the rate of 961.7 per month, or 31.6 per day. During approximately the same period the Canal force diminished from 42,262 on June 25, 1913, to 24,067 on October 27, 1915, a decrease of 18,195, which is at the rate of 649.8 per month, or 21.3 per day.

The total number of passengers and crews examined at the ports during September was 14,476, the least for any month in this year since February. A comparison with the preceding months since the beginning of the year is afforded by this tabulation:

Month.	Passengers.	Crews.	Total.
January.....	3,887	10,232	14,119
February.....	4,300	9,332	13,632
March.....	6,014	12,155	18,169
April.....	3,605	11,032	14,637
May.....	5,391	11,772	17,163
June.....	4,969	12,756	17,725
July.....	4,974	14,136	19,110
August.....	4,900	14,814	19,714
September.....	4,606	13,514	18,120
October.....	3,940	10,536	14,476
Total.....	46,586	120,279	166,865

The total number inspected in October was slightly less than three-fourths of the total number in August. August was the second month in quantity of traffic through the Canal, being exceeded only by July; and the great falling off in numbers in October is attributed to the closing of the Canal on September 18, and its remaining closed throughout October. The total number of vessels inspected during October was 168, as compared with 234 in September, and 221 in August.

The examination of 166,865 persons in the 10-month period is at the average rate of 16,686.5 persons per month, or 548.9 per day. A summary of the quarantine activities on the Isthmus during October is given in this consolidated report for the ports of Balboa-Panama and Cristobal-Colon:

Number of vessels inspected and passed	156
Number of vessels held in quarantine.....	12
Total.....	168
Number of vessels fumigated on arrival	9
Number of vessels fumigated on departure.....	1
Total.....	10
Number of crew examined.....	10,536
Number of passengers examined.....	3,940
Total.....	14,476
Number of supplementary inspections	1,243
Number of persons vaccinated at ports of arrival because of compulsory vaccination law.....	430
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law.....	386
Total.....	816
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and plague.....	270
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague.....	1,746
Total.....	2,016
Number of persons landed from foreign ports:	
Cabin.....	2,262
Steerage.....	1,026
Total.....	3,288

Number of persons embarked for foreign ports:	
Cabin.....	1,592
Steerage.....	1,490
Total.....	3,082
Number of persons arriving from coast towns on small launches and sailing craft.....	1,637
Number of persons sailing for coast towns on small launches and sailing craft.....	1,108
Apparent increase for month from coast towns.....	329
Apparent increase for month from foreign ports:	
Cabin.....	670
Steerage (decrease).....	464
Total.....	206
Number of immigrants recommended for deportation.....	27
Number of bills of health issued or voided.....	155
Number of inspections of docks.....	108
Number of inspections of vessels at docks.....	156
Number of persons landed.....	4,925
Less number for Pacific ports.....	525
Total.....	4,400
Total number of persons sailing.....	4,190
Total apparent increase for month.....	210

The immigration report for Colon, which is the port receiving the majority of passengers, classifies the immigrants during October, by places of origin, as follows:

From	Cabin	Steerage
Europe.....	47	6
United States.....	864	36
Jamaica and West Indies.....	108	236
Venezuela.....	5	1
Colombia.....	107	107
Cuba.....	33	19
Costa Rica.....	108	32
Bocas del Toro.....	50	197
Coast towns.....	202	
Total.....	1,322	836
Grand total.....	2,158	
Of the 2,158, the men numbered 1,143; women, 567; children, 246; and 202 were not classified.		

Religious and School Facilities at Pedro Miguel  
Silver Settlement.

Several applications for the assignment of lots in the vicinity of the new quarters for silver employees south of Pedro Miguel, for the erection of church and mission buildings, are in the hands of the Governor. He has appointed a committee, consisting of the General Inspector of the Health Department, chairman, the Chief Quartermaster, the Municipal Engineer, and the Land Agent, to consider and report on the presumable extent to which religious and school facilities will be necessary or desirable in connection with the settlement. The same rules will govern the assignments as have been followed in other settlements. These rules were set forth in a circular letter on May 16, 1914, as follows:

CULEBRA, C. Z., May 16, 1914.

To all concerned—It is desired to assign lots to such churches and religious organizations as desire them in such settlements as suitable areas are available, in general accordance with the following terms:

Lots will be leased under revocable license at a nominal rental.

Such lots may be used for the erection of church buildings by the different churches and religious societies, and for the erection of quarters for the priest, or for the minister or pastor and his family.

This revocable license will not permit the sub-letting or the use of the lot by any other than the person or the persons named in it.

The church or the church society will be expected to bear all expenses connected with the construction of the buildings on the lots and the use thereof, including payment for electric light, water, etc. The lessee will be expected to conform to all administrative and sanitary rules and regulations.

\* \* \* \* \*

GEO. W. GORTHAUS,  
Governor.

The committee will hold its first meeting on Wednesday, November 24, at 2 p. m., in the old Administration Building at Ancon. Those who have made applications for lots for church or mission use are invited to be present at the meeting to state their requirements, and the Superintendent of Schools will submit his views as to the need of space for school purposes.

## Proposed Construction of New Quarters.

In the proposed building program for the next fiscal year, which will begin July 1, 1916, are included items covering the construction of 581 additional apartments for family quarters for gold employees, and 432 apartments for silver employees. The proposed distribution of the gold quarters, subject to the appropriation of funds for the construction, is as follows:

At Balboa, 79 four-family houses, and 100 one-family, type-17 cottages.

At Cristobal, 25 one-family cottages, and 19 four-family houses.

At Pedro Miguel, 16 one-family cottages, and 12 four-family houses.

The proposed distribution of the new silver quarters is to erect 21 houses at Paraiso and 15 at La Boca, each house containing 12 apartments.

All of these quarters are to be of frame construction, except four four-family houses at Balboa, which will be of concrete.

## Applications for Family Quarters.

Applications for married quarters were on file on October 31, 1915, as follows:

STATIONS.	Number of applications.
Ancon.....	356 (77)
Paraiso.....	175 (22)
Gatun.....	127 (15)
Cristobal.....	149 (34)
Total.....	807 (148)

NOTE—The figures in parentheses show the numbers of applicants already occupying regular or nonhouse-keeping family quarters at stations other than those at which applications are filed.

## Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Bent, Michael (Michael Best).....	83311	Jamaica.....	Balboa.....	P. R. R.....	Nov. 5, 1915.
Muniz, Javan.....	90265	Jamaica.....	New Gatun.....	P. R. R.....	Nov. 9, 1915.
Simons, Corbin.....	60442	Jamaica.....	Panama.....	Marine Div.....	Nov. 5, 1915.
Archer, Joseph.....	36423	Barbados.....	Gatun.....	O. & M. Dept.....	Oct. 31, 1915.
Herrera, Julio Ballesta.....	36524	Panama.....	Gatun.....	O. & M. Dept.....	Oct. 30, 1915.
Marshall, Alexander.....	83419	Jamaica.....	Panama.....	Health Dept.....	Nov. 2, 1915.
Stanton, Charles J.....	4276	U. S. A.....	Ancon.....	Building Div.....	Nov. 4, 1915.

The estates of the abovementioned deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## OFFICIAL CIRCULARS.

## Baggage Tariff—Ancon, Balboa, and Panama.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., November 10, 1915.

## CIRCULAR No. 706:

The following tariff of rates for the transfer and transportation of baggage, other than over the Panama Railroad, between the several points hereinafter named, will be in force and effect from and after its publication in THE CANAL RECORD:

## TRUNKS.

From any point in Panama to entrance to Balboa docks—75 cents each.

From any point in Ancon or Balboa to entrance to Balboa docks—50 cents each.

From street car terminus, Balboa, to entrance of old Balboa dock—15 cents each.

## HAND BAGGAGE AND PARCELS.

From any point in Panama to entrance of Balboa docks—15 cents each for the first three pieces and 10 cents for each additional piece; minimum charge of 25 cents.

From any point in Ancon or Balboa to entrance of Balboa docks—10 cents for first three pieces and five cents for each additional piece; minimum charge of 25 cents.

From street car terminus, Balboa, to entrance of old Balboa dock—Five cents for each piece, with a minimum charge of 10 cents.

In lieu of the above rates, special agreements as to charges may be made by the persons interested.

GEO. W. GOETHALS,  
Governor.

## Handling Official Files and Records.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., November 13, 1915.

To all concerned—The following rules will govern the handling of official files and records belonging to the record room of this office:

1. No files or index cards are to be removed from the file drawers, except by clerks employed in the record room.

2. Under no circumstances shall papers be detached or removed from any file without authority from the Executive Secretary or chief clerk.

3. All official correspondence and files must be returned promptly to the record room after receiving attention. If a letter be written thereon, all papers shall be kept together, in order that the subject will be complete when reaching the record room. If the same papers are desired for further use, they shall be requested in the regular way. In no case shall papers be withheld from the record room more than one week. If necessary to suspend any papers for future attention, a memorandum suspension should be kept on the desk, or the record room requested to suspend the material.

4. When files are withheld they shall be left on top of desks, and under no circumstances placed in drawers or other obscure places.

5. When files are missing, a clerk from the record room is authorized to visit and examine any room in order to locate such files.

GEO. W. GOETHALS,  
Governor.

## Positions on Dipper Dredges.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., November 1, 1915.

CIRCULAR No. 603-10 (Revoking circulars Nos. 603-3 and 605-1):

1. O. O. the recommendation of the Board of Local Inspectors, approved by the Marine Superintendent, all of circular No. 603-3, dated May 8, 1914, and paragraph 133 of circular No. 614, dated May 1, 1914, concerning positions on dipper dredges in the service of The Panama Canal, are revoked, effective October 30, 1915.

2. All of circular No. 605-1, dated November 9, 1914, concerning seniority of dipper dredge men, is also revoked, effective October 30, 1915.

GEO. W. GOETHALS,  
Governor.

## Payment of Charges for Garage Rental and Boarding Animals in Corrals.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., November 8, 1915.

CIRCULAR No. 672-1:

Paragraphs 5 and 6 of Circular No. 672, dated June 1, 1914, are hereby amended to read as follows:

5. Monthly charges for rental of stalls in garages and boarding animals at corrals shall be paid in advance on or before the 15th of the month in which the charges accrue. Unless actually paid or a re-

mittance letter mailed to the Collector, Panama Canal, on or before the close of business on the 15th of the month or the day preceding, when the 15th falls on a Sunday or a holiday, a penalty of 50 cents shall be added and the charge and penalty may be deducted from the employer's current monthly pay.

Memorandum bills will hereafter be rendered by the Auditor's office for garage rental and boarding animals in corrals but the failure of any person to receive such memorandum bill will not relieve such person from the payment of the penalty if not paid within the time prescribed.

6. Before an animal is received in a corral or an automobile placed in a garage stall the charge for the current calendar month must be paid. The charge for a fractional part of a month shall be determined and paid as if each and every month contained 30 days. The monthly charge will not be reduced and no refund will be made unless the animal is removed from the corral or an automobile from the garage stall prior to the 26th of the month; in case an animal is removed from the corral or an automobile from the garage stall prior to the 26th of the month, a charge will be made for five days more than the actual time the animal was in the corral, or the stall in a garage occupied. Any refund made will be on the basis of 30 days in each and every month.

GEO. W. GOETHALS,  
Governor.

## Discharge for Unsatisfactory Service or Poor Conduct.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., November 5, 1915.

CIRCULAR No. 604-4:  
When an employee is discharged for unsatisfactory service, or poor conduct, a statement should accompany the formal termination papers, giving the facts upon which the action has been taken. This detailed information is frequently needed by this office and should be a matter of record.

GEO. W. GOETHALS,  
Governor.

## Transfer Charge of \$3 per Ton Still in Effect.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., November 6, 1915.

To all concerned—That part of paragraph one, page two, of circular No. 167, issued October 20, 1915, reading as follows:

"On October 31, 1915, the above rate of \$3 per bill-of-lading ton, will cease."

is hereby cancelled.

The transfer charge of \$3 per bill-of-lading ton still applies to steamers desiring to make transfer, applicable only under the conditions specified in paragraphs A, B, C, D, and E, page 1. Classified rates specified to be applied when agents or steamers prefer to avail of them rather than the \$3 rate, because of the conditions under which it is applicable.

C. H. MOTSETT,  
Superintendent.

## Panama Railroad Vessels to Sail on Thursdays from Cristobal.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., November 11, 1915.

CIRCULAR No. 189:

To all concerned—During the time the Canal is closed and Panama Railroad steamers terminate at Cristobal, commencing with the next homebound trip of the steamship *Panama* (scheduled to sail Saturday, November 20), all Panama Railroad steamers will depart from the Isthmus for New York on the preceding Thursday as shown on sailing list, until further notice.

The steamship *Panama* will sail for New York on Thursday, November 18, 1915, at 3.00 p. m.

C. H. MOTSETT,  
Superintendent.

## Taboga Landing Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p. m.; Monday, Thursday, Saturday, and Sunday, at 9.40 a. m.

Leave Taboga—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier); Monday, Thursday, and Saturday at 1.30 p. m.; Sunday at 7.15 p. m. The 9.40 a. m. trips from Balboa await the arrival of Panama Railroad trains.

There will be no 5.30 p. m. trip from Balboa on Sundays and holidays, unless the number of guests desiring transportation from Taboga exceeds the number that the launch is able to take in one trip; in which case a trip will be started from the Aqueduct landing at 3 p. m., reaching Balboa in time to leave again at 5.30.

## JOINT LAND COMMISSION.

## Notice of Awards.

In the matter of the claim of Leon Castillo, for property located at Gorgona, award No. 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 6th day of December, 1915, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

Leon Castillo, docket No. 1098—For all right, title, and interest which the said Leon Castillo may possess or may have possessed in and to crops, fruit trees, and any other improvements at Gorgona, the sum of \$148.50 United States currency.

R. J. ALFARO, FREDERICO BOYO, NICHOLAS CORNET, Commissioners.

Commissioner Levi M. Kagy took part in the adjudication of this claim, but does not concur in the award.

LEVI M. KAGY.

In the matter of sundry claims, award No. 99, docket numbers as noted, October 20, 1915—An award is hereby made against the United States in favor of the persons hereinafter named, in the sum of \$975 United States currency.

This award shall be paid to the persons hereinafter named, in the amounts specified, on or before the 30th day of November, 1915, and if payment or tender of payment of any item of this award is not made on or before that date, each item shall thereafter bear interest at the rate of six per centum per annum until paid.

Justo Santa Maria, docket No. 1025 and 3401—For all right, title, and interest which the said Justo Santa Maria may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements at Vamo Vamos and Peñas Blancas, the sum of \$75.

Miguel Oberio (Ouelio), docket No. 1029—For all right, title, and interest which the said Miguel Oberio may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements at Rancho Quemado, the sum of \$250.

Richard Wesley, docket No. 1033—For all right, title, and interest which the said Richard Wesley may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements on the Chagres River, the sum of \$100.

Ana, Benilda, Vicente, Antonio, M. E., and E. Icaza C., docket No. 1039—For all right, title, and interest which the said Ana Icaza, Benilda Icaza, Vicente Icaza, Antonio Icaza, M. E. Icaza, and E. Icaza C. may possess or may have possessed in and to the lands of "Palo Diferento" or "Zapote", together with all improvements thereon, the sum (in equal shares) of \$550.

Total, \$975 United States currency.

RICHARD J. ALFARO, FREDERICO BOYO, JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

## Rules of Dismissal.

In the matter of the claim of Gervasio Morales, for property located in Trinidad Valley, rule of dismissal No. 203, docket No. 986, October 23, 1915—The claim of Gervasio Morales, docket No. 986, which came on for hearing on October 31, 1915, is hereby dismissed, as the evidence presented to the Commission does not justify an award being made.

NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of the claim of Gavino Morales, for property located in Trinidad Valley, special concurring rule of dismissal No. 203-A, docket No. 986, October 23, 1915—The claim submitted by Gavino Morales, docket No. 986, and the evidence before the Commission shows that the claimant was an occupier of auxiliary public lands in the Republic of Panama in the valley of the Trinidad River outside of the legal zone required for Canal purposes; that she had been paid for earlier improvements thereon and that afterwards she started new cultivations in said region below the 100-foot contour line in 1913, some time after the government of the Republic of Panama had issued decree No. 46 of May 17, 1912, Article 2 of which reads as follows:

"Article 2. Settlement or entry upon the national public lands included in the belt three miles in width surrounding and immediately contiguous to the 100-foot contour line above mentioned is hereby temporarily prohibited."

The conclusion of the undersigned Commissioners on the part of the Republic of Panama is, therefore, that, inasmuch as claimant was occupying the land above referred to in direct contravention of law, no rights had accrued in her favor and she is not entitled to any award against the United States, this claim being accordingly dismissed.

R. J. ALFARO, R. ARIAS F., JR., Commissioners.

## COMMISSARY DEPARTMENT.

## Delivery of Fresh Milk and Cream in Ancon.

The Ancon commissary has recently started an experiment in which weekly orders for fresh milk and cream are taken in advance for delivery to families immediately after the arrival of the supply train. Delivery wagons usually leave the commissary between 6.15 and 6.30 a. m., completing the delivery between 7 and 7.30. Commissary patrons who desire to take advantage of this service are requested to consult the manager of the Ancon commissary.

## Baskets of Fruit and Candy for Steamships or Hospitals.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., November 10, 1915.

## BULLETIN No. 420:

To commissary managers—There has been added to our hardware stock a small supply of fruit baskets, SN-28662, at 47 cents each. These baskets are available for persons who desire to purchase a basketful of fruit (and perhaps candies), for delivery to steamships or hospital wards only. The charge in such cases will be the value of the basket, the exact value of the fruit and candy packed therein, plus a charge of 25 cents for extra labor, special delivery, and a ribbon bow which will be tied to the handle of the basket.

Commissary managers should inform their patrons that orders will be transmitted by them to the order desk of this office or to Ancon commissary, upon receipt of payment of the value of the fruit and candy in the quantity desired, plus 72 cents for the other charges. It may, of course, at times be necessary to estimate the cost of the fruit when payment is being accepted, until the exact value can be ascertained.

BENJ. L. JACOBSON,  
Depot Commissary.

## Articles Temporarily Out of Stock.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., November 11, 1915.

## BULLETIN No. 423:

To commissary managers—Several instances have come to my attention recently where commissary managers (and their subordinates), particularly at small commissaries, have failed to make reasonable efforts to secure for customers immediately articles which are temporarily out of stock in their stores or at the depot but which may be obtained on short notice from other commissaries.

Existing instructions, with which all commissary employees should be familiar, are to the effect that when an article is called for which is temporarily out of stock, it should be obtained from some other commissary if not available at the depot; the manager of a small commissary who receives a call for an article not usually carried by him who merely places a requisition on the wholesale section and waits for it to arrive, does not do half of what is expected of him. He is expected to keep behind the order until it is filled or he can notify the customer that it is not obtainable anywhere on the Isthmus.

Strict compliance with above instructions is enjoined upon all concerned.

BENJ. L. JACOBSON,  
Depot Commissary.

## Fruit Cakes.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., November 11, 1915.

Memorandum to all commissary managers—One dollar fruit cakes will be ready for sale on and after November 22, 1915.

It is suggested that you advertise this fact and begin to take orders at once for deliveries on and after that date.

BENJ. L. JACOBSON,  
Depot Commissary.

## Appearance of Plantains.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., November 11, 1915.

## BULLETIN No. 422:

To commissary managers—Please bring to the attention of your patrons the fact that plantains are not considered good for cooking until they have become quite black and appear to be rotten on the outside.

This should eliminate dissatisfaction and complaints which are likely to be made.

BENJ. L. JACOBSON,  
Depot Commissary.

## Cold Storage Prices.

The following list gives retail prices of cold storage provisions which will be effective November 18, 1915. The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yacht.

FRESH BEEF.		Price.
Beef, suet, special, per lb.	03	34
Beef suet, native, per lb.	03	34
Soup beef, special, per lb.	07	
Soup beef, native, per lb.	05	
Soup bone, special, per lb.	02	34
Soup bone, native, per lb.	01	34
Stew beef, special, per lb.	11	
Stew beef, native, per lb.	08	
Matte beef, special, per lb.	12	
Matte beef, native, per lb.	08	
Chuck roast (3 lbs up), special, per lb.	12	
Chuck roast (3 lbs up), native, per lb.	08	
Rib roast, 24 cut (34 lbs up), special, per lb.	16	
Rib roast, 24 cut (34 lbs up), native, per lb.	10	
Rib roast, 1st cut (3 lbs up), special, per lb.	19	
Rib roast, 1st cut (3 lbs up), native, per lb.	11	
Pot roast, special, per lb.	20	
Pot roast, native, per lb.	12	
Rump roast, special, per lb.	20	
Rump roast, native, per lb.	12	
Porterhouse steak, choice, per lb.	31	
Porterhouse steak, special, per lb.	31	
Porterhouse steak, native, per lb.	16	
Chuck steak, special, per lb.	13	
Chuck steak, native, per lb.	09	
Round steak, bottom, special, per lb.	09	
Round steak, bottom, native, per lb.	15	
Round steak, top, special, per lb.	10	
Round steak, top, native, per lb.	10	
Sirloin steak, special, per lb.	12	
Sirloin steak, native, per lb.	12	
Sirloin steak, choice cut, special, per lb.	23	
Sirloin steak, choice cut, native, per lb.	16	
Rump steak, special, per lb.	12	
Rump steak, native, per lb.	12	
Porterhouse steak (14 lbs up), special, per lb.	34	
Porterhouse steak (14 lbs up), choice, per lb.	23	
Porterhouse steak (14 lbs up), native, per lb.	17	
Porterhouse steak, short, choice, per lb.	25	
Porterhouse steak, short, special, per lb.	20	
Porterhouse steak, short, native, per lb.	12	
Tenderloin steak, special, per lb.	35	
Tenderloin steak, native, per lb.	27	
Tenderloin steak, western, special, per lb.	27	
FRESH MEATS.		
Lamb chops, per lb.	29	
Lamb chops, shoulder, per lb.	20	
Lamb, legs, 5 to 8 lbs., per lb.	24	
Lamb, shoulder, trimmed, not less than 34 lbs., per lb.	15	
Lamb, stewing, per lb.	15	
Mutton chops, short cut, per lb.	23	
Mutton chops, shoulder, per lb.	17	
Mutton, leg, 8 to 10 lbs., per lb.	19	
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	12	
Mutton, stewing, per lb.	12	
Pork hams, fresh (see footnote), per lb.	25	
Pork loins, chops, or roast, per lb.	24	
Pork, shoulders, fresh (see footnote), per lb.	20	
Pork chops, per lb.	20	
Veal chops, per lb.	27	
Veal cutlets, per lb.	45	
Veal, loin for roasting, per lb.	40	
Veal, shoulder for roasting, not less than 14 lbs., per lb.	20	
Veal, stewing, per lb.	16	
MISCELLANEOUS.		
Brains, calves', per lb.	07	
Calves' heads, ea.	78	
Kidneys, beef, per lb.	09	
Livers, beef, per lb.	24	
Livers, calves', per lb.	27	
Pates de foie gras, jar.	07	
Pigs' feet, fresh, per lb.	07	
Pigs' head, fresh, whole, ea.	83	
Pigs' heads, fresh, 1/2 head, half.	42	
Sausage, bologna, per lb.	12	
Sausage, frankfurter, per lb.	14	
Sausage, liverwurst, per lb.	10	
Sausage, pork, per lb.	28	
Sausage, pork, homemade, per lb.	24	
Spare ribs, pork, per lb.	17	
Steak, hamburger, pkg.	17	
Steak, hamburger, 20-pound container, per lb.	14	
Sweet bread, beef, per lb.	18	
Tongue, beef, native, whole, per lb.	09	
Yeast, per lb.	31	
Yeast, cake	02	
CURED AND PICKLED MEATS.		
Bacon, breakfast, whole piece, per lb.	31	
Bacon, breakfast, sliced, per lb.	32	
Bacon, sliced, jar.	28	
Bacon, sliced, tin.	27	
Bacon, squares, whole square, per lb.	19	
Bacon, strips, whole strip.	26	
Beef, corned—No. 1, per lb.	15	
Beef, corned—No. 2, per lb.	12	
Ham, genuine Westphalia, per lb.	50	
Ham, lunch, per lb.	46	
Ham, picnic, "Bologna" style, per lb.	13	
Ham, shoulder, boneless, sugar cured, whole shoulder, per lb.	18	
Ham, sugar cured (whole) per lb.	23	
Ham, sugar cured (half) per lb.	26	
Ham, sugar cured (sliced) per lb.	31	
Ham, sugar cured, boiled (whole) per lb.	29	

Ham, sugar cured, boiled (half)	32
Ham, sugar cured, boiled (sliced)	27
Pigs' feet, pickled, per lb.	02
Pork, bellies, per lb.	18
Pork, clear, per lb.	11
Pork, standard mess, per lb.	11
Tongue, beef, corned, native, whole, per lb.	20
Tongue, ox, whole, 3 to 5 lbs., per lb.	24
Tongue, pigs', per lb.	22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	31
Broilers, milk fed, per lb.	34
Capons, per lb.	34
Chickens, fancy roasting, corn fed, per lb.	29
Chickens, fancy roasting, milk fed, per lb.	33
Ducklings, per lb.	70
Ducks, mallard, 2 to 24 lbs.	75
Fowls, light, per lb.	23
Fowls, western, dry picked, per lb.	25
Geese, per lb.	22
Grouse, ea.	60
Squabs, ea.	44
Turkeys, per lb.	32

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	41
Butter, creamery, 62 lb. lb.	38
Butter, Sheffield farms, extra fancy, per lb.	38
Cheese, Edam, ea.	1.15
Cheese, Edam, tin.	30
Cheese, Gouda, per lb.	39
Cheese, Parmesan, per lb.	39
Cheese, Philadelphia cream, cake.	09
Cheese, Roquefort, per lb.	51
Cheese, snappy, cake.	09
Cheese, Swiss, per lb.	40
Cheese, Young America, per lb.	20
Cream, 30 per cent, 1 pt.	17
Cream, 30 per cent, pt.	29
Cream, 30 per cent, qt.	22
Eggs, fresh, per doz.	47
Eggs, fresh, 3 doz. (only)	24
Fer-mil-lac, bottle.	25
Ice cream, (see footnote), 1 gal.	50
Ice cream, (see footnote) 1 gal.	50
Milk, Sheffield farms, qt.	15
Oleomargarine, per lb. carton.	29

## FISH.

Bluefish, fresh, per lb.	16
Cornish, dried, per lb.	11
Haddock, smoked, per lb.	09
Halibut, fresh, per lb.	11
Herring, smoked, per lb.	11
Oysters, fresh, per lb.	31
Salmon, fresh, per lb.	10
Whitefish, smoked, per lb.	18

## VEGETABLES.

Beets, per lb.	02
Cabbage, per lb.	01
Carrots, per lb.	01
Cauliflower, per lb.	15
Celery, per head.	04
Chocho, each.	02
Cucumbers, per lb.	13
Eggplant, per lb.	13
Lettuces, per lb.	02
Onions, per lb.	03
Peas, per lb.	10
Peppers, green, per lb.	10
Plantains, per doz.	12
Potatoes, white, per lb.	02
Potatoes, sweet, per lb.	02
Potatoes, sweet, tropical, per lb.	02
Squash, per lb.	02
Squash, fancy, per lb.	08
Tomatoes, per lb.	07
Turnips, per lb.	02
Yams, lucas, per lb.	03

## FRUITS, DRIED.

Apples, evaporated, per lb.	13
Apricots, evaporated, per lb.	15
Currants, cleaned, pkg.	13
Figs, dried, 12-oz pkg.	14
Peaches, evaporated, per lb.	07
Pears, evaporated, per lb.	07
Pear, citron, per lb.	22
Pear, lemon, per lb.	16
Pear, orange, per lb.	16
Pears, stewing, per lb.	10
Raisins, seeded, pkg.	10
Raisins, table cluster, per lb.	23

## FRUITS, FRESH.

Apples, fresh, select, per lb.	04
Apples, fresh, select, per lb.	06
Bananas, 8 hands, average, per bunch.	40
Bananas, 6 and 7 hands, per bunch.	28
Bananas, ea.	04
Coconuts, ea.	04
Grapes, Malaga, per lb.	14
Grapefruit, select, ea.	09
Grapefruit, tropical, ea.	03
Lemons, per doz.	11
Limes, per 100	04
Oranges, select, ea.	04
Oranges, tropical, per doz.	12
Pears, fresh, per lb.	08

\* Indicates advance from preceding list.

\*\*Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.



## SHIPPING INFORMATION.

## December Weather Probabilities.

The following weather conditions may be expected at the Canal entrances during the month of December, 1915. Predictions are based on Ancon and Colon records for the past eight and nine years, respectively.

**Winds**—With the approach of the dry season there will be an acceleration of the wind movement at both Canal entrances. North and northeast winds will prevail over the Atlantic coast with an average hourly velocity from nine to 14 miles an hour, the higher velocity occurring from noon to 5 p. m. The maximum velocity for a 5-minute period is not likely to exceed 35 miles an hour.

Northwest winds will continue over the interior and at the Pacific entrance, the average hourly velocity being from six to nine miles an hour. Here, too, a maximum velocity of 35 miles an hour may occur, but the probability of such a velocity is slight.

**Rain**—The month of December usually marks the transition from rainy season to dry season conditions. Occasionally the dry season begins as early as the first of the month, while in other years rainy season weather has continued until the end of the month. The tendency is for the rains to linger later in the season along the Atlantic than on the Pacific and for the percentage of daytime rainfall to be greater on the Pacific side. The average rainfall for the month is 12.10 inches at the Atlantic entrance, and 4.44 inches at the Pacific, these averages being for periods of 44 and 18 years, respectively. Twenty-three days with rain may be expected on the Atlantic coast, and 16 on the Pacific side, while the average numbers of days with heavy rain (1.00 inch or more) are four and two, respectively.

**Fogs**—No fogs are likely to occur at either Canal entrance, but night and early morning fogs may be expected over the interior. The average number of fogs during the month over the Gaillard Cut section of the Canal is 15. As practically all of these fogs lift or become dissipated before 8.30 a. m., they should not prove a hindrance to navigation.

**Temperature**—The average shade air temperature should be about 79° Fahrenheit on the Atlantic coast and about 80° on the Pacific. On the Atlantic coast the temperature is not likely to rise higher than 89° F. or fall lower than 66° F., while on the Pacific side a maximum temperature of 94° F. may occur. Sixty-six degrees Fahrenheit is the record minimum on both coasts. The maximum temperature for the day usually occurs between noon and 2 p. m. and the minimum between 4 and 6 a. m. The mean daily range in temperature should be about 8° F. on the Atlantic coast, and 16° F. on the Pacific.

**Barometric pressure**—Atmospheric pressure over the Isthmus is remarkably constant and uniform, and except for the well marked diurnal change, changes in pressure are so slight that they have little value as indicators of future weather conditions. The average sealevel pressure will continue close to 29.85 inches. The maximum reading for the month is not likely to exceed 30.00 inches, or the minimum to fall lower than 29.65 inches.

**Relative humidity**—With the arrival of the dry season there will be a decrease in the percentage of moisture in the air. The humidity should average about 85 per cent over both

coasts. The range, however, is greater on the Pacific coast, percentages ranging between 67 per cent and 92 per cent. On the Atlantic coast the humidity should vary between 80 per cent and 90 per cent.

**Storms**—The so-called "northers" occasionally reach as far as the Atlantic entrance to the Canal during the period from November to April. These storms are characterized by steady, brisk, northerly winds, ranging in velocity up to 30 or more miles an hour. The winds alone are of insufficient force seriously to affect navigation, but they are usually accompanied by a heavy sea or swell that may at times prove troublesome. Local thunderstorms will not be so frequent during the month of December. The average number of thunderstorms during the month is four on the Atlantic coast, and five on the Pacific.

Smooth seas may be expected throughout the month at the Pacific entrance to the Canal.

**Tides**—Tidal fluctuations at Colon are so slight that they need not be considered in navigating the Atlantic entrance to the Canal.

Panama (Balboa) tide predictions for the remainder of November and for December, are given below:

Tide Predictions.  
NOVEMBER.

DATE.	Time and height of high and low water.		
Wed., Nov. 17.....	0:07	6:16	12:43
Thurs., Nov. 18.....	12:9	3:0	12:1
Fri., Nov. 19.....	1:08	7:14	13:42
Sat., Nov. 20.....	13:2	2:5	12:6
Sun., Nov. 21.....	1:58	8:03	14:30
Mon., Nov. 22.....	13:5	2:0	13:1
Tues., Nov. 23.....	2:40	8:47	15:11
Wed., Nov. 24.....	13:9	1:5	13:5
Thurs., Nov. 25.....	3:18	9:26	15:48
Fri., Nov. 26.....	14:1	1:1	13:7
Sat., Nov. 27.....	3:54	10:05	16:24
Sun., Nov. 28.....	14:2	0:9	13:9
Mon., Nov. 29.....	4:28	10:42	16:58
Tues., Nov. 30.....	14:2	0:9	13:8
Wed., Nov. 1.....	5:02	11:20	17:32
Thurs., Nov. 2.....	14:1	1:0	13:7
Fri., Nov. 3.....	5:36	11:59	18:08
Sat., Nov. 4.....	13:8	1:4	13:4
Sun., Nov. 5.....	0:18	6:12	12:38
Mon., Nov. 6.....	13:4	1:3	13:0
Tues., Nov. 7.....	0:58	6:49	13:19
Wed., Nov. 8.....	3:2	12:9	2:3
Thurs., Nov. 9.....	1:44	7:30	14:04
Fri., Nov. 10.....	3:6	8:2	14:24
Sat., Nov. 11.....	2:02	8:17	14:52
Sun., Nov. 12.....	3:9	11:8	3:3
Mon., Nov. 13.....	3:28	9:15	15:46
Tues., Nov. 14.....	4:0	11:5	3:5

## DECEMBER.

DATE.	Time and height of high and low water.		
Wed., Dec. 1.....	4:26	10:19	16:44
Thurs., Dec. 2.....	3:7	11:5	3:5
Fri., Dec. 3.....	5:25	11:27	17:41
Sat., Dec. 4.....	3:1	11:8	3:2
Sun., Dec. 5.....	6:23	12:30	18:30
Mon., Dec. 6.....	2:3	12:5	2:6
Tues., Dec. 7.....	0:49	7:16	13:26
Wed., Dec. 8.....	14:1	1:3	13:4
Thurs., Dec. 9.....	1:42	8:07	15:20
Fri., Dec. 10.....	15:0	0:2	14:4
Sat., Dec. 11.....	2:33	8:57	15:10
Sun., Dec. 12.....	15:8	-0:7	15:3
Mon., Dec. 13.....	3:20	9:46	15:59
Tues., Dec. 14.....	16:5	-1:4	15:9
Wed., Dec. 15.....	4:12	10:36	16:48
Thurs., Dec. 16.....	16:8	-1:7	16:2
Fri., Dec. 17.....	11:24	17:37	23:48
Sat., Dec. 18.....	16:7	-1:6	16:2
Sun., Dec. 19.....	5:51	12:14	18:28
Mon., Dec. 20.....	16:2	-1:1	15:8
Tues., Dec. 21.....	0:43	7:43	15:04
Wed., Dec. 22.....	0:5	15:4	-0:3
Thurs., Dec. 23.....	1:34	7:37	13:56
Fri., Dec. 24.....	1:2	14:4	0:7
Sat., Dec. 25.....	2:31	8:35	14:52
Sun., Dec. 26.....	2:0	13:3	1:8
Mon., Dec. 27.....	3:32	9:40	15:52
Tues., Dec. 28.....	2:7	12:3	2:8
Wed., Dec. 29.....	4:44	10:52	16:53
Thurs., Dec. 30.....	3:1	11:7	3:5
Fri., Dec. 31.....	5:39	12:05	17:57
Sat., Dec. 1.....	3:3	11:5	3:9
Sun., Dec. 2.....	6:38	13:11	18:55
Mon., Dec. 3.....	12:4	3:2	11:7

DATE.	Time and height of high and low water.			
Sat., Dec. 18.....	1:23	7:32	14:05	19:51
Sun., Dec. 19.....	12:6	2:8	12:1	3:7
Mon., Dec. 20.....	2:12	8:21	14:51	20:37
Tues., Dec. 21.....	12:8	1:4	12:5	3:4
Wed., Dec. 22.....	2:55	9:03	15:31	21:20
Thurs., Dec. 23.....	13:2	2:0	12:9	3:0
Fri., Dec. 24.....	3:43	9:45	16:07	22:01
Sat., Dec. 25.....	13:5	1:5	13:3	2:6
Sun., Dec. 26.....	4:09	10:24	16:47	22:40
Mon., Dec. 27.....	13:8	1:2	13:6	2:4
Tues., Dec. 28.....	4:45	11:02	17:17	23:19
Wed., Dec. 29.....	13:0	1:0	13:8	2:3
Thurs., Dec. 30.....	5:12	11:39	17:52	23:57
Fri., Dec. 31.....	13:9	1:0	13:9	2:3
Sat., Dec. 1.....	5:55	12:17	18:26	24:36
Sun., Dec. 2.....	13:8	1:2	13:9	2:4
Mon., Dec. 3.....	0:37	6:30	12:54	19:00
Tues., Dec. 4.....	2:4	13:5	1:5	13:8
Wed., Dec. 5.....	1:18	7:07	13:33	19:37
Thurs., Dec. 6.....	2:5	13:2	1:9	13:6
Fri., Dec. 7.....	2:01	7:49	14:15	20:16
Sat., Dec. 8.....	2:7	12:8	2:3	13:5
Sun., Dec. 9.....	2:49	8:35	15:03	21:04
Mon., Dec. 10.....	2:8	14:1	3:1	13:3
Tues., Dec. 11.....	3:42	9:31	15:56	21:59
Wed., Dec. 12.....	2:9	12:1	3:1	13:3
Thurs., Dec. 13.....	4:40	10:36	16:56	23:02
Fri., Dec. 14.....	2:7	12:1	3:2	13:4

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic survey charts for this region, and which is 8.0 feet below mean sealevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 04 (midnight) to 24 (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance: 15:47 is 3:47 p. m.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, November 13, 1915:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun	Miraflores	Colon
Sun., Nov. 7.....	127.00	93.30	85.03	85.06	54.14
Mon., Nov. 8.....	127.00	93.35	85.08	85.04	54.31
Tues., Nov. 9.....	129.20	93.85	85.15	85.11	54.34
Wed., Nov. 10.....	131.80	96.80	85.03	85.04	54.27
Thurs., Nov. 11.....	127.50	91.80	85.00	85.15	54.18
Fri., Nov. 12.....	129.95	95.25	85.18	85.09	54.06
Sat., Nov. 13.....	129.30	95.10	85.39	85.36	54.16

Heights of low water to nearest foot..... 125.0 91.0

## Rainfall from November 1 to 13, 1915, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>			
Balboa.....	1.80	6	11.82
Balboa Heights.....	.41	6	1.65
Miraflores.....	.63	8	2.14
Pedro Miguel.....	.99	8	2.35
Rio Grande.....	1.44	8	3.05
<i>Central Section—</i>			
*Culebra.....	3.03	8	6.66
*Camacho.....	2.03	8	6.56
Empire.....	1.48	8	4.82
Gatun.....	1.48	9	3.98
*Juan Mina.....	1.53	2	5.79
Alhajuela.....	1.32	9	5.13
*Vigia.....	2.29	1	4.55
*Frío.....	2.53	9	10.51
*Monte Lirio.....	2.20	9	11.54
<i>Atlantic Section—</i>			
Gatun.....	2.27	9	7.14
*Braros Brook.....	2.34	8	7.50
Colon.....	1.45	7 & 13	8.78

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., November 14, 1915.)

There were no vessels entering the Canal during the week, for transit.

## PORT OF CRISTOBAL

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	To
Nov. 9	Magdalena	Royal Mail S. P. Co.	London.	Nov. 11	Magdalena	Royal Mail S. P. Co.	London.
Nov. 9	Manuel Colpo	Spanish Line	Barcelona.	Nov. 12	Manuel Colpo	Spanish Line	Barcelona.
Nov. 12	General Hubbard	Hubbard S. S. Co.	Trinidad.	Nov. 15	General Hubbard	Hubbard S. S. Co.	New York.
Nov. 12	Thai	Johnson Line	Christiania.				
Nov. 14	Venezuela	French Line	St. Nazaire.				
*EXPECTED ARRIVALS.				*EXPECTED DEPARTURES.			
Nov. 20	Covina	Elders & Fyffes.	Limón.	Nov. 19	Venezuela	French Line	St. Nazaire.
					Jacob Luckenbach	Luckenbach Line	Unknown.
					Lewis Luckenbach	Luckenbach Line	Unknown.
				Nov. 20	Covina	Elders & Fyffes	Bristol.

\*Other than United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	To
Nov. 12	Bayo Maru	Nippon Shosen Kaisha	Papeete, Tahiti.	Nov. 8	Guatemala	Pacific Steam Nav. Co.	Valparaiso.
				Nov. 9	Isabela	N. Y. & Porto Rican Line	Tocoilla.
				Nov. 9	Anjo Maru	Toyo Kisen Kaisha	Valparaiso.
				Nov. 9	Jamaica	Pacific Steam Nav. Co.	Tumaco.
				Nov. 9	O. M. Clark	C. H. Higgins Co.	San Francisco.
				Nov. 11	Shimosa	N. Y. & Oriental S. S. Co.	Coronel.
				Nov. 14	Cauca	Pacific Steam Nav. Co.	Guayaquil.
				Nov. 14	City of Porto	Pacific Mail S. S. Co.	San Francisco.

\*Including vessels arriving for transit through the Canal.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	To
					San Jose	Pacific Mail S. S. Co.	San Francisco.
					Huasco	South American S. S. Co.	Valparaiso.
					Hualaga	Peruvian Line	Callao.
					Salvador	Salvador R. R. Co.	San Francisco.
					Carolyn	Luckenbach Line	San Francisco.
					Horry Luckenbach	Luckenbach Line	San Francisco.

## Fuel.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price per barrel is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

## Misdirected Letters.

BALBOA HEIGHTS, November 17, 1915.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon application of the addressees:

Austin, Mrs. C. C. Kirmes, Elena  
Barbough, F. \*Kline, Robert  
Bolin, Henry D. Koughan, Chas. F.  
\*Clark, Paul H. Louis, C. J.  
Clutter, Jackson T. Locken, T. T.  
Davis, A. D. Leigh, Mrs. Mary  
Fichtner, A. Gus. McCall, Geo. L.  
Gaudian, W. F. McCarthy, David  
Grooner, John A. \*Penny, Jodie  
Healey, Edward A. Peterson, Atthor  
\*Harburger Florence C. \*Sherrill, C. O.  
Hartman, Mrs. Harry Sianskey, Pvt. Frank  
True, Guy W.  
Hill, Christian Williams, Robt. C.

\*Paper, \*Card.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the Advance the voyage requires seven days.

Every Monday to New York, for all States except Louisiana, Mississippi, Arkansas, and Texas. Due at New York the following Monday.\*

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*NOTE—The sailings on Monday, December 13 and January 10, will not land mail in New York until Tuesday of the following week; hence, despatches on those dates will be only for the following States: New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia, North Carolina, South Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, North Dakota, South Dakota, Iowa, Minnesota, Montana, Wyoming, Idaho, Washington, Oregon, and northern California. Despatches to States not listed above will be made on the Sunday boat to New Orleans. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Sails	Arrives
Zacapa	U. F. C. Nov.	10	Nov. 17
Allianca	P. R. R. Dec.	11	Nov. 17
Calamares	U. F. C. Nov.	13	Nov. 21
Carrillo	U. F. C. Nov.	17	Nov. 24
Colon	P. R. R. Nov.	18	Nov. 24
Tenadores	U. F. C. Nov.	20	Nov. 28
Santa Marta	U. F. C. Nov.	24	Dec. 1
Advance	P. R. R. Nov.	26	Dec. 3
Metapan	U. F. C. Nov.	27	Dec. 6
Almirante	U. F. C. Dec.	1	Dec. 8
Panama	P. R. R. Dec.	2	Dec. 8
Pastores	U. F. C. Dec.	4	Dec. 12
Zacapa	U. F. C. Dec.	8	Dec. 15
Allianca	P. R. R. Dec.	9	Dec. 15
Calamares	U. F. C. Dec.	11	Dec. 19
Carrillo	U. F. C. Dec.	15	Dec. 22
Colon	P. R. R. Dec.	16	Dec. 22
Tenadores	U. F. C. Dec.	18	Dec. 26
Santa Marta	U. F. C. Dec.	22	Dec. 29
Advance	P. R. R. Dec.	23	Dec. 30
Metapan	U. F. C. Dec.	25	Jan. 3

## CRISTOBAL-COLON TO NEW YORK.

Almirante	U. F. C. Nov.	18	Nov. 25
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Panama	P. R. R. Nov.	18	Nov. 24
Pastores	U. F. C. Nov.	22	Nov. 29
Allianca	P. R. R. Nov.	25	Dec. 1
Zacapa	U. F. C. Nov.	25	Dec. 2
Calamares	U. F. C. Nov.	29	Dec. 6
Colon	P. R. R. Dec.	2	Dec. 8
Carrillo	U. F. C. Dec.	2	Dec. 9
Tenadores	U. F. C. Dec.	6	Dec. 13
Santa Marta	U. F. C. Dec.	9	Dec. 16
Advance	P. R. R. Dec.	9	Dec. 16
Metapan	U. F. C. Dec.	13	Dec. 21
Panama	P. R. R. Dec.	16	Dec. 22
Almirante	U. F. C. Dec.	16	Dec. 23
Pastores	U. F. C. Dec.	20	Dec. 28
Allianca	P. R. R. Dec.	23	Dec. 29
Zacapa	U. F. C. Dec.	23	Dec. 30
Calamares	U. F. C. Dec.	27	Jan. 4

## NEW ORLEANS TO CRISTOBAL-COLON.

Atenas	U. F. C. Nov.	13	Nov. 20
Parissina	U. F. C. Nov.	17	Nov. 22
Turrialba	U. F. C. Nov.	20	Nov. 27
Cartago	U. F. C. Nov.	24	Nov. 29
Abangarez	U. F. C. Dec.	27	Dec. 4
Heredia	U. F. C. Dec.	1	Dec. 6
Atenas	U. F. C. Dec.	4	Dec. 11
Parissina	U. F. C. Dec.	8	Dec. 13
Turrialba	U. F. C. Dec.	11	Dec. 18
Cartago	U. F. C. Dec.	15	Dec. 20
Abangarez	U. F. C. Dec.	18	Dec. 25
Heredia	U. F. C. Dec.	22	Dec. 27
Atenas	U. F. C. Dec.	25	Jan. 1
Parissina	U. F. C. Dec.	29	Jan. 3
Turrialba	U. F. C. Jan.	1	Jan. 8

## CRISTOBAL-COLON TO NEW ORLEANS.

Heredia	U. F. C. Nov.	21	Nov. 26
Atenas	U. F. C. Nov.	22	Nov. 29
Parissina	U. F. C. Nov.	28	Dec. 3
Turrialba	U. F. C. Nov.	29	Dec. 6
Cartago	U. F. C. Dec.	5	Dec. 10
Abangarez	U. F. C. Dec.	6	Dec. 13
Heredia	U. F. C. Dec.	12	Dec. 17
Atenas	U. F. C. Dec.	13	Dec. 20
Parissina	U. F. C. Dec.	19	Dec. 24
Turrialba	U. F. C. Dec.	20	Dec. 27
Cartago	U. F. C. Dec.	26	Dec. 31
Abangarez	U. F. C. Dec.	27	Jan. 3
Heredia	U. F. C. Jan.	2	Jan. 7
Atenas	U. F. C. Jan.	3	Jan. 10

# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, NOVEMBER 24, 1915. No. 14.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds, and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,  
**THE CANAL RECORD,**  
Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Ships Waiting for Transit.

The 83 ships held up at the Canal by the obstruction of traffic in the latter part of September have been reduced to nine on the Pacific side and one on the Atlantic side, not including the ships of the Luckenbach Line which come and go in the maintenance of a regular service, transshipping cargo by means of the Panama Railroad. The ships on the Pacific side on Tuesday, November 23, were the yacht *Sultana*, the training ship *Newport*, the dredge *San Diego*, and the commercial vessels *Admiral*, *Grahamland*, *Navajo*, *Edison Light*, *Newton*, and *Lady Carrington*. The vessel held up on the Atlantic side is the *Acajulla*, lying in the anchorage basin in Gatun Lake, near the locks. The *Thai* sailed for Rio Janeiro on November 22.

### The Slide Situation.

In the excavation of material from the bases of the Culebra slides, the ladder dredge *Corozal* is working on the south side of the barrier across the Canal, with pipeline suction dredge No. 86 handling material to the southward, and the dipper dredges *Gamboa*, *Cascadas*, and *Paraiso* are situated, in the order named, to the north of the point of worst obstruction. Pipeline suction dredge No. 85 is pumping water to sluice down material so it can be handled to greater advantage, and two barges are being fitted with pumps for the same work. Two pumps will be installed on one of the barges, and one on the other. Two of the pumps were formerly used in the sluicing service south of Miraflores and in connection with the Gold Hill sluicing operations, and one was in service at the Agua Clara

reservoir. They will be operated by electricity, and a power line is being run from the relay station south of Contractor's Hill.

Excavation from the bases of the Culebra slides during the week ending at 6 a. m., Tuesday, November 23, amounted to 246,340 cubic yards. Other excavation from the Cut during the same period amounted to 57,510 cubic yards, making a total for the week of 303,850 cubic yards.

Excavation on Monday, November 22, amounted to 48,622 cubic yards for the 24-hour day. This sets a new high record for a day's excavation in the Cut.

The excavations by the several dredges on the record day and during the week ending at 6 a. m., Tuesday, November 23, were as follows:

Dredge.	Type.	Yardage.	
		Day.	Week.
<i>Cascadas</i> ...	15-yard dipper..	12,445	83,205
<i>Gamboa</i> ...	15-yard dipper..	11,175	73,040
<i>Paraiso</i> ...	15-yard dipper..	10,660	50,675
<i>Corozal</i> ...	Ladder.....	6,005	33,430
No. 86....	Pipeline suction.	5,100	34,120
<i>Culebra</i> ...	Seagoing suction	3,237	23,390
<i>Mormon</i> ...	Belgian ladder..		5,990

The total excavations for the preceding four weeks were 239,885; 254,286; 256,262; and 294,698 cubic yards, respectively.

### Luckenbach Service via the Isthmus.

The Luckenbach Line is maintaining almost its usual service between the Atlantic and Pacific coasts of the United States in spite of the closing of the Canal. Its vessels transfer cargo across the Isthmus by means of the Panama Railroad, and when traffic seems liable to become congested one or two ships are diverted to the Magellan route.

Three of the line's ships are now at Cristobal and two are at Balboa. The *Carolyn* left Balboa on November 18 to take a cargo of nitrates to New York, via Magellan, and the *Florence Luckenbach* will leave New York on November 27 for San Francisco by way of the long route.

The Luckenbach ships now plying on the Atlantic side are the *Jacob Luckenbach*, *Florence Luckenbach*, *Lewis Luckenbach*, *J. L. Luckenbach*, and *Frederick Luckenbach*.

Those on the Pacific at present are the *Harry Luckenbach*, *Ilattie Luckenbach*, *Pleades*, *Edith*, and *Carolyn*.

### Concrete Blocks Used on West Breakwater.

The hauling of concrete blocks from Gamboa to Coco Solo for use in repairing the armor of the West Breakwater was begun last week. The manufacture of the blocks at Gamboa began on October 9, and only those which are at least 25 days old are selected from the stock pile for transportation to the breakwaters. The blocks which have been delivered at Coco Solo up to the present have been unloaded there onto barges and hauled across the bay for placement on the

West Breakwater, as a part of the maintenance work. Thirty-two of the blocks are considered a barge-load, and two are a load for a 50-ton steel flat car.

### Stocking Cristobal Plant with Coal.

In preparation for placing the permanent coaling plant at Cristobal in service about the first of the coming year, coal is being hauled by rail from the present coal hoist at the Mount Hope dry dock and dumped into some of the storage spaces to stock them for use.

### Sailing of the "Cristobal."

The date of sailing of the *Cristobal* of the Panama Railroad Steamship Line from Cristobal to New York was deferred on account of cargo operations, and is now set for Tuesday, November 30.

### Corozal School Closed.

The school at Corozal, conducting first, second, and third grade work for white children, was closed on Friday of last week, following the completion of the removal of the civilian population from the village, to make way for the Army forces to be stationed there. The few Army children of school age in the town have been transferred to the Balboa school.

### Decorative Lily Pond at Darien Radio Station.

A little cove at Darien, formed by the water of Gatun Lake in the hollow between two of the hills on which the radio station is situated, is being planted with water lilies as a part of the horticultural improvement of the reservation. Four exotic varieties have already been established in the lagoon, and about 12 others are under order. Those which have been set out include plants with blue, red, and white flowers. Among the other varieties which have been ordered are the *Victoria regia*, the lily so liberally noted in geographies under the sections treating of tropical flora by reason of its huge leaf, which, floating on the water, can support the weight of a child; and the lotus, the plant made famous by its reputed Lethean qualities in the Homeric legend of the visit of Ulysses to the Lotophagi. The horticulturist states that, as far as he knows, neither of these plants is now extant in Central America.

A dike across the mouth of the cove with its top a few inches below the surface of the lake protects the lilies against an influx of weeds. The small fish which are in the cove prevent mosquito breeding by destroying the larvæ, and are protected by the dike against the voracity of the larger lake fish.

Other decorations on the reservation include the planting of rows of hibiscus and oranges along the paths. On the slope opposite the railroad station red-leaved alternanthera have been used for a lawn sign, "Darien Radio Station—United States Navy."

## CANAL TRAFFIC IN SEPTEMBER.

Sharp Drop on Account of Closing of Canal.—  
Analysis of Movements.

Traffic through the Canal in September was considerably less than in the months immediately preceding. This was on account of the closing of the Canal to traffic shortly after the middle of the month. The last vessels which completed the transit of the Canal from the Atlantic entered the Canal on September 15, and the last which passed through from the Pacific entered on September 17. The Canal was in use approximately 55 per cent of the month.

The drop in traffic was such that the month's handling of cargo was less than that for any of the preceding six months. The business was less than in any month since February, 1915; but it exceeded the business in any of the months prior to March. The number of ships passing through the Canal in September, 100, was the same as the number in December, 1914, but exceeded the number during every other month up to March, 1915.

The ships going from the Atlantic to the Pacific in September numbered 49 and carried 181,380 tons of cargo. Those going from the Pacific to the Atlantic numbered 51 and carried 274,937 tons of cargo. The aggregate of cargo passing through the Canal during the month was 456,317 tons.

A comparison of the Canal traffic during September with the movements during preceding months is afforded by this tabulation of the business since the opening of the Canal to commercial traffic, on August 15, 1914:

Month.	Atlantic-Pacific		Pacific-Atlantic		Total.	
	Ves-	Cargo	Ves-	Cargo	Ves-	Cargo
	sels	tons.	sels	tons.	sels	tons.
August...	13	49,106	11	62,178	24	111,284
Sept. ....	27	141,762	30	180,276	57	322,038
Oct. ....	44	168,069	40	253,288	84	421,357
Nov. ....	54	206,510	38	242,291	92	448,801
Dec. ....	43	179,235	57	271,216	100	450,454
Jan. 1915	44	168,682	54	240,925	98	449,607
Feb. ....	39	150,987	53	270,078	92	427,065
March....	57	217,447	80	417,610	137	635,057
April....	59	237,384	60	285,457	119	522,841
May....	67	246,534	75	332,174	142	578,708
June....	83	320,619	60	282,561	143	603,180
July....	93	316,773	77	388,696	170	705,469
August...	89	298,119	72	358,118	161	656,237
Sept....	49	181,380	51	274,937	100	456,317
Total....	761	2,873,007	758	3,933,908	1519	6,706,915

As distributed among the great routes over which the Canal traffic has been moving, the traffic in September was as follows:

ATLANTIC TO PACIFIC.				
	Ves-	Net	Tons	Tons
	sels	Tonnage		Cargo
United States coastwise.....	10	39,923	42,357	
Europe to west coast of North America.....	4	14,149	9,460	
Europe to South and Central America.....	.....	.....	.....	
United States to South and Central America.....	6	21,192	36,327	
United States to Australia and the Far East.....	12	49,632	88,534	
Atlantic terminus to South and Central America.....	5	7,560	4,702	
Miscellaneous routings.....	1	3,122	.....	
Vessels in ballast.....	11	31,173	.....	
Total.....	49	166,751	181,380	
PACIFIC TO ATLANTIC.				
United States coastwise.....	10	38,600	49,251	
West coast of North America to Europe.....	9	32,517	50,687	
Central and South America to Europe.....	9	31,309	46,474	
South and Central America to United States.....	9	31,727	60,128	
Australia and the Far East to the United States.....	6	24,971	40,921	
South and Central America to Atlantic terminus.....	2	9,798	17,673	
Miscellaneous routings.....	2	9,697	9,803	
Vessels in ballast.....	.....	.....	.....	
Total.....	51	178,619	274,937	

## Commodities Shipped through the Panama Canal in September, 1915.

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Agricultural implements.....	317	.....	317	New York to New Zealand and San Francisco.
Alfalfa meal.....	.....	100	100	San Francisco to New York.
Animal food.....	13	.....	13	New York to San Francisco.
Antimony ore.....	.....	590	590	Antofagasta to Europe; Los Angeles to New York.
Apricot kernels.....	.....	52	52	San Francisco to New York.
Asphalt.....	5	54	59	New York to New Zealand; San Francisco to London.
Automobiles.....	.....	1	1	Los Angeles to New York.
Baking powder.....	16	.....	16	New York to Seattle.
Bark.....	150	20	170	New York to San Francisco; San Francisco to London.
Barley.....	.....	7,898	7,898	See comment.
Bath tubs.....	49	.....	49	New York to San Francisco and Los Angeles.
Beans.....	.....	1,469	1,469	San Francisco to Philadelphia, New York, and Sweden.
Beans, lima.....	.....	357	357	San Francisco to New York.
Beer.....	16	.....	16	New York to San Francisco and Los Angeles.
Benzine.....	.....	3,896	3,896	Talara to London.
Borate of lime.....	.....	390	390	Antofagasta to London.
Borax.....	60	.....	60	New York to Seattle.
Burial.....	.....	93	93	San Francisco to New York.
Cable.....	.....	6	6	San Francisco to New York.
Cacao.....	41	1,589	1,630	New York to San Francisco and Seattle; Ecuador to Cristobal and Colon.
Canned goods, miscellaneous.....	204	900	1,104	New York to Sydney; Norway to San Francisco; Astoria to New York.
Canned goods: Fish.....	606	2,485	3,091	New York and Norway to north Pacific ports and Australia; Australia and north Pacific ports to New York and London.
Fruit.....	720	2,881	3,601	New York to San Francisco, Los Angeles, and Brisbane; Honolulu and San Francisco to New York, Philadelphia, and Europe.
Meat.....	353	.....	353	New York to Auckland.
Vegetables.....	234	324	558	San Francisco to New York; New York to San Francisco and New Zealand.
Carpet.....	20	.....	20	New York to San Francisco and Los Angeles.
Cement.....	143	.....	143	New York to Ecuador, San Francisco, and New Zealand.
Cereals, miscellaneous.....	155	280	435	New York to Los Angeles; Los Angeles to New York.
Chalk.....	101	.....	101	Sweden to San Francisco.
Chemicals.....	723	4	727	New York and Denmark to north Pacific ports, Kobe, and Valparaiso; San Francisco to New York.
Chrome ore.....	.....	7,220	7,220	Tahiti to New York.
Coal.....	27,966	.....	27,966	See comment.
Coffee.....	1,533	86	1,619	Gutenberg to San Francisco; Colombia to Colon.
Coke.....	7,445	.....	7,445	See comment.
Copper.....	.....	2,120	2,120	North and south Pacific ports and Japan to New York, Liverpool, and London.
Copper ore.....	.....	2,018	2,018	North and south Pacific ports to New York, Liverpool, and Colon.
Copra.....	.....	450	450	Singapore and Manila to New York.
Cotton.....	746	3,340	4,086	New York to California and Vladivostok; south Pacific ports and San Francisco to New York and Europe.
Curios.....	.....	100	100	Kobe to Boston and New York.
Earthenware.....	14	.....	14	New York to San Francisco.
Electrical supplies.....	96	.....	96	New York to San Francisco and Los Angeles.
Explosives.....	50	.....	50	New York to New Zealand.
Fertilizer.....	.....	456	456	San Francisco to New York.
Flint stones.....	509	.....	509	Copenhagen to San Francisco.
Flour.....	307	460	667	New York to San Francisco; north Pacific ports to New York and Europe.
Fruit, dried.....	25	1,286	1,311	New York to San Francisco; San Francisco and Los Angeles to New York and Liverpool.
Fruit, fresh.....	.....	110	110	San Francisco to New York.
General cargo.....	38,249	27,583	65,832	New York to San Francisco.
Glassware.....	51	.....	51	See comment.
Glycerine.....	184	.....	184	New York to San Francisco.
Goose feathers.....	39	30	69	New York to San Francisco.
Grease.....	.....	30	30	New York to San Francisco and Los Angeles; San Francisco to New York.
Hair, cattle.....	.....	25	25	San Francisco to New York.
Hemp.....	1,525	.....	1,525	Orient to New York.
Honey.....	.....	89	89	North and south Pacific ports to New York and Europe.
Horns and hoofs.....	.....	26	26	San Francisco to New York.
Iodine.....	.....	2	2	Guanayaca to Cristobal.
Iron.....	57	.....	57	Valparaiso to Liverpool.
Iron ore.....	.....	17,350	17,350	Gutenberg to San Francisco.
Ivory nuts.....	.....	1,215	1,215	Cruz Grande to Philadelphia.
Kapok.....	.....	18	18	Ecuador to Colon and Cristobal.
Lead.....	.....	449	449	San Francisco to New York.
Liquors.....	418	.....	418	Callao and San Francisco to Newport News and Philadelphia.
Lumber.....	70	17,401	17,471	New York to San Francisco and Los Angeles; Copenhagen to Shanghai.
Malt.....	16	.....	16	See comment.
Manganese.....	.....	100	100	New York to San Francisco.
Manufactured goods.....	2,908	20	2,928	San Pedro to New York.
Machinery.....	.....	.....	.....	New York and Europe to China, New Zealand, and Vladivostok; San Francisco to New York.



Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Iron and steel.....	13,448		13,448	See comment.
Railroad material.....	24,235		24,235	See comment.
Miscellaneous.....	5	515	520	New York to San Francisco; Ecuador and San Francisco to Cristobal and New York.
Musical instruments.....	33		33	New York to San Francisco.
Nails, wire.....	99		99	Christiana to Japan; New York to San Francisco.
Nitrates.....	60	101,994	102,054	See comment.
Oats.....	2,971	2,300	5,271	Talcahuano to Newport News (orders).
Oil, crude.....	322		322	New York to California and Australia.
Oil, lubricating.....	171	1,750	1,921	New York to San Francisco.
Oils, vegetable.....	27		34	New York to north Pacific ports; Orient to New York.
Paint.....	1,753		1,753	New York to San Francisco; San Francisco to New York.
Paper.....	183		183	New York and Sweden to San Francisco.
Paperware.....	147		147	New York to San Francisco.
Pencil wood.....	39,848	2,006	41,854	San Francisco to Philadelphia and New York.
Petroleum, refined.....	10		10	See comment.
Phosphates.....	762		762	Port Pirie to Boston.
Pipes, iron.....	26		26	New York to north Pacific ports.
Polish, metal.....	22		22	New York to Seattle.
Preserves.....	1,476	100	1,576	New York to San Francisco.
Pulp.....	60		60	Copenhagen to San Francisco; San Francisco to New York.
Rags.....	36		36	San Francisco to New York and Philadelphia.
Resin.....	360		360	New York to San Francisco.
Rice.....	40		40	San Francisco to New York.
Rope.....	40		40	New York to San Francisco.
Rubber.....	2,047		2,037	New York to San Francisco; south Pacific ports and Orient to New York.
Rubber, old.....	220		220	Cristobal, Colon.
Salt.....	10		10	North Pacific ports to New York.
Scrap metal.....	250	420	670	New York to Los Angeles.
Seed.....	16	152	168	New York to San Francisco; Chile, San Francisco, and Honolulu to New York.
Silver.....	10		10	New York to San Francisco; North and south Pacific ports to New York, Cristobal, and Europe.
Skins and hides.....	332		332	Arica and Mollendo to Colon and New York.
Soap.....	615		615	North and south Pacific ports and Australia to Cristobal, New York, and Europe.
Starch.....	34		34	New York to San Francisco and Seattle.
Sugar.....	32,702		32,702	New York to San Francisco.
Syrup.....	25		25	See comment.
Tea.....	133		133	New York to San Francisco and New Zealand.
Textiles.....	20		20	New York to San Francisco and Los Angeles.
Tin.....	2,893		2,893	New York to New Zealand.
Tin ore.....	507		507	South Pacific ports and Orient to New York and Europe.
Tin plates.....	489		489	Valparaiso to Liverpool.
Tobacco.....	587		587	New York to north Pacific ports and New Zealand.
Wax.....	142	18	160	New York to north Pacific ports and Australia.
Wheat.....	5,250		5,250	Chile and San Francisco to New York and Newport News; New York to Seattle, San Francisco, and Chile.
Wines.....	2,445		2,567	Portland to England.
Wire.....	2,114		2,114	New York to California; California to New York.
Wire fencing.....	6,600		6,600	New York to California, New Zealand, and Vladivostok.
Wood, hard.....	300		300	New York to Vladivostok.
Wool.....	1,797		1,797	Seattle to Copenhagen.
Zinc.....	16	15	31	South and north Pacific ports and Australia to New York, Boston, Philadelphia, and Liverpool.
Zinc concentrates.....	9,444		9,444	New York to San Francisco; San Francisco and South America to New York and Liverpool.
Totals.....	181,380	274,937	456,317	Port Pirie to Texas and Bath.

One hundred and nineteen commodities; 27 commodities going in both directions.

The vessel on miscellaneous routing from the Atlantic was the *Ellerslie*, carrying an undeclared quantity of coal from Kingston to Vancouver. The two ships on miscellaneous routings from the Pacific were the *Grena* and the *Chincha*, carrying nitrates from Talca to Montreal. The *Grena* had a cargo of 10,800 tons, and the *Chincha* carried 8,803 tons.

The September movement brings the grand total of cargo carried through the Canal to 6,706,915 tons.

To October 1, 1915, the Canal had been in operation 133 months. The movement of 6,706,915 tons of cargo through it in that period was at the average rate of 496,808.5 tons per month. This is equivalent to 16,318.5 a day, or 5,956,262.7 tons a year.

With respect to nationality, the British vessels were almost one-half of all, numbering 49 of the total of 100. The American ships numbered 25. Next in number were the Norwegian, seven; and the others, in order, were Danish, four; Dutch, four; Swedish, three; Chilean, Japanese, and Peruvian, two each; Honduran and Panamanian, one each.

## TOLLS.

The tolls collected on vessels passing through the Canal in September amounted to \$348,730.30. Collection of tolls was not made from the vessels which, after entering the Canal, turned back on account of the slides; in such cases the item of tolls was struck off the bill. The tolls earned by months since the opening of the Canal to commercial traffic are shown herewith:

Month.	Tolls earned.
August 15-31, 1914.....	\$88,401.80
September.....	265,600.80
October.....	366,786.48
November.....	369,161.28
December.....	407,914.80
January, 1915.....	398,691.12
February.....	333,904.96
March.....	531,092.56
April.....	432,418.49
May.....	452,550
June.....	522,676.95
July.....	573,365.67
August.....	496,792.03
September.....	348,730.30
Total.....	5,754,673.29

## PRINCIPAL COMMODITIES.

A tabulation of the quantities of various items handled through the Canal in the month is presented herewith. It is based on the declarations of cargo and of its destination made by the masters of the vessels. The declarations listed 119 different commodities, of which 27 were carried through the Canal in both directions.

The items of cargo handled through the Canal in largest quantity in September were barley, chrome ore, coal, coke, iron ore, lumber, manufactured goods of iron and steel, railroad material, nitrates of soda, refined

## SUMMARY OF TRAFFIC THROUGH THE PANAMA CANAL SINCE ITS OPENING TO COMMERCIAL TRAFFIC.

Month.	Atlantic to Pacific				Pacific to Atlantic.				Total.			
	Canal tons			Cargo tons	Canal tons			Cargo tons	Cargo tons.			Cargo tons
	Vessels	Gross	Net		Vessels	Gross	Net		Vessels	Gross	Net	
August, 1914.....	13	58,233	41,931	49,106	11	62,049	44,047	62,178	24	120,282	85,978	111,284
September.....	27	151,878	109,684	141,762	30	151,368	111,375	180,276	57	303,246	221,059	322,058
October.....	44	240,925	174,472	168,069	40	220,179	153,744	253,288	84	461,104	328,216	421,357
November.....	54	247,479	172,825	206,510	38	205,071	149,906	242,291	92	452,550	322,731	448,801
December.....	43	204,776	145,676	179,255	57	280,896	198,618	271,219	100	485,672	344,294	450,454
January, 1915.....	44	239,486	169,228	208,062	54	251,085	177,994	240,925	98	497,569	349,212	449,807
February.....	38	209,832	147,339	150,987	53	245,522	175,523	276,078	92	455,444	322,862	427,065
March.....	57	269,901	187,368	217,447	80	405,380	288,416	417,610	137	675,281	478,984	635,057
April.....	59	279,159	199,213	237,384	60	290,738	205,326	285,457	119	569,877	404,539	522,841
May.....	67	343,701	249,098	246,534	75	360,104	252,252	332,174	142	703,805	492,359	578,708
June.....	83	412,525	296,694	320,619	60	286,330	201,116	282,561	143	698,835	497,810	603,180
July.....	93	465,726	297,329	316,773	77	356,145	250,041	388,696	170	812,871	547,370	705,469
August.....	89	416,363	288,194	249,119	72	353,298	236,857	326,218	161	769,761	525,051	575,337
September.....	49	235,397	166,751	181,380	51	254,064	178,619	274,937	100	499,461	345,470	456,317
Totals.....	761	3,775,451	2,637,002	2,873,007	758	3,722,429	2,623,824	3,833,903	1,519	7,497,880	5,260,826	6,706,915

petroleum, sugar, wheat, zinc concentrates, and the miscellany of material classified as "general cargo."

Barley amounted to 7,898 tons, all shipped from the west coast of North America. One thousand and fourteen tons went from San Francisco to New York, and the remainder was shipped to England and Denmark.

Chromite ore amounting to 7,220 tons passed through the Canal on the way from Paggoumene, Tahiti, to New York.

Coal amounted to 27,966 tons, all shipped from Norfolk and Newport News. Five hundred and seventy tons went to San Francisco, and the remainder to ports on the west coast of South America, principally in northern Chile.

Coke amounting to 7,445 tons was shipped to Santa Rosalia, Mexico; 2,409 tons from Glasgow and 5,036 tons from Baltimore.

General cargo shipped from the Atlantic to the Pacific amounted to 38,249 tons. Of this, 16,849 tons were in the United States coastwise trade, 15 tons were shipped from Sweden to San Francisco, 5,042 tons were transhipped from Cristobal to South America, 587 tons were from New York direct to Guayaquil and Valparaiso, 250 tons were from New York for Vladivostok, 15,506 tons from Atlantic ports of the United States to New Zealand and Australia.

General cargo from the Pacific to the Atlantic amounted to 27,583 tons. Of this, 9,339 tons were in the United States coastwise trade, 761 tons were shipped direct from South America to Europe, 20 tons from Victoria to England, 100 tons from Manila and 300 tons from Yokohama to New York, 175 tons from Sydney to Boston, 2,622 tons from the west coast of South America to Cristobal, for transfer, and 14,266 tons from San Francisco and Portland to Great Britain.

Iron ore amounted to 17,350 tons. This was shipped in three vessels, the *Jungshoved*, *Lewisham*, and *Panama Transport*, from Cruz Grande to Philadelphia.

Lumber amounted to 17,471 tons. Of this, 70 tons were shipped from New York, 10 tons to Australia and 60 to San Diego; and 17,401 tons were shipped from Pacific ports, all from the United States and Canada. In the coastwise trade, 4,554 tons went to New York and 3,500 to Boston. Victoria shipped 6,600 tons to Kingston, Jamaica, and 2,347 tons to Liverpool.

Manufactured goods of iron and steel were shipped from the Atlantic to the Pacific to the extent of 13,448 tons. Of this, 5,223 tons were shipped from New York to Los Angeles, San Francisco, and Seattle, 2,700 tons went from New York to Vladivostok, 3,950 tons from New York to New Zealand, 75 tons from Sweden to San Francisco, and 1,500 tons from Glasgow to Los Angeles.

Railroad material, amounting to 24,235 tons, all came from New York and was distributed as follows: One thousand and fifty-three tons in the United States coastwise trade, to Los Angeles and San Francisco, 7,900 tons to the west coast of South America, and 15,282 tons to Vladivostok and Kobe.

Sixty tons of nitrates were shipped from Christiania to Yokohama, on the *Magdala*; 100 tons from San Francisco to New York, and 101,894 tons came from the west coast of South America, consigned to Europe and the United States. Of the shipments from South American fields, 19,603 tons were from Taltal for Montreal, 42,755 tons for the

United States, and 39,536 tons for Europe.

Shipments of refined petroleum during September amounted to 41,854 tons, of which 2,006 tons were from Talara for London, and 39,848 tons were from Atlantic ports of the United States for Australia, New Zealand, China, and Japan. Japan took 15,392 tons; New Zealand, 10,273 tons; China, 8,500 tons; and Australia, 5,683 tons.

Sugar, amounting to 32,702 tons, was all shipped from Pacific to Atlantic. Eleven thousand tons from the Philippine Islands were shipped to New York, and 3,000 tons from Iloilo to Boston; 121 tons were shipped from Talcahuano to Genoa, and 335 tons from Peru to Colon for transfer; and 17,146 tons came from the Hawaiian Islands and 1,100 tons from San Francisco for New York.

Wheat amounted to 5,250 tons, and was shipped from Portland to England.

Zinc concentrates amounted to 9,444 tons, and were shipped to the United States from Port Pirie, Australia.

#### May Buy Costa Rican Produce for Commissaries.

The local buyer for the commissary branch of the Supply Department, ordinarily stationed at Panama, is in Costa Rica at present, investigating the possibilities of obtaining fresh fruits and vegetables from that country. It is possible that a branch buying agency may be established at Limon, if the extent of production in the country warrants it, and there should be no better promise of development of produce in Panama.

One of the Costa Rican products which has been shipped to the commissary branch by the local buyer and placed on sale is palm "cabbage." This is said to be the first time this vegetable was ever sold in the Canal commissary stores.

#### Responsibility of Parents for Children's Conduct on Panama Railroad Vessels.

Reports of the misbehavior of children aboard vessels of the Panama Railroad Steamship Line have been transmitted from time to time by the masters of the vessels to the New York office or the Superintendent on the Isthmus. The most recent complaint, of a child who pried most of the ivory keys off of the piano in the ladies' saloon, and made itself otherwise annoying to the ship's company, was forwarded with the request that something be done to impress upon negligent parents their responsibility for the behavior of their children, and their liability to be made to pay for the damage inflicted by them. This has led to the inclusion of the following notice in each envelope containing authority for transportation on vessels of the line:

#### TRANSPORTATION OF CHILDREN ABOARD SHIP.

Accommodations on ships of the Panama Railroad Company are such that only the nicest consideration on the part of passengers toward one another makes a pleasant voyage possible. Children are frequently the occasion of great annoyance to passengers because of their thoughtless noisiness and their roughness in play. Parents and guardians are requested to instruct children carefully before sailing as to their deportment and to restrain them properly during the voyage. If children are reported to the Captain, it may be necessary to deprive them of the privilege of the deck.

By direction of the Acting Governor.

C. A. MCILVAINE,  
Executive Secretary.

## CANAL WORK IN OCTOBER.

### Monthly Report of the Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., November 16, 1915.  
*The Honorable the Secretary of War,*  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of October, 1915:

#### Department of Operation and Maintenance.

*Lock operation and maintenance*—In addition to the usual maintenance and repair work at the locks, work was started on connecting the motors of the towing locomotives for operation in concatenation, four of the machines at the Pacific locks having been thus equipped; preliminary work was undertaken in connection with the installation of the regulating valves at Pedro Miguel and Miraflores Locks; the painting of the lock gates at Gatun was completed; and a series of tests on the chain fenders at Gatun Locks was started. Due to the closure of the Canal by the slides, there were no complete passages of the Canal by commercial vessels, a number of vessels being locked up to lake level and later returned to sealevel.

*Electrical Division*—The net output of the power plants was as follows: Gatun hydroelectric station, 3,391,130 kilowatt-hours; Miraflores steam station (minus), 17,130 kilowatt-hours, total, 3,374,000 kilowatt-hours. The output of the Balboa air compressor plant was 173,676,645 cubic feet of free air compressed to 105 pounds. The usual operation, maintenance, and repair work was carried on.

*Municipal Engineering Division*—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: Construction of the permanent oil and water connections between Dock 13 and the Cristobal coaling station; construction of roads and sewers, and water and sewer lines for Fort Randolph, Margarita Island; sewer connection for the new Colon Hospital buildings; changes in the air, oil, and water lines at the Pacific terminals, required by work at the Sosa Hill quarry; the installation of piping for dry dock at Balboa; installation of permanent water lines for the Pacific terminals; construction of permanent roads for Balboa shops; construction of roads and walks at Fort Amador, and of walks at staff headquarters, Military Hill; construction of roads at cavalry and artillery stables at Corozal; and grading work and construction of roads in the Balboa townsite.

*Meteorology and hydrography*—The rainfall for the month was above normal everywhere except Balboa Heights, Frijoles, and Trinidad. The monthly totals ranged from 10.29 inches at Balboa to 21.86 inches at Colon, the maximum precipitation recorded on any one day being 4.69 inches, at Colon on the 16th. The estimated rainfall over the Gatun Lake watershed was 17 per cent above the normal, or 17.02 inches against a 15-year mean of 14.52 inches. The Chagres River discharge at Alhajuela was 17 per cent above the 26-year October normal, and furnished 32 per cent and 30 per cent of the net and total Gatun Lake watershed yields, respectively. The elevation of Gatun Lake varied from 86.18 on the 9th and 31st, to 85.95 on the 20th and 21st, averaging 86.02. Miraflores Lake varied in elevation from 52.95 on the 1st to



54.47 on the 24th, averaging 54.02. Two seismic disturbances were recorded at Balboa Heights during the month, on the 11th and 20th, no damage being reported as a result of either of these disturbances.

#### Division of Terminal Construction.

##### PACIFIC TERMINALS.

**Dry dock and entrance pier**—Excavation for preparing foundations at the west end of the dry dock was continued, and backfill, obtained from the excavation for the storm sewer, was placed behind the walls. There were placed in the dock 3,773 cubic yards of concrete, the greater part of which was in the vicinity of the pump well, and 324,811 pounds of reinforcing steel, and 29,754 pounds of fixed steel were placed. All of the crane girders are in place, and the work on the hollow quoins was practically completed, a little rubbing on the south quoin remaining to be done. Eighty-one and six-tenths (81.6) tons of steel were erected in the dry dock gates, and a total of 4,060 rivets driven. At the compressor house (building No. 29) practically all the hand excavation was completed, and the installation of the drain pipe was well advanced. Masonry footings for the machines were completed, and the compressors were installed on their anchor bolts, and preparations were made for placing the earth fill around the foundation of the building. All the remaining tunnel that could be installed leading from building No. 14 and in the incline leading to dry dock No. 1, was installed. The decking on the entrance pier has progressed, and at the end of the month 50 per cent of the floor slab has been poured, 451 cubic yards of reinforced concrete having been placed in the floor, together with 81 cubic yards of mass concrete along the edge of the gravity wall.

**Coaling plant**—The last buttress to be excavated behind the wooden sheathing was completed and the buttress brought up to elevation zero. The steel sheet piling was driven in order to cofferdam off the last three buttresses, and the installation of the fenders and bollards was started.

At the reloader wharf 72 caissons have been sunk to rock, the only remaining caissons to be sunk being the 8-foot caissons under the wharf bunkers, five of which had not reached rock. There were 1,634 cubic yards placed in the caissons for concrete filler, and 212,142 pounds of reinforcing steel put in place. Work was started on the anchorage wall behind the reloader wharf, and a driver was constructed and began work for putting in the batter piles.

In the unloader towers the contractor erected and riveted the east side framing of the machinery house of tower No. 1, the coal bin of tower No. 1, and completed all the corrugated iron work around the machinery house, with the exception of the front side. On tower No. 2 the contractor completed the concrete floor, and all machinery, boilers, water tanks, etc., were placed in towers Nos. 1 and 2. All sheaves were erected in place and the work on walkways, door frames, and general erection of operating mechanisms continued. In the conveying system 176 stringers have been delivered for the viaduct, 99 of which have been erected on available foundations. The steel erected was confined entirely to the straight runs along the north and south sides of the coal pockets, and amounted to 95 tons.

**Excavation and filling**—The total excavation for the month amounted to 63,873 cubic yards, of which 63,111 cubic yards were classified

as rock, the greater portion of all of which was obtained from Sosa Hill. Various small filling operations continued in the vicinity of the dry dock and the wall. There were sent to the East Breakwater from Sosa Hill quarry 61,198 cubic yards, 6,678 cubic yards of which were classified as armor rock.

**Docks**—At quay wall c-d, 22 caissons have been sunk to rock, six of which were sunk during October, and 10 additional caissons were started. Five hundred and eighteen cubic yards of excavation were made inside the caissons and 354 cubic yards of reinforced concrete filler placed therein. At quay wall d-e-f, the remaining part of the structural steel was put in place, and all but the last two panels were riveted. At pier No. 18, 473 tons of steel were erected in the pier shed, and the anchoring of caissons was completed with the exception of the large collars which have not as yet been received. Four hundred and eighty-nine cubic yards of coral backfill were placed in the middle of the pier. The quarantine pier has been completed and turned over to the Health Department, and the connecting bridge has been placed at the west end onto the floating pontoon.

##### ATLANTIC TERMINALS.

**East Breakwater**—The trestle was completed on October 7, 66 feet of double-track trestle being constructed, in which 3,760 linear feet of piling were used, and a crossover 192 feet long was laid on bents Nos. 643-655. Two hundred and forty feet of 2-inch water main were laid. The end of the trestle is at bent No. 715, station 54+49. The dry and wet fill measured in place amounted to 62,492 cubic yards, 4,959 cubic yards of armor rock and 51,929 cubic yards of core rock from Sosa Hill being dumped into the fill. In addition, dredge No. 84 pumped 4,080 cubic yards of coral sand and 6,120 cubic yards of coral rock into the core of the fill. The building for relay station No. 2 was erected, 180 linear feet of untreated piling being used in the foundation.

Under the contract for furnishing of concrete blocks for the East Breakwater, the time within which to commence casting blocks was extended to October 9, and 412 blocks were poured during the month, involving the placing of 5,068 cubic yards of concrete. Several difficulties have been experienced by the contractors, the most serious being delay in handling the blocks away from the casting platform, although it is expected that more rapid progress will be made in the future.

In maintenance work on the West Breakwater, 1,129 cubic yards of armor rock were placed at stations 89, 100, and 114.

**Coaling plant**—The pouring of floor slab and girder encasement of the reloader wharf was completed and that for the end wharf started, and at the end of the month 74 linear feet of the end wharf had been completed. One caisson at the west end of the end wharf was filled with concrete, thus completing the filling of all caissons, except two that collapsed under the wharf bunker. The concreting of bridge track on reloader wharf was started and 75 cubic yards were poured for this work, the total concrete poured during the month amounting to 1,078 cubic yards. The riveting of end wharf steel was about completed, except for the girders under the wharf bunker. The dredging of the unloader slip continued. The coral fill under end wharf for retaining coal was completed, except for 80 feet near the collapsed caissons, and the placing of ar-

mor rock on top of coral fill under end wharf was completed, except for the 80 feet above mentioned. The submarine power cables were laid across the bed of the French canal between the Cristobal substation and the coaling plant, and the temporary power line which was installed at the beginning of this work in 1914 has been removed.

Under Washington order No. 40,483 one traveling hopper on bridge "B" was completed, making a total of three completed to date. The operators' windows in the bridge digger houses were installed and glazed. The 30-pound rails on stocking and reclaiming bridges were aligned and spiked for 500 feet of track, including curves to sliding switches on the west ends of the bridges. The viaduct steel has been completely erected and riveted on both unloader and reloader wharves to within 40 feet of the north loops, approximately 800,000 pounds of steel being riveted, and making this item of structural steel about 85 per cent completed. Approximately 25,000 pounds of steel in cross ties, trolley, and lighting poles were erected complete. Creosoted ties and walkways were installed on 360 feet of the viaduct, and about 1,600 feet of straight viaduct track were aligned and spiked. Structural material for 26 conveyor cars has been received, and the trucks and bodies of 20 cars were assembled and riveted. The contractor completed the riveting on all four of the unloader towers, two of which are completely painted. The platform and framework for all four trailing hoppers were erected and riveted complete, and the hoppers and chutes are approximately 90 per cent erected but not riveted. Three approach conveyor bridges were erected, two of which were riveted complete; all of these bridges being erected on the ground and have not as yet been placed in position.

Under Washington order No. 40,587 corrugated iron sheeting work and painting were continued, and unloaders Nos. 1 and 2 are completely finished in these respects. The new chutes for reloading purposes have been installed by the contractor in towers Nos. 1 and 2. Towers Nos. 3 and 4 are progressing satisfactorily as to mechanical work.

##### Marine Division.

Due to the continued closure of the Canal by slides, no vessels passed through the Canal in October. Two vessels were measured, 11 vessels inspected to see whether their certificates conformed to the rules, and the United States net equivalent tonnage was computed on 10 vessels.

##### Dredging Division.

The total excavation for the month, including earth, rock, and gravel, was 1,292,508 cubic yards. Of this total 74,703 cubic yards were removed from Balboa inner harbor, 207,778 cubic yards of earth and 871,916 cubic yards of rock from Gaillard Cut, 22,100 cubic yards of earth from trench for cable crossing from substation to Cristobal coaling station.

The slides continued in action throughout the month, and on October 29, 1915, the channel was completely closed by a movement of the East Culebra slide.

The rock crusher *Vulcan* was engaged all month in breaking all areas not to grade in the Pacific entrance, stations 2150+00 to 2133+00, center line to east prism line. Four thousand one hundred and ninety-six holes were broken over an area of 81,516 square feet, with a total penetration of 3,508 feet and a breakage of 2,087 cubic yards. The drill



barge *Teredo No. 2* was engaged in drilling and blasting in the Pacific entrance on various shoals, 384 holes being drilled, 6,393 linear feet in total, and 5,921 cubic yards of rock were broken. The hydraulic grader was engaged in making steam for operating tripod drills, repairing dredge *Gambou*, assembling dredge *Cascadas*, and sluicing West Culebra slide. Dredges *No. 1* and *No. 82* were engaged in excavating sand and gravel from the Chagres River, 3,730 cubic yards of sand, 827 cubic yards of No. 1 gravel, 4,741 cubic yards of No. 2 gravel, and 33,282 cubic yards of run-of-bank gravel being excavated. The work of exterminating water hyacinths continued, 64,000 young plants and 2,000 square yards of old plants being pulled, and 8,100 square yards sprayed.

#### Mechanical Division.

Shop orders authorized during the month numbered 1,211, an increase of 120 as compared with September; those left over from the previous month numbered 667, and those carried forward into November 837. The output of the foundry was 207,960 pounds of iron, 99,603 pounds of steel, and 18,517 pounds of brass. Hosting was done on 4,578 pieces of equipment, and shop and field repairs were made on 7,101. In addition, 880 cars were repaired in shop, and 1,383 light and nine heavy repair jobs were done on equipment.

**Fuel oil plants.**—At the Balboa fuel oil plant, the erection of the Panama Canal Storage Corporation's tanks was started; the gasoline storage tank was about 80 per cent completed, and the erection of the shelter to protect it from the sun's rays was under way.

At the Mount Hope fuel oil plant, the tanks and firewalls of the Panama Canal Storage Corporation were passed as complying with requirements, and the firewalls about the tanks of the Texas Company were nearing completion. The gasoline storage tank was completed, except some work on the roof, and the erection of the shelter to protect it from the sun's rays was started.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following construction work was in progress for the Army at the places named: *Fort Amador*—The storehouse at this post was completed, the one at Naos Island being 92 per cent completed. *Military Hill*—Work was commenced on three additional buildings, two type-20 and one type-21; one of the seven buildings originally authorized was completed and occupied, and the remaining six of this group were completed, with the exception of the installation of electrical fixtures and some painting. *Corozal*—The work on all stables and wagon sheds for the artillery and cavalry was practically completed, and work continued on modification of quarters turned over to the Army. *Gatun*—Work was continued on the reconstruction of the four buildings removed from Camp Gaillard during the previous month, and one type-15 building was practically completed, and the remaining three were approximately 50 per cent completed. *Margarita*—The erection of eight lieutenants' quarters, three captains' quarters, one field officers' quarters, two barracks, and a sewage pumping station continued, and satisfactory progress was made. Work was commenced on the construction of the headquarters building, two type-14 noncommissioned officers' quarters, and on the dock. *Toro Point*—Work at this post on the con-

struction of the wagon shed, stables, and storehouse continued satisfactorily.

The following Canal structures were in the course of erection at the places named: *Ancon-Balboa*—The construction of all concrete family quarters carried on by this division was completed. The work on the construction of the new concrete verandas of the old Administration Building at Ancon continued and was approximately 30 per cent completed. The erection of a four-family concrete family quarters under contract progressed satisfactorily. The Panama Railroad stables in the city of Panama were completed and turned over for occupancy. The installation of the furnaces and machinery in the new Ancon Hospital crematory continued and was approximately 75 per cent completed. The construction of the new refrigerating plant at Balboa continued, the foundations of same were completed, the mat laid and the walls brought up to the level of the first floor. The bachelor building for pilots at the quarantine station was completed. The construction of the first group of the new Ancon Hospital buildings continued, and the work as a whole was approximately 15 per cent completed. Work was commenced on the foundations for the new terminal office building at the head of Pier 17, Balboa, and about 50 per cent of the piles were driven. *Corozal*—Work was continued on the construction of the Miraflores power house and practically completed with the exception of installation of louvers and the exterior basement retaining wall. The seven 12-apartment family quarters being erected on the Pedro Miguel-Miraflores road were approximately 90 per cent completed. The construction of a building for housing the cripples in the insane asylum was started and approximately 50 per cent completed. *Gatun-Colon*—The erection of the new Colon Hospital buildings continued and was approximately 50 per cent completed.

#### Supply Department.

The force report for the half month ended October 27 showed a total of 23,724 employees of The Panama Canal and the Panama Railroad Company, of whom 3,633 were white Americans and 20,091 laborers. Of the latter approximately 164 were Europeans and the remainder West Indian negroes. There was an increase of 160 laborers and an increase of 142 Americans, making a net increase of 302.

The occupants of Government quarters numbered 6,664 Americans, of whom 3,732 were men, 1,429 women, and 1,503 children; and 9,342 West Indians, of whom 5,519 were men, 1,513 women, and 2,310 children.

The value of material received during the month was \$1,317,540. It came forward in 28 steamers; the total weight of cargo, exclusive of lumber and piling, was approximately 27,989 tons. Some of the principal items were 64,000 barrels of fuel oil, 119,980 bags of cement, and 1,827,497 feet, board measure, of lumber, for stock.

The Balboa oil plant handled 190,322.11 barrels of oil, and the Mount Hope plant handled 45,509.69 barrels, approximately one-half of which in each instance was for The Panama Canal.

#### Health Department.

**General**—One case of yellow fever was received at quarantine from Buenaventura, Colombia, on October 25. The case was admitted to Ancon Hospital on the 26th and died the same day. This is the second case of yellow fever brought into the Canal Zone from this port within the period of one month. With

this exception, no cases of yellow fever, smallpox, or plague have originated on or were brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 30,219, was 13.10 per thousand per year, as compared with 12.31 for the preceding month, and 13.85 for the corresponding month of last year.

**Employees**—The health of employees continued good. The number of names on the payrolls for the preceding month was 33,419. On this basis the admission to hospitals and quarters, 321, gave a rate of 294.80 per thousand, as compared with 307.34 for the preceding month, and 344.23 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites, 272.96; blacks, 96.38; and Americans, 241.21. The admission rates to hospitals and quarters for malaria were: Whites, 95.28; blacks, 24.20; and Americans, 86.14. The total number of deaths from all causes was 20. Of these 15 died from disease, or 5.39 per thousand, as compared with 4.82 for the preceding month, and 4.68 for the corresponding month of last year. Two Americans died during the month, one from disease and one from accident.

#### Accounting Department.

The cash balance in Canal construction appropriations on October 31, 1915, was \$16,272,095.56, and in the fortifications appropriations, \$2,403,585.74. The payrolls for October, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$909,131.36 and the fortification roll amounted to \$65,464.22. Payments by the Disbursing Clerk in Washington amounted to \$1,207,924.42, and by the Paymaster on the Isthmus to \$1,209,046.22. Collections on the Isthmus amounted to \$1,034,903.12, of which \$757,386.32 was repaid to appropriations, \$238,246.48 was commissary collections and other trust funds, and \$39,270.32 was miscellaneous receipts to be covered into the Treasury. Deposits in the sum of \$115,600.00 were made with the Assistant Treasurer to be applied in payment of tolls and other charges against vessels using the Canal. Canal revenue collections and miscellaneous funds received amounted to \$203,138.16, and the disbursements under the same heading amounted to \$208,065.08.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

Two hundred and nine licenses of all kinds were issued. Thirteen estates were received and 17 settled, the total cash received during the month amounting to \$1,001.12, the total value of the estates closed being \$1,019.32. At the port of Balboa 75 vessels entered and 73 cleared, and at the port of Cristobal 83 vessels entered and 82 cleared.

**Postal service**—Postmasters remitted on account of stamp sales, second-class mail collections, postage due collections, and box rent receipts, \$7,976.72. Money orders issued during the month aggregated \$293,599.43. Of this total \$93,265 represents the value of deposit money orders issued without fee, in lieu of postal savings certificates. Deposit money orders were paid to the value of \$82,790, and postal savings certificates to the value of \$4,166. The balance of postal savings deposits on hand at the close of the month, represented by unpaid certificates and deposit money orders, aggregated \$444,949, as compared with \$438,640 at the close of the previous month.

##### POLICE AND FIRE DIVISION.

Three hundred and seventy-nine arrests

were made. Of this total 358 were males and 21 females. Fifty-seven convicts were confined in the penitentiary at the close of the month. Five convicts who had completed their sentences in the penitentiary were deported.

Three fires occurred, and the damage to The Panama Canal property resulting therefrom amounted to \$5. Panama Railroad property and the property of the United States Army suffered no damage, and the damage sustained by private property amounted to \$30.

#### COURTS.

In the District Court 84 cases were settled; 11 civil, 24 probate, and 59 criminal cases were filed, and 105 cases of all kinds were pending at the close of the month. In the magistrates' courts, 25 civil and 332 criminal cases were disposed of.

#### DIVISION OF SCHOOLS.

The schools of the Canal Zone opened their term on October 4. The total enrollment was 1,229 for the white schools, and 449 for the colored schools. In the white schools the net enrollment was 1,176, the average daily attendance 1,096.7, and the average number belonging 1,121. In the colored schools the net enrollment was 447, the average daily attendance 342.4, and the average number belonging 383.6.

#### Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including reloaded cargo, amounted to approximately 186,800 tons.

The following quantities of coal were handled and trimmed in bunkers: Colon agency, 15,350 tons; Balboa agency, 60,000 tons; total, 75,350 tons.

The large increase in the quantity of coal handled was due to the fact that a great many boats were held up at both terminals on account of the Canal being closed to traffic. No cargo was handled through the Canal.

The work on pier No. 7, Cristobal, continued satisfactorily, 4,970,441 pounds of steel floor system being erected, completing this item. The work of placing concrete in floor was started on October 14, and at the close of the month 1,892 cubic yards had been placed. In the floor slab 154,259 pounds of reinforcing rods were placed, and 62,599 square feet of forms for placement of slab and encasement of girders were set during the month.

Preliminary work continued on pier No. 6, Cristobal, 12 holes being drilled, and 867 feet of wash drilling and 95 feet of diamond drilling were completed.

Respectfully,

GEO. W. GOETHALS,

Governor.

#### OFFICIAL CIRCULARS.

##### Danger from 44,000-Volt Transmission Line.

THE PANAMA CANAL,

DEPT. OF OPERATION AND MAINTENANCE,

BALBOA HEIGHTS, C. Z., November 18, 1915.

HEADS OF DEPARTMENTS AND DIVISIONS.

Under date of December 21, 1914, notice was given as to the energizing of the transmission 44,000-volt transmission line and it was requested that all employees be notified of the fact that almost certain loss of life would result from contact with or close approach to these wires after they were put in service. It was stated that cranes or other equipment or tools should be handled so that a clearance of at least six feet from the wires is maintained.

These instructions are not being complied with, with resultant imminent danger to life and thousands of dollars worth of equipment. Within the last few months there have been several cases of equipment coming into contact with the transmission line and in several cases

it was just by lucky chance that loss of life or serious danger to equipment did not result.

In order to bring this matter once more to the attention of employees who have to work in the vicinity of the transmission line, and to enable responsibility to be definitely placed in the case of future occurrences of this kind so that disciplinary action can be taken, it is requested that a copy of this letter be sent by heads of departments and divisions to all cranesmen on both floating and rolling equipment, and to all other employees whose duties require them to work in the vicinity of the transmission line, and that a permanent record be kept of the employees to whom these copies are sent.

W. H. ROSE,

Electrical Engineer.

#### Need of Western Dump Cars.

PANAMA RAILROAD COMPANY,

OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., November 17, 1915.

CIRCULAR No. 200:

Heads of departments—We are still having difficulty in keeping the Gamboa gravel plant supplied with the necessary number of Western dump cars for loading of gravel and sand, due to some of the departments not releasing the cars consigned to them promptly.

Will you please, therefore, issue necessary instructions to all concerned to see that cars are not held under load indefinitely, but released immediately?

C. H. MOTSETT, Superintendent.

#### French Records.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., November 13, 1915.

HEADS OF DEPARTMENTS AND DIVISIONS:

Please advise promptly what French records or publications you have in your possession which were acquired by The Panama Canal from the French canal company.

This information is desired in order that such records and publications may be considered in the classification that is now being prepared by the Record Bureau for their preservation.

C. A. McILVAINE, Executive Secretary.

#### Property Transferred to or from District Quartermaster at Corozal.

THE PANAMA CANAL,

ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., November 16, 1915.

To accountable officials—It is requested that a special effort be made to accomplish all invoices covering property transferred from the district quartermaster at Corozal. Also that invoices be prepared to cover any property shipped to that official but not yet invoiced. It is desired to check out this accountability at an early date.

AD. FAURE, Chief Accountant.

#### Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, December 1, 1915, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port of Cristobal on Friday, December 3, 1915, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

GEORGE J. NAVANSLICE, Recorder.

## COMMISSARY DEPARTMENT.

### Satisfying Patrons.

The following extract from a letter addressed by the Chief Quartermaster to a customer, in answer to a complaint received, has been bulletined in the various commissary stores for the information of all concerned:

"In regard to your complaints against

\* \* \* commissary: All employees of the commissary branch who serve patrons, the manager included, have instructions to make every endeavor to satisfy all the patrons, in consistency with the regulations and without unjust injury to the interests of the commissary. All cases of complaint which they can not settle in accordance with the regulations they have instructions to take up with the Depot Commissary. It is believed that such verbal instructions have been issued to the manager of \* \* \* commissary as will prevent any further cause for complaint."

### Examining Hams.

THE PANAMA CANAL,

SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., November 18, 1915.

BULLETIN No. 441:

To commissary managers—The following extract from a letter addressed by the Chief Quartermaster to a customer, in answer to a complaint received, is bulletined for the information of all concerned:

"In regard to cutting hams open at the commissary in order that you may examine them before purchasing, I regret to advise this can not be permitted, for if you were allowed to do so other customers would be entitled to the same privilege, and the practical result would be an unnecessary loss to the commissary. The amount of fat on a ham can generally be estimated by its appearance and it is thought that you should be able to select satisfactory hams in this way."

Please bring this bulletin to the attention of your patrons.

BENJ. L. JACOBSON,

Depot Commissary.

### Cold Storage Prices.

The following list gives changes in prices of cold storage provisions which will be effective November 25, 1915, prices of other items are as published last week. The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

	Price.
Kidneys, beef, per lb.....	.08†
Bacon, breakfast, whole piece, per lb.....	.30†
Bacon, breakfast, sliced, per lb.....	.31†
Bacon, sliced, jar.....	.30*
Bacon, sliced, tin.....	.28*
Ham, sugar cured (whole) per lb.....	.24*
Ham, sugar cured (half) per lb.....	.27*
Ham, sugar cured (sliced) per lb.....	.32*
Ham, sugar cured, boiled (whole) per lb.....	.30*
Ham, sugar cured, boiled (half).....	.33*
Ham, sugar cured, boiled (sliced).....	.38*
Capons, per lb.....	.37*
Chickens, fancy roasting, corn fed, per lb.....	.38†
Squabs, ea.....	.45*
Butter, creamery special, per lb.....	.42*
Butter, creamery, 60-62 lb, tub, whole tub, per lb.....	1.50*
Cheese, Edam, ea.....	.32*
Cheese, Gouda, per lb.....	.45†
Cheese, Roquefort, per lb.....	.21*
Eggs, fresh, per doz.....	.25*
Ham, fresh, 4 doz. (oil).....	.19*
Bluefish, fresh, per lb.....	.19*
Haddock, smoked, per lb.....	.08†
Oysters, fresh, per qt.....	.33*
Cauliflower, per lb.....	.13†
Cucumbers, per lb.....	.12†
Eggplant, per lb.....	.13†
Lettuce, per lb.....	.13†
Peppers, green, per lb.....	.13*
Turkeys, per lb.....	.01†
Apples, evaporated, per lb.....	.12†
Apricots, evaporated, per lb.....	.10*
Apples, fresh, select, per lb.....	.06*
Lemons, per doz.....	.13*

\* Indicates advance from preceding list.

† Indicates reduction from preceding list.



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., November 21, 1915.)

There were no vessels entering the Canal during the week, for transit.

## PORT OF CRISTOBAL

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Nov. 19....	Professor	Harrison Line	Liverpool.	Nov. 19....	Venezuela	French Line	St. Nazaire.
Nov. 20....	Cavina	Elders and Fyffes	Port Limon.	Nov. 20....	Cavina	Elders and Fyffes	Bristol.
Nov. 21....	Wegadesk	Earn Line	Norfolk.				
*EXPECTED ARRIVALS.				*EXPECTED DEPARTURES.			
					Jacob Luckenbach	Luckenbach Line	Unknown dest.
					Professor	Luckenbach Line	Unknown dest.
					Thai	Harrison Line	Unknown dest.
					Wegadesk	Johnson Line	Unknown dest.
						Earn Line	Cuba.

\*Other than United Fruit Company's vessels, and vessels in regular service to the United States.

## PORT OF BALBOA.

*ARRIVALS.				*DEPARTURES.			
Nov. 16....	Polena	South American S. S. Co.	Valparaiso.	Nov. 16....	Huasco	South American S. S. Co.	Valparaiso.
Nov. 17....	Melville Dollar	Dollar Line	San Francisco.	Nov. 19....	Carayn	Luckenbach Line	Toocilla.
Nov. 18....	Peru	Pacific Steam Nav. Co.	Valparaiso.	Nov. 19....	San Jose	Pacific Mail S. S. Co.	San Francisco.
Nov. 19....	Jamaica	Pacific Steam Nav. Co.	Tumaco.	Nov. 20....	Huallaga	Peruvian Line	Callao.
Nov. 20....	Alavari	Pacific Steam Nav. Co.	Guayaquil.				
Nov. 20....	Newport	Pacific Mail S. S. Co.	San Francisco.				
Nov. 21....	Henrik	Brusgaard Klosterud	San Francisco.				

\*Including vessels arriving for transit through the Canal.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

Nov. 20....	Coaster	D. H. Higgins	San Francisco.	Nov. 22....	Palena	South American S. S. Co.	Valparaiso.
Nov. 20....	Crabamba	Peruvian Line	Callao.	Nov. 22....	Henrik	Brusgaard Klosterud	Montevideo.
				Nov. 23....	Melville Dollar	Dollar Line	Paita.
				Nov. 27....	Peru	Pacific Steam Nav. Co.	Guayaquil.
				Nov. 27....	Manos	Pacific Steam Nav. Co.	Guayaquil.
				Nov. 27....	Newport	Pacific Mail S. S. Co.	San Francisco.
					Salvador	Salvadoran R. R. Co.	Tumaco.
					Jamaica	Pacific Steam Nav. Co.	Tumaco.
					Harry Luckenbach	Luckenbach Line	San Francisco.
					Pevides	Luckenbach Line	San Francisco.

## Bids for Plastering Walls of Shed on Pier No. 7.

The date for opening bids for plastering the walls of shed for Pier No. 7, Cristobal, has been changed to November 27, 1915, at 10 a. m., at which time they will be opened in public, as heretofore advertised.

Advertisement for the bids appeared in THE CANAL RECORD of November 3, 1915.

Bids must be marked "Proposal for plastering walls of shed for pier No. 7, Cristobal," and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Sale of Rocker Chairs.

Seal bids will be received in the office of the Chief Quartermaster, Balboa Heights, C. Z., until 10 a. m. November 30, 1915, and then opened in public, for the purchase of 246 new rocker chairs. Bids may be submitted to cover a part or all of the chairs. Chairs may be inspected at the obsolete store, Mount Hope, on any working day between the hours of 7 and 11 a. m. and 1 and 5 p. m. The Panama Canal reserves the right to reject any or all bids. Bids must be plainly marked, "Proposal for the purchase of rocker chairs to be opened November 30," and addressed to the Chief Quartermaster, Balboa Heights, Canal Zone.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, November 20, 1915:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun Lake.	Miraflores Lake.	
Sun., Nov. 14.....	133.00	97.78	52.85	51.54	12.12
Mon., Nov. 15.....	142.65	104.32	58.09	55.52	54.54
Tues., Nov. 16.....	133.60	99.01	53.65	50.54	42.42
Wed., Nov. 17.....	136.20	99.65	57.85	57.54	23.23
Thurs., Nov. 18.....	130.75	96.83	48.85	53.54	30.30
Fri., Nov. 19.....	134.10	98.30	53.65	50.54	18.18
Sat., Nov. 20.....	131.70	97.95	55.85	54.54	28.28
Heights of low water to nearest foot.....	125.0	91.0			

## Rainfall from November 1 to 20, 1915, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>		<i>Ins.</i>
Balboa.....	.59	14	3.49
Balboa Heights.....	.52	14	2.99
Miraflores.....	1.14	15	4.30
Pedro Miguel.....	2.32	15	5.68
Rio Grande.....	2.22	15	6.25
<i>Central Section—</i>			
Culebra.....	3.03	8	9.70
*Camacho.....	2.03	8	9.14
Empire.....	1.86	8	7.13
Gambua.....	1.48	9	7.03
*Alajuela.....	1.53	2	7.99
Alhajuela.....	3.39	15	9.88
*Vigia.....	3.48	15	9.63
Prijoles.....	2.53	9	14.77
*Monte Lirio.....	2.93	16	18.09
<i>Atlantic Section—</i>			
Gatun.....	2.27	9	11.16
*Brazos Brook.....	2.85	20	11.73
Colon.....	1.43	7 & 13	11.84

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values midnight to midnight.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.							
Vessel.	Line.	Sails.	Arrives.				
Carrillo.....	U. F. C. Nov.	17.....	Nov. 24				
Colon.....	P. R. R. Nov.	18.....	Nov. 24				
Tenadores.....	U. F. C. Nov.	20.....	Nov. 28				
Santa Marta.....	U. F. C. Nov.	24.....	Dec. 1				
Advance.....	P. R. R. Nov.	26.....	Dec. 3				
Metapan.....	U. F. C. Nov.	27.....	Dec. 6				
Almirante.....	U. F. C. Dec.	1.....	Dec. 8				
Panama.....	P. R. R. Dec.	2.....	Dec. 8				
Pastores.....	U. F. C. Dec.	4.....	Dec. 12				
Zacapa.....	U. F. C. Dec.	8.....	Dec. 15				
Allianca.....	U. F. C. Dec.	9.....	Dec. 15				
Calamares.....	U. F. C. Dec.	11.....	Dec. 19				
Carrillo.....	U. F. C. Dec.	15.....	Dec. 22				

Colon.....	P. R. R. Dec.	16.....	Dec. 22
Tenadores.....	U. F. C. Dec.	18.....	Dec. 26
Santa Marta.....	U. F. C. Dec.	22.....	Dec. 29
Advance.....	U. F. C. Dec.	23.....	Dec. 30
Metapan.....	U. F. C. Dec.	25.....	Jan. 3

## CRISTOBAL-COLON TO NEW YORK.

Allianca.....	P. R. R. Nov.	25.....	Dec. 1
Zacapa.....	U. F. C. Nov.	25.....	Dec. 2
Calamares.....	U. F. C. Nov.	29.....	Dec. 6
Colon.....	P. R. R. Dec.	2.....	Dec. 8
Carrillo.....	U. F. C. Dec.	2.....	Dec. 9
Tenadores.....	U. F. C. Dec.	6.....	Dec. 13
Santa Marta.....	U. F. C. Dec.	9.....	Dec. 16
Advance.....	P. R. R. Dec.	9.....	Dec. 16
Metapan.....	U. F. C. Dec.	13.....	Dec. 21
Panama.....	P. R. R. Dec.	16.....	Dec. 22
Almirante.....	U. F. C. Dec.	16.....	Dec. 23
Pastores.....	U. F. C. Dec.	20.....	Dec. 28
Allianca.....	P. R. R. Dec.	23.....	Dec. 29
Zacapa.....	U. F. C. Dec.	23.....	Dec. 30
Calamares.....	U. F. C. Dec.	27.....	Jan. 4

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba.....	U. F. C. Nov.	20.....	Nov. 27
Cartago.....	U. F. C. Nov.	24.....	Nov. 29
Abangarez.....	U. F. C. Nov.	27.....	Dec. 4
Heredia.....	U. F. C. Dec.	1.....	Dec. 6
Atenas.....	U. F. C. Dec.	4.....	Dec. 11
Parismina.....	U. F. C. Dec.	8.....	Dec. 13
Turrialba.....	U. F. C. Dec.	11.....	Dec. 18
Cartago.....	U. F. C. Dec.	15.....	Dec. 20
Abangarez.....	U. F. C. Dec.	18.....	Dec. 25
Heredia.....	U. F. C. Dec.	22.....	Dec. 27
Atenas.....	U. F. C. Dec.	25.....	Jan. 1
Parismina.....	U. F. C. Dec.	29.....	Jan. 3
Turrialba.....	U. F. C. Jan.	1.....	Jan. 8

## CRISTOBAL-COLON TO NEW ORLEANS.

Parismina.....	U. F. C. Nov.	28.....	Dec. 3
Turrialba.....	U. F. C. Nov.	29.....	Dec. 6
Cartago.....	U. F. C. Dec.	5.....	Dec. 10
Abangarez.....	U. F. C. Dec.	6.....	Dec. 13
Heredia.....	U. F. C. Dec.	12.....	Dec. 17
Atenas.....	U. F. C. Dec.	13.....	Dec. 20
Parismina.....	U. F. C. Dec.	19.....	Dec. 24
Turrialba.....	U. F. C. Dec.	20.....	Dec. 27
Cartago.....	U. F. C. Dec.	26.....	Dec. 31
Abangarez.....	U. F. C. Dec.	27.....	Jan. 1
Heredia.....	U. F. C. Jan.	3.....	Jan. 5
Atenas.....	U. F. C. Jan.	3.....	Jan. 1





## The Canal Record

Official publication of The Panama Canal.

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All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscriptions for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Excavation during Past Week.

Excavation from the bases of the Culebra slides during the week ending at 6 a. m., Tuesday, November 30, amounted to 213,225 cubic yards. Other excavation from the Cut during the same period amounted to 51,234 cubic yards, making the total for the week amount to 264,459 cubic yards.

The work of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	78,800
Gamboa.....	15-yard dipper.....	37,070
Paraiso.....	15-yard dipper.....	68,455
Corozal.....	Ladder.....	28,900
No. 86.....	Pipeline suction.....	30,900
Culebra.....	Seagoing suction.....	20,334

The total excavations for the preceding five weeks were 239,885; 254,286; 256,262; 294,698; and 303,850 cubic yards, respectively.

#### Excavation Records in November.

The total excavation by the dredges in Gaillard Cut during the month of November, exclusive of rehanding, amounted to 1,228,730 cubic yards. This sets a new high record for a month's dredging work in the Cut, the previous highest quantities having been 1,052,586 cubic yards in September and 1,079,693 cubic yards in October, 1915. In October, 872,982 cubic yards were taken from the bases of the Culebra slides, and in November the spoil removed from these slides amounted to 1,004,480 cubic yards.

The spoil rehandled by pipeline suction dredge No. 86, and not credited as excavation, amounted to 37,994 cubic yards.

The new 15-yard dipper dredge *Cascadas* set a new high record for a month's work by

one dredge, in excavating 296,280 cubic yards in November. This was the first month of operation for the *Cascadas*, as the dredge was placed at work about midday of October 31. During the first seven days of the month the *Cascadas* worked only 12 hours a day.

#### Dredge "Cascadas" Accepted.

The new 15-yard dipper dredge *Cascadas*, which was first placed at work on October 31, has completed the 30-day working test with satisfaction to the authorities of the Dredging Division and has been accepted by The Panama Canal. The *Cascadas* sailed from the United States in tow of the tug *M. E. Luckenbach* on September 27, arrived at Cristobal on October 21, was towed through the Canal to Gamboa the next day, had her assembly completed there in a little over seven days, and after preliminary tests was placed at work on October 31. The time required to deliver the dredge at work was seven days less than that required for the *Paraiso* and 11 days less than that required for the *Gamboa*, the first of the three 15-yard type, basing the count from the day of departure of the dredge from the United States.

#### Earthquake Shocks.

Ten distinct seismic disturbances were recorded at the Balboa Heights observatory during the four days from November 26 to November 29, inclusive.

The first shock, which began at 2.12.30 p. m. on November 26, was the heaviest of the shocks, and was similar in many ways to the disturbance that occurred on October 1, 1913. The shocks that followed were comparatively light movements, and resembled the light shocks that followed the disturbance of October 1, 1913. The intensity of the heaviest shock was V, on the Rossi-Forel scale of I to X.

The indicated distances of the latest disturbances varied, but all seem to have had a common origin about 120 to 140 miles away, and the epicenter of the disturbances is thought to be southwest of Balboa Heights and probably in the neighborhood of Los Santos province.

The disturbance that was recorded about midnight of November 29 was over 200 miles away, but in all probability occurred along the same fault as those previously recorded.

#### Work Begun on Canal Clubhouse at Ancon.

Grading on the site for the new Canal Clubhouse to be erected at Ancon was begun on Monday, November 22, and at the end of the week the digging for the foundations was in progress. The clubhouse will incorporate the building which formerly housed the district quartermaster's office and storehouse on the first floor and the Ancon lodge hall on the second floor. This building was shored and lined up on its foundation piers last week, preparatory to the adjacent erection of the principal part of the new building.

### CUBIC YARD COMPARISONS.

Examples Designed to Convey Meaning of Excavation Figures.

In the work of excavation at the bases of the Culebra slides the numbers of cubic yards removed are the measures of progress. To the men familiar with excavation work expressions in cubic yards mean a fairly comprehensible concept of material removed, of a hole made, in the manner in which a hundred feet or a mile stands for a definite conception of distance. The dredging men have established, also, their standards of relative speed. They know that for the 5-yard dipper dredge *Cardenas* to dig 4,000 cubic yards a day, or for the 15-yard *Gamboa* to remove 12,000 yards in the same time, is a good day's work. This is just as a farmer knows that to plow three acres a day is a good performance for a man with a two-horse team; as a runner respects a dash of 100 yards in 10 seconds, or a mile run in five minutes; as the sailor knows the speed of a "12-knot clip" or the railroad man the rush of 70 miles an hour; as the operator of a ½-yard concrete mixer appreciates a run of 200 cubic yards a day. It is a matter of measures and standards.

An effort will be made here to make cubic yards generally comprehensible by means of comparisons. A cubic yard is the quantity contained in a cube one yard on the edge. It contains the equivalent of 27 cubes one foot on the edge. As each cubic foot contains approximately 7½ gallons, a cubic yard contains about 202 gallons. This would be 6-2/5 barrels, measured in the standard liquid or "whiskey barrel" of 31½ gallons. It would contain 3-1/5 hogsheads, as used for sugar, containing 63 gallons. One cubic yard of earth would make a good load for a two-horse team, on a dirt road. A modern 5-ton motor truck could haul about 3-2/5 cubic yards of the spoil from the Cut at a load. Standard-gage 30-ton railroad box cars, 33½ feet long, for commercial service in the United States, have interior space of about 80 cubic yards. The standard type of first-class passenger car on the Panama Railroad, about 60 feet long, contains about 185 cubic yards.

The record excavation by a single dredge in the Cut in 24 hours is 17,185 cubic yards. The record for a day's work by the present fleet in the Cut is 48,622 cubic yards. The record for a week is 303,850 cubic yards. The record for a month is 1,228,730 cubic yards. For comprehension of these large multiples of the cubic yard, these comparisons are offered:

To cover an acre of land one yard deep would require 4,840 cubic yards. The spoil removed on the *Gamboa's* record day, 17,185 cubic yards, if spread out in a stratum a yard deep would have covered 3½ acres. The material removed by all the dredges in the rec-

ord day, so spread out, would cover approximately 10 acres.

The standard quarter-section farm on Government reclamations in the United States contains 160 acres. Covering such a farm a yard deep would use the spoil of nearly three weeks' work in the Cut.

Central Park in New York City contains 840 acres, including the areas occupied by buildings, reservoir, etc. If the spoil taken from the Cut were spread over this park a yard deep the area would be covered in approximately four months. In other words, stripping three feet off the top of the park would be about the equivalent of four months' work in the Cut.

Lower Broadway in New York City is approximately 80 feet wide, including pavements. To fill the street to a depth of 10 feet for 100 feet would take 2,963 cubic yards. An average day's excavation in the Cut, say 40,000 cubic yards, would extend such filling to a distance of 1,350 feet, over a quarter of a mile. From No. 1 Broadway, at the Customs House, to Walker Street, a distance of one mile, would be covered in less than four days—3.91, to be exact. A month's excavation, taken at 1,000,000 cubic yards, would fill the mile of street 63.9 feet deep, about to the level of the fifth stories of the adjacent buildings. This spoil (1,000,000 cubic yards, or a month's excavation) would fill the street to the level of the top of the Woolworth Building tower, 796½ feet, for a distance of 423.6 feet.

Traversing the avenues of New York City, above Tenth Street the city blocks are approximately 200 feet in length from north to south and from 400 to 900 feet in length from east to west, exclusive of the width of the streets, which is usually 60 feet for the cross streets and about 100 feet for the avenues. Taking a block 200 by 600 feet, the 1,000,000 cubic yards of spoil excavated from the Cut in a month would cover it to a depth of 225 feet. This is the height of the Produce Exchange building at the Battery. Grant's tomb, on Riverside Drive, is 160 feet in height; the spires of Saint Patrick's Cathedral rise to a height of 332 feet.

The Ansonia apartment hotel, at Seventy-fourth Street and Broadway, covers a plot of ground measuring 200 by 400 feet. The normal day's excavation would cover this plot to a depth of 13½ feet, and a week's work would cover it to a depth of over 90 feet.

The Flatiron Building at Twenty-third Street, Broadway, and Fifth Avenue, occupies a triangular plot 87 by 190 feet. A day's excavation from the Cut, taken at 40,000 cubic yards, would cover this plot to a depth of 130.6 feet, up to the tenth story.

The Washington Monument in Washington D. C., consists of a shaft, 55 feet 1½ inches square at the bottom by 34 feet 5½ inches square at the top, with a height of 500 feet 5½ inches, surmounted by a pyramidal apex 55 feet high. The whole structure displaces approximately 38,000 cubic yards. This quantity is the measure of a fair day's excavation in the Cut.

An example from Europe is afforded by the Coliseum at Rome. It is elliptical in plan, measuring 510 by 616 feet on the axes, and its exterior wall's height is 160 feet. The displacement of this structure is approximately 1,445,000 cubic yards, about the bulk of a month and a half of excavation from the Cut.

The Parthenon at Athens measures 228 by

101 feet in plan, by 65 feet to the apex of its pediments, or 59 feet from the top of the stylobate to the gable. With the stylobate, it occupies a space of about 50,337 cubic yards; without the stylobate, about 44,350 cubic yards. These quantities represent approximately the work of less than a day and a quarter in the Cut.

The Great Pyramid of Gizeh, 481 feet high and 756 feet along each side of its square base, contains approximately 3,400,000 cubic yards. This quantity represents approximately three months and 10 days of excavation by the dredges.

For comparisons on the Isthmus, the new Administration Building at Balboa Heights may be taken. It is built on the plan of the letter E, the main building being 326 feet eight inches front by 55 feet eight inches wide, with two large end wings 122 feet seven inches long by 55 feet eight inches wide, and a smaller center wing 32 feet six inches long by 43 feet wide, and is three stories high throughout, with the highest point of the roof approximately 66 feet above the level of the front terrace. The displacement of this building is 72,761 cubic yards. In the week ending at 6 a. m., Tuesday, November 23, the dredge *Casadas* excavated 83,205 cubic yards, and the *Gamboa* excavated 73,040 cubic yards. The work of the fleet in the Cut during the same week amounted to 303,850 cubic yards.

A lock chamber, 1,000 feet long, 110 feet wide, and 60 feet deep, contains 6,600,000 cubic feet, or 244,444 cubic yards. This is

less than the usual excavation from the Cut during a week.

The hull of the *Paraíso*, or of the *Gamboa*, is 136 feet long by 44 feet wide and has an average depth of about 14½ feet. It contains, accordingly, about 86,768 cubic feet, or 3,214 cubic yards.

Another angle from which to view the work of the dredges is from consideration of the rate of production per hour or per minute. On a basis of excavation of 40,000 cubic yards in a day, the output per hour is 1,666 cubic yards. This is the equivalent of the interior contents of nine first-class passenger coaches, as described above. The output per minute is approximately 27.7 cubic yards. This is the contents of a column of square section, one yard on the side, 83½ feet high, or of a cube 9.08 feet on the side. It would fill a room, 15 by 20 feet in plan, 2½ feet deep in a minute; or if the room were 12½ feet high, would fill it completely in five minutes. In a second, the output is .463 cubic yard, or 12½ cubic feet, or 93½ gallons. This is approximately the contents of three whiskey barrels or two paint barrels.

#### Weight of Bread Loaf Increased.

Effective December 1, 1915, the weight of each loaf of bread baked by the commissary branch of the Supply Department will be increased from 13½ ounces to 14 ounces, the weight of the dough being increased approximately to 16 ounces. There is no change in price.

### VESSELS OF VARIOUS NATIONALITIES USING THE CANAL.

The numbers of the vessels of various nations passing through the Canal each month, from the opening of the Canal to commercial traffic on August 15, 1914, to the date on which traffic was suspended by the action of the slides in Gaillard Cut, is shown in the following tabulation. It will be noted that the British and American vessels preponderate greatly, forming, respectively, 43.7 per cent and 39.7 per cent of the total of 1,519 vessels. Together they comprise 83.4 per cent of all the ships. Other comparisons are afforded by the table, in which classification by the nationalities is arranged alphabetically:

NUMBER OF VESSELS OF VARIOUS NATIONALITIES PASSING THROUGH THE PANAMA CANAL.

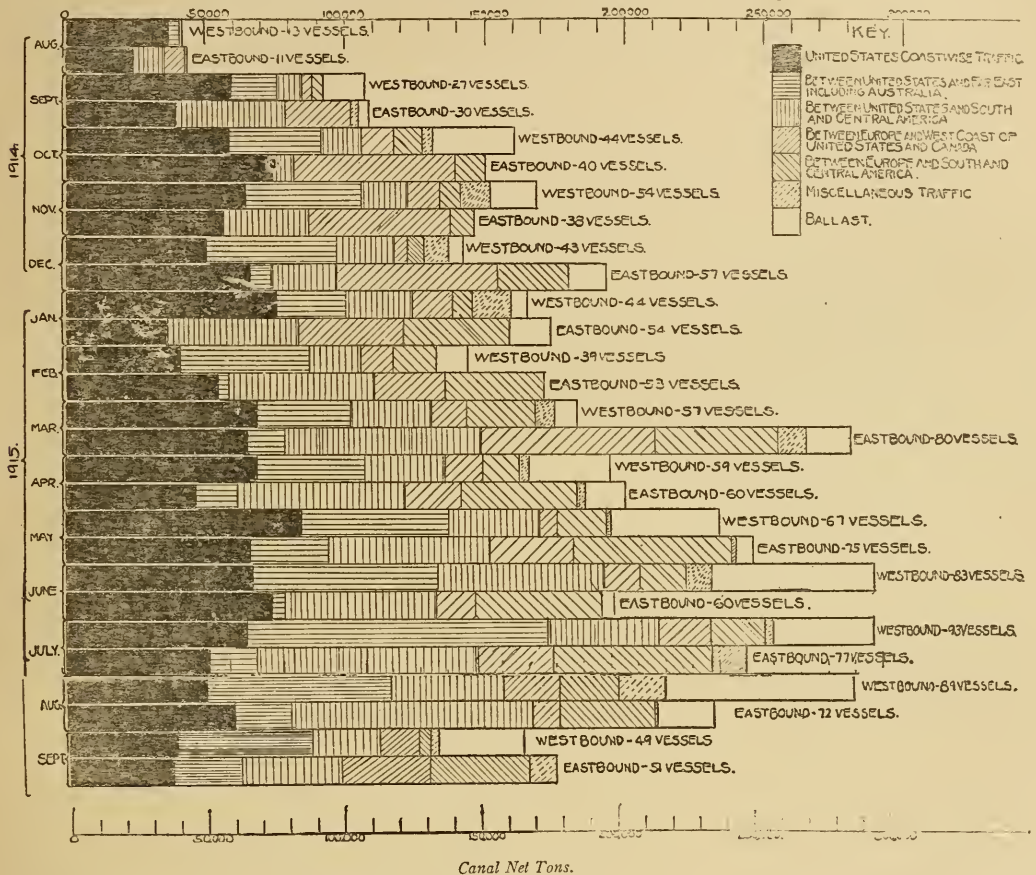
Atlantic to Pacific.													
Month	American	British	Chilean	Danish	Dutch	French	Honduran	Italian	Japanese	Nicaraguan	Norwegian	Panamanian	Peruvian
August.....	12	13	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....
September....	15	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October.....	13	27	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
November....	25	26	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
December....	20	18	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
January.....	26	10	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
February....	18	15	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March.....	25	24	3	1	.....	.....	1	1	.....	.....	.....	.....	.....
April.....	25	25	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May.....	29	25	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June.....	25	42	3	1	.....	2	.....	.....	3	.....	.....	.....	.....
July.....	33	41	2	3	1	.....	.....	.....	6	.....	.....	.....	.....
August.....	23	42	4	1	3	.....	.....	1	.....	.....	.....	.....	.....
September....	10	27	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	299	335	23	15	12	2	3	2	13	1	26	5	8
Pacific to Atlantic.													
August.....	9	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
September....	10	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October.....	22	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November....	19	16	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
December....	23	31	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
January.....	20	23	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February....	21	23	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
March.....	33	29	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
April.....	22	27	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May.....	31	34	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June.....	28	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July.....	22	35	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August.....	29	34	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September....	15	22	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	304	330	25	20	3	2	3	1	4	1	37	2	6
Grand total.	603	665	48	35	15	4	6	3	17	2	63	7	14
													30
													\$758
													\$1519

\* Including one Argentinian vessel.



## CHART OF NET TONNAGE OF TRAFFIC THROUGH THE CANAL.

The chart published below shows graphically the relative tonnage of ship movements through the Canal over the five great routes which constituted the course of over 97 per cent of the laden vessels passing through the Canal up to the time it was closed to traffic, September 18, 1915. The remainder of the traffic is over miscellaneous routings and of vessels in ballast, the relative proportions of which are also shown. The chart shows the aggregate net tonnage (Panama Canal measurement) of vessels moving in each direction, from Atlantic to Pacific and from Pacific to Atlantic, over each route every month. The abscissas at top and bottom of the chart indicate net Canal tonnage, in units of 10,000, and all the parts are drawn to scale.



## Sale of Red Cross Christmas Seals for Work against Tuberculosis.

The 30,000 Red Cross Christmas seals for 1915 sent to the Isthmus by the American National Red Cross have been disposed of by the Canal Zone chapter, and a cable order for 25,000 more has been sent to Washington. The seals are being sold through the offices of the district quartermasters, at the Canal clubhouses, and by pupils of the Canal Zone schools. In addition, the Boy Scouts and the Camp Fire Girls have been supplied with seals through the clubhouses. For every sale of 25 seals a Red Cross button is given, and the children take interest in accumulating these.

The maximum sale of seals on the Isthmus was attained in 1912, when the Canal Zone chapter disposed of 81,270.

The design of the Christmas seal for 1915, which is printed in red and green on white paper, is reproduced herewith.

It is proposed to devote 90 per cent of the proceeds of sales this season to anti-tuberculosis work on the Isthmus. As tubercular cases occurring on the Canal Zone are deported this means that most of the work will be in



the cities of Panama and Colon. These cities have very high rates of tubercular infection, about two and one-half times the normal, which is attributed principally to the crowding of many persons in small quarters, accompanied by a general lack of observance of sanitary practices. In the estimates of the Health Department of The Panama Canal for the next fiscal year are included the salaries of two district nurses, who are to be used in the establishment of relief stations in the cities of Panama and Colon. These will be places where those in the first stages may obtain advice and treatment and assistance, and will be the bases of operations in a general campaign against tuberculosis and for infant welfare in the cities. If this work is established, the central committee of the Red Cross will be required to authorize the use of the anti-tubercular fund of the Canal Zone Chapter to assist in the anti-tuberculosis campaign on the Isthmus.



## PERMANENT PLAYGROUNDS.

Work Begun on Athletic Field, Tracks, Game Courts, and Children's Playgrounds at Balboa.

One of the proposed features of the permanent Canal towns of Cristobal, Gatun, Pedro Miguel, and Balboa is village athletic fields and playgrounds. A committee appointed in the latter part of 1913 reported early in 1914 with recommendations as to the scope of the work and the order of procedure

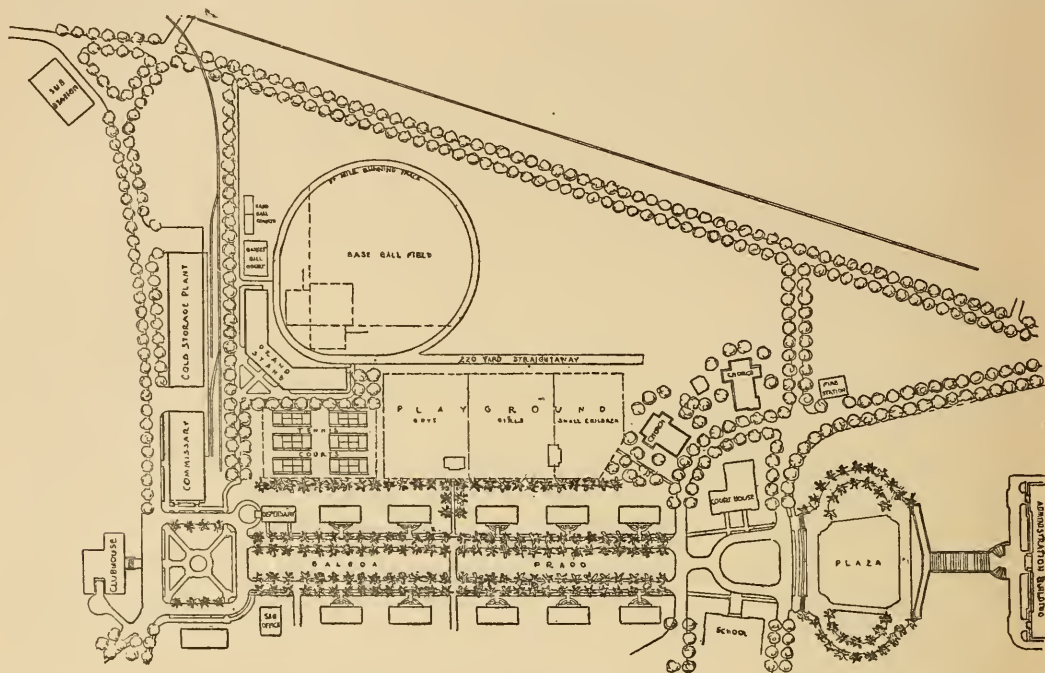
tion is being carried out by the Division of Municipal Engineering.

As shown by the accompanying sketch, the athletic field and playground will lie on the west side of Balboa Prado, in the triangular space bounded by the prado, Sosa Hill, and the road running between Balboa shops and the foot of the hill on which the Administration Building stands. It will cover about 25 acres.

The grandstand facing the baseball field

and the open field between this and the road leading to Balboa shops is to be devoted to miscellaneous athletics, such as pole-vauling, jumping, shot-putting, etc. Six tennis courts, of which two are authorized at present, are to be built in the rear of the right wing of the grandstand, and the playgrounds for boys, girls, and small children will be to the north of these, and lying directly behind the houses fronting on the prado.

The sum of \$12,500 has been included in the



PLAN OF ATHLETIC FIELD AND PLAYGROUND AT BALBOA.

in construction. The general plan outlined by the committee has been adhered to in purpose, but lack of funds has prohibited its being carried out prior to this time. Work has been begun, however, on the permanent grounds for the town of Balboa, following the plan presented herewith. The plan was prepared by the landscape architect, and the construc-

tion will be built of steel and concrete, and will have a seating capacity of from 2,500 to 3,000 persons. Extending around the baseball field will be a quarter-mile running track. On the left of the grandstand will be a basketball court, with two handball courts lying beyond. On the right of the grandstand will be a 220-yard straightaway track,

estimates for expenditure for grading and laying out the various areas, constructing running tracks and courts, and erecting apparatus. Twenty-five hundred dollars has been allotted for the purchase of apparatus for the playgrounds for boys and girls and small children. This apparatus will include horizontal ladders, traveling ring outfits, jumping standards, vaulting standards, parallel bars, vaulting horses and bucks, inclined boards, swing outfits, giant strides, volleyball posts and nets, and perforated steel basketball stops, for the older boys and girls; and for the small children, kindergarten swing outfits, seesaws, and slides.

#### Obituary.

Charles James Stanton, employed as a carpenter in the Building Division, and living at Ancon, died on November 4 in Ancon Hospital as the result of a fall sustained while at work at Military Heights, Balboa, on November 2. His residence in the United States was in Arlington, N. J.

Robert Richmond Hunter, aged 17 years and 11 months, employed as an inspector of barges, was drowned in Gaillard Cut on November 15. His father, Robert B. Hunter, lives at Paraiso.

#### Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Brown, James.....	82775	Panama.....	La Boca.....	Docks.....	Nov. 13, 1915.
Dennis, Eustace.....	51648	Jamaica.....	Paraiso.....	Municipal Div.....	Nov. 8, 1915.
Hunter, Robert R.....	6311	United States.....	Paraiso.....	Dredging Div.....	Nov. 15, 1915.
Richardson, George.....	87728	Jamaica.....	Colon.....	P. R. R.....	Nov. 19, 1915.
Webber, Charles.....	54345	Panama.....	Colon.....	Term. Const.....	Nov. 13, 1915.
Jones, Samuel.....	69192	Trinidad.....	Gatun.....	O. & M.....	Nov. 18, 1915.
Price, Moses.....	38017	Barbados.....	Colon.....	Printing Plant.....	Nov. 19, 1915.
Small, James Christopher.....	37166	Barbados.....	La Boca.....	Supply Dept.....	Nov. 23, 1915.
Rodriguez, Francisco.....	66616	Colombia.....	Panama.....	Land Surveys.....	Nov. 21, 1915.
Watson, Adolphus.....	100367	Jamaica.....	Colon.....	P. R. R.....	Nov. 21, 1915.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## OFFICIAL CIRCULARS.

Supplement No. 4 to Circular 500-A, Covering Charges for Wharfage, Craning, Stevedoring and Transferring Cargo, etc., Issued May 17, 1915, Effective July 18, 1915.

PANAMA RAILROAD COMPANY,

OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., November 15, 1915.

1. Effective at once, item 2 (Wharfage), paragraph 5, is amended in accordance with the Governor's circular dated September 17, as follows:

No charge for wharfage will be made against vessels while occupying a berth alongside the steel pier, Balboa (pier No. 4) for the purpose of obtaining oil, whether from The Panama Canal or commercial companies, when such vessels have been placed there for the convenience of The Panama Canal; nor will wharfage be charged for the time a vessel occupies a berth alongside the steel pier solely for the purpose of obtaining oil after having been placed there in order to load or unload cargo or passengers, or to receive cargo supplies from The Panama Canal or Panama Railroad Company.

2. Effective December 15, 1915, item 6-A (Stevedoring and Transferring Cargo), paragraph 10, is hereby amended by adding the following:

When a receiving carrier calls for certain cargo held in storage by the Panama Railroad Company and then decides not to take such cargo, or only a part of it, necessitating part or all of such cargo being returned to storage, a switching charge of \$5 per car will be made against such receiving carrier for every car thus moved, in addition to the cost of segregation provided for in the first part of this paragraph.

C. H. MOTSETT,

Superintendent.

GEO. W. GOETHALS,

President.

## Holding Silver Family Quarters.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., November 18, 1915.

CIRCULAR NO. 628-3:

1. Silver family quarters may be held for 60 days during the absence on leave of an employee to whom they are assigned, or his family, or both simultaneously, provided this privilege shall be granted for more than one period of 60 days in any service year.

2. Rent for the time quarters are held under this provision must be paid the same as if quarters were occupied.

GEO. W. GOETHALS,

Governor.

## Burned-out Lamps.

THE PANAMA CANAL,

ELECTRICAL DIVISION,

BALBOA HEIGHTS, C. Z., November 29, 1915.

CIRCULAR NO. 103:

Instructions in regard to the recovery of burned-out lamps are not being carefully complied with.

You are hereby notified that all burned-out Mazda lamps, nitrogen series, carbon, or other wire drawn lamps have a market value, as bases are sold as scrap brass and considerable platinum is recovered. All such lamps should be collected and turned in to obsolete store, Mount Hope, from time to time in order that they may be returned to the States, where they find a ready market.

All employees are requested to save burned-out lamps in quarters and elsewhere and turn them over to employees of the Electrical Division when renewals are made.

W. H. ROSE,

Electrical Engineer.

## Invoices Covering Credit Sales.

THE PANAMA CANAL,

ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., November 18, 1915.

To all concerned—The following is a statement of the procedure to be followed by Panama Canal officials, as well as officials of other branches of the United States Government, in handling invoices of bills covering credit sales by The Panama Canal:

A. Sales to branches of the United States Government on the Isthmus, including only sales to such branches as make payment by transfer of appropriation, to post exchanges, and to vessels of the United States Navy assigned to Canal Zone waters:

a. Shipments and deliveries on requisitions will be invoiced on form P. C. 924-I. Proper surcharges will be shown on all copies.

b. Storekeepers will mail to the Auditor an advance copy of each invoice, and will forward to the requisitioning official the original and four copies.

c. The consignee will sign and send to the Auditor the original and two copies of each invoice.

d. The Auditor will hold all invoices until the third day of the month following that in which the invoices are dated, and will then prepare bill on form A-15 (yellow). The Auditor will forward the original (to which will be attached the originals of invoices) and two copies of the bill to the proper officials, who will approve and return the original to the Auditor.

e. In case of deliveries on foremen's orders, the usual copies will be forwarded to the Auditor daily to be included in a monthly bill. The Auditor will forward the original and two copies of the bill to the proper official, who will approve and return the original to the Auditor. One copy of the bill (which is to be retained by the receiving official) will be supported by duplicate copies of the foremen's orders.

B. To other purchasers, including companies of the United States Army, clubs of employees, and social, fraternal, and charitable institutions, and the Republic of Panama:

a. Shipments and deliveries will be invoiced on form P. C. 924-I.

b. In addition to the regularly required advance copy, the storekeeper will send to the Auditor the original and two copies of each invoice.

H. A. A. SMITH,

Auditor, The Panama Canal.

## JOINT LAND COMMISSION.

## Rule of Dismissal.

In the matter of the claim of José R. Sanchez, for property located at El Estero, rule of dismissal No. 233, docket No. 1146 and 2503, November 22, 1915—With reference to the claims of José R. Sanchez, docket No. 1146 and docket No. 2503, a duplicate of the foregoing claim, the evidence before the Commission is that he has made settlement with the United States, payment having been made to claimant in April, 1911, under voucher No. 20007.

In view of such settlement no further action is necessary by this Commission, and the claims of José R. Sanchez, docket Nos. 1146 and 2503, are therefore dismissed.

RICARDO J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

## Notice of Awards.

In the matter of sundry claims, award No. 103, docket numbers as shown, November 20, 1915—An award is hereby made against the United States in favor of the persons hereinafter named, in the sum of \$284 United States currency.

This award shall be paid to the persons hereinafter named in the amounts specified, on or before the 20th day of December, 1915, and if payment or tender or payment of any items of this award is not made on or before that date such items shall thereafter bear interest at the rate of six per centum per annum until paid. David Campbell, docket No. 1038—For all rights, claims, and other interests which the said Daniel Campbell may possess or may have possessed in and to crops, fruit trees, and any other improvements at or near La Seiba on the Chagres River, the sum of \$200.

This property is separate and distinct from that covered by payment of \$75 made February, 1915, voucher register No. 4032.

Maria Carlos de Asilla, docket No. 1104—For all rights, claims, and other interests which the said Maria Carlos de Asilla may possess or may have possessed in and to crops, fruit trees, and any other improvements on lands of Palo Serpeta y Matias, the sum of \$84. Total, \$284 United States currency.

RICARDO J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

## Certification of Disagreement.

In the matter of the claim of Tiberio Galastica, for property located at La Cienega and Escobar, Trinidad River valley, certification of disagreement, rule No. 224, docket numbers 1121, 2577, 2590, November 5, 1915—Under the provisions of Article XV of the Treaty between the United States of America and the Republic of Panama ratified February 26, 1904, it is provided:

"The President of the United States shall nominate two persons and the President of the Republic of Panama shall nominate two persons and they shall proceed to a joint hearing, but in case of disagreement of the Commission (by reason of their being equally divided in conclusion) an umpire shall be appointed by the two Governments who shall render the decision."

Pursuant to the provisions of this article the members of said Commission for the United States of America desire to bring to the attention of their Government that the Commission has been unable to reach an agree-

ment in the claim of Tiberio Galastica for property located at La Cienega and Escobar, Trinidad River valley, docket numbers 1121, 2577, and 2599.

Said members of the Joint Commission hereby certify to their Government the disagreement of the Commission.

NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

## Rule of Dismissal.

In the matter of sundry claims, rule of dismissal No. 202, docket numbers as shown, October 22, 1915—With reference to the following claims, the evidence before the Commission is that settlement therefor has been made by the United States:

Docket No.	Claimant.	Tax	Date of Payment.
1580	Charles Fletcher	606	2-15
1681	E. W. (Ebenzer W.) Morris	600	1-15
1694	Magdalino Martin	10	1-14
1712	Henry Stult	10	8-15
1764	Cayetano (Caytana) Esquina	10	1-14
1792	Demetrio Arenas	157	11-13
1799	José de C. (de la Cruz) Calderon		12-13
1800	Clemente Camero		12-13
1803	Fidel Diaz	504	6-13
1807	Demetrio	1048	5-13
1808	Leonica Gomez	10	10-13
1811	Nicholas Hernandez	145	4-13
1813	Eduardo Herrera	257	11-13
1815	Modesto Herrera	254	11-13
1819	Francisco Mesa	155	11-13
1820	Manuel Mesa	301	8-13
1821	Antonio Miranda	1773	5-13
1829	Narciso Palomino	285	5-13
1830	Milagro (Milagro) Ramirez	283	5-13
1831	Milagros (Milagro) Ramirez	5	13
1833	Augustin Rangel (Ranjel)	1	8-15
1839	Juan Cancio (Garcia) Rangel	258	11-13
1840	Manuel Inocencio Ranjel (Rangel)	249	11-13
1843	Manuel de Jesus Ranjel (Rangel)		11-13
1845	José Inez Reyes	11	1-14
1848	Juan Rodriguez	263	5-13
1851	José F. Salazar	136	11-13
1853	Fidel Sanchez	254	11-13
1854	Fidel Sanchez	250	11-22-13
1856	Modesto Silva	505	11-13
1861	Leonardo Zuniga	2554	11-13
1862	Manuel de los Santos Salazar	245	11-13
1863	Ricardo Rodriguez	112	2-14
1865	Domingo Reyes	148	4-13
1879	George Almond	2	1-14
1886	Concepcion Hernandez	1734	1-14
1897	Genaro Hernandez	1735	11-13
1898	Modesto Santos		2-14
1900	Julia Olivares	1731	11-13
1916	Maria Eulogia Rangel		10-13
2422	Antonio Blanco	477	5-14
2428	Manuel Dominguez		1-14
2429	Juan Estrada	1735	12-13
2430	Ginero Hernandez	1734	1-14
2445	James Lynch	102	8-13
2472	José Viejo (Viego)	1699	1-14
2487	Domingo Morales		12-13
2493	Gerardo G. Girardo		1-14
2545	Eusebio Yope (Yopes)	898	9-15
2588	Hopelito Orejuela		4-14
2593	Agustina (Augustina) Natera	128	11-13
2612	Jacinto		1-14
2608	Francisco (Francisco) Castillo	1781	10-13

In view of the above settlements, no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI MONROE KAGY, Commissioners.

## Nullifying Rule of Dismissal.

In the matter of the claim of Francisco Castillo, for property located at Rio Grande, rule No. 207, docket No. 2608, October 30, 1915—On October 8, 1915, counsel for the United States filed with the Commission a motion for the dismissal of the claim of Francisco Castillo, docket No. 2608, attaching thereto what was stated in the motion to be a bill of sale evidencing direct settlement and certificate of the Paymaster of The Panama Canal; and it appearing that settlement had been made for the claim docket No. 2608, the Commission on October 22, 1915, entered its rule of dismissal No. 202, disposing of sundry claims on account of previous payment.

On October 29, 1915, counsel for the United States informed the Commission in writing that the motion to dismiss the claim docket No. 2608, with attached bill of sale and certificate of Paymaster, was in error, as no payment had ever been made to claimant in docket No. 2608.

It having been shown that the dismissal of claim docket No. 2608 was an error, rule of dismissal No. 202, of October 22, 1915, is hereby nullified in so far as said rule refers to the claim of Francisco Castillo, docket No. 2608, which is hereby reinstated on the docket of claims pending before the Commission.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.



## COMMISSARY DEPARTMENT.

## Christmas Goods.

Christmas toys will be put on sale in the commissary stores at Cristobal, Gatun, Pedro Miguel, Balboa, Ancon, and Empire, beginning Thursday, December 9, 1915.

Christmas tree ornaments will be put on sale in the commissaries at Cristobal, Gatun, Pedro Miguel, Balboa, Ancon, and Empire, beginning Monday, December 13, 1915.

Christmas trees will be put on sale in all commissaries, beginning Monday, December 20, 1915.

Christmas jewelry will be put on sale in commissaries at Ancon, Balboa, and Cristobal, beginning Monday, December 13, 1915.

Christmas candies and cigars will be put on sale at all commissaries, beginning Monday, December 13, 1915.

Christmas cards will be put on sale at all commissaries, beginning Monday, December 6, 1915.

## Collections for Over Weights.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., November 23, 1915.

## BULLETIN No. 455:

To commissary managers—From time to time we have considerable trouble in making additional collections from customers to cover over-weights delivered in filling cold storage orders, particularly orders for food where it is not always possible to deliver the exact weights called for.

It is probable that customers refuse to pay these additional amounts because the situation has not been explained to them thoroughly. They probably do not know that chickens, for instance, of heavier weight than ordered are sent because birds of the exact weight ordered are not on hand. Another source of irritation to them is the fact of their not being advised with the deliveries that additional collections will be called for.

The rule is here laid down that whenever cases of this kind occur, the customer's copy of the order should carry an endorsement to the effect that excess weight has been delivered and additional collection will be as set for. If the above rule is observed and customers still refuse to pay for such excess weights after the matter has been explained to them, they should be advised in writing, copy to this office, that their orders will not be filled in the future, *whenever the exact weight of any item ordered by them, or less, can not be supplied.*

The new C. O. D. slips, form A-418, instructions as to the use of which were embodied in the Auditor's circular to commissary managers, dated November 10, 1915, should be used in making such collections.

This bulletin supersedes bulletin No. 16, dated January 9, 1915.

BENJ. L. JACOBSON,  
Depot Commissary.

Approved:

WM. R. GROVE,  
Chief Quartermaster.

## Royal Society Embroidery Packages.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., November 27, 1915.

## BULLETIN No. 463:

To commissary managers—We have recently received a stock of Royal Society embroidery package outfits, consisting of children's dresses, rompers, combination suits, etc., SN-12155 to 12159, inclusive; 12161 to 12169, inclusive; and 12171 to 12177, inclusive, per additions to stock No. 1182.

The sealed envelopes containing these articles are stamped with the following legend:

NOTICE TO  
COMMISSARY MANAGERS

This package must be sold unopened  
and may not be exchanged.

Please instruct your salesmen to notify all prospective customers that no opened packages will be exchanged under any circumstances.

BENJ. L. JACOBSON,  
Depot Commissary.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire,

Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and other sailing days of Panama Railroad vessels.

## Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective December 2 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list gives retail prices of cold storage provisions which will be effective December 2, 1915. The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts.

## FRESH BEEF.

	Price.
Beef, suet, special, per lb.	\$ .63
Beef, suet, native, per lb.	.04
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.05
Soup bone, special, per lb.	.02
Soup bone, native, per lb.	.02
Stew beef, special, per lb.	.02
Stew beef, native, per lb.	.08
Plate beef, special, per lb.	.12
Beef, native, per lb.	.02
Chuck roast, (3 lbs. up), special, per lb.	.16
Chuck roast, (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (3 lbs. up), special, per lb.	.16
Rib roast, 2d cut (3 lbs. up), native, per lb.	.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Port roast, special, per lb.	.20
Port roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse steak, choice, per lb.	.31
Porterhouse steak, special, per lb.	.26
Porterhouse steak, native, per lb.	.18
Chuck steak, special, per lb.	.13
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.23
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.12
Porterhouse steak (11 lbs. up), choice, per lb.	.34
Porterhouse steak (11 lbs. up), special, per lb.	.23
Porterhouse steak (11 lbs. up), native, per lb.	.17
Porterhouse steak, short, choice, per lb.	.20
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.20
Tenderloin steak, western, special, per lb.	.27

## FRESH MEATS.

Lamb chops, per lb.	.29
Lamb chops, shoulder, per lb.	.20
Lamb, legs, 5 to 8 lbs., per lb.	.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs. per lb.	.15
Lamb, stewing, per lb.	.12
Mutton chops, short cut, per lb.	.23
Mutton chops, shoulder, per lb.	.23
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.09
Pork hams, fresh (see footnote), per lb.	.25
Pork loins, chops, or roast, per lb.	.24
Pork, shoulders, fresh (see footnote), per lb.	.20
Pork, chops, per lb.	.20
Veal chops, shoulder, per lb.	.27
Veal culets, per lb.	.45
Veal, loin for roasting, per lb.	.40
Veal, shoulder for roasting, not under 4 lbs., per lb.	.20
Veal, stewing, per lb.	.16

## MISCELLANEOUS.

Brains, calves', per lb.	.07
Calves' heads, ea.	.78

Kidneys, beef, per lb.	.09
Livers, beef, per lb.	.09
Livers, calves', per lb.	.26*
Pates de foie gras, jar.	.67
Pigs' feet, fresh, per lb.	.05
Pigs' head, fresh, per lb.	.29
Pigs' heads, fresh, 1 head, half.	.42
Sausage, bologna, per lb.	.12
Sausage, frankfurter, per lb.	.14
Sausage, liverwurst, per lb.	.10
Sausage, pork, per lb.	.23
Sausage, pork, homemade, per lb.	.24
Sausage, Salami, per lb.	.29*
Spars ribs, pork, per lb.	.29
Steak, hamburger, p k	.17
Steak, hamburger, 20-pound container, per lb.	.14
Sweet bread, beef, per lb.	.18
Tails, ox, per lb.	.18
Tongue, beef, native, whole, per lb.	.20
Yeast, per lb.	.31
Yeast, cake.	.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.30
Bacon, breakfast, sliced, per lb.	.31
Bacon, sliced, per lb.	.30
Bacon, sliced, tin.	.19
Bacon, squares, whole square, per lb.	.19
Bacon, strips, whole strip.	.20
Beef, corned—No. 1, per lb.	.12
Beef, corned—No. 2, per lb.	.12
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.13
Ham, shoulder, boneless, sugar cured, whole shoulder, per lb.	.17†
Ham, sugar cured (whole) per lb.	.24
Ham, sugar cured (half) per lb.	.27
Ham, sugar cured (sliced) per lb.	.32
Ham, sugar cured, boiled (whole) per lb.	.29†
Ham, sugar cured, boiled (half)	.32†
Ham, sugar cured, boiled (sliced)	.37†
Hot, fresh, pickled, per lb.	.11
Pork, bellies, per lb.	.20*
Pork, clear, per lb.	.11
Pork, standard mess, per lb.	.11
Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs', per lb.	.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	.31
Broilers, milk fed, per lb.	.34
Capons, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.28
Chickens, fancy roasting, milk fed, per lb.	.33
Ducklings, per lb.	.26*
Fowls, light, per lb.	.25
Fowls, western, dry picked, per lb.	.23
Geese, per lb.	.40
Grouse, ea.	.60
Squabs, ea.	.45
Turkeys, per lb.	.32

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	.44*
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.43*
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edna, et.	.39
Cheese, Eдам, tin	.39
Cheese, Gouda, per lb.	.32
Cheese, Parmesan, per lb.	.39
Cheese, Philadelphia, per lb.	.39
Cheese, Roquefort, per lb.	.45
Cheese, snappy, cake.	.09
Cheese, Swiss, per lb.	.40
Cheese, Young, per lb.	.42
Cream, 30 per cent, 1/2 pt.	.17**
Cream, 30 per cent, pt.	.20**
Cream, 30 per cent, qt.	.52**
Eggs, fresh, per doz. (only)	.26*
Fer-mil-lac, bottle.	.25**
Ice cream, (see footnote) qt.	.25†
Ice cream, (see footnote) 1/2 gal.	.25†
Milk, Sheffield farms, qt.	.15**
Oleomargarine, per lb. carton.	.29

## FISH.

Bluefish, fresh, per lb.	.19
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.11
Halibut, fresh, per lb.	.11
Herring, smoked, per lb.	.11
Oysters, fresh, per qt.	.36*
Salmon, fresh, per lb.	.30
Whitefish, smoked, per lb.	.18

## VEGETABLES.

Beets, per lb.	.02
Brussels sprouts, per lb.	.19
Cabbage, per 10.	.01
Carrots, per lb.	.02
Chicory, per lb.	.02
Celery, per head.	.15
Chocho, each.	.02
Cucumbers, per lb.	.13
Scallions, per lb.	.12
Lettuce, per lb.	.15*
Onions, per lb.	.03†
Parsnips, per lb.	.02
Peppers, green, per lb.	.12
Plantains, p r doz.	.02
Potatoes, white, per lb.	.03*
Potatoes, sweet, per lb.	.02
Squash, per lb.	.14
Squash, fancy, per lb.	.08
Tomatoes, per lb.	.07
Turnips, per lb.	.01
Yams, luca, per lb.	.03



## FRUITS, DRIED.

Apples, evaporated, per lb.	Price.
Apples, fresh, select, per lb.	.14
Apples, 8 hands and over, per bunch.	.40
Bananas, 6 hands and over, per bunch.	.28
Bananas, 6 and 7 hands, per bunch.	.28
Bananas, ea.	.06
Cocconuts, ea.	.09
Cranberries, per lb.	.09
Grapes, Malaga and Tokay, per lb.	.15
Grapefruit, select, ea.	.09
Grapefruit, tropical, ea.	.03
Lemons, per doz.	.13
Limes, per 100.	.25
Oranges, select, per doz.	.04
Oranges, tropical, per doz.	.12
Pears, fresh, per lb.	.08

## FRUITS, FRESH.

Apples, fresh, per lb.	.04
Apples, fresh, select, per lb.	.05
Bananas, 8 hands and over, per bunch.	.40
Bananas, 6 and 7 hands, per bunch.	.28
Bananas, ea.	.06
Cocconuts, ea.	.09
Cranberries, per lb.	.09
Grapes, Malaga and Tokay, per lb.	.15
Grapefruit, select, ea.	.09
Grapefruit, tropical, ea.	.03
Lemons, per doz.	.13
Limes, per 100.	.25
Oranges, select, per doz.	.04
Oranges, tropical, per doz.	.12
Pears, fresh, per lb.	.08

\* Indicates advance from preceding list.

\* Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective November 25:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Batiste, charrene, yd.	\$0.18	\$0.12
Corsets, ea.	.89	.68
Corsets, ea.	2.45	1.90
Cloth, lace, yd.	.16	.12
Creme, Madura, yd.	.15	.10
Creme, M. A. F., yd.	.20	.15
Hose, children's, pr.	.20	.12
Hose, children's, pr.	.12	.17
Mousseline, yd.	.16	.12
Parasols, ea.	1.00	.75
Parasols, ea.	1.35	.75
Pique, colored, yd.	.22	.16
Pique, colored, yd.	.19	.12
Extract, raspberry, 4-oz. bot.	.21	.15
Oil, salad, 1-gal. tin	.43	.36
Oil, salad, 1-gal. tin	.70	.90
Oil, salad, P. C., bot.	.20	.23
Pears, tin.	.52	.65
Cigarettes, Richmond Straight Cut.	.16	.15
Tobacco, Velvee, tin	.52	.48
Boxes, bread, ea.	.54	.48
Brushes, varnish, 1 1/2, ea.	.41	.48
Brushes, varnish, 2 1/2, ea.	.59	.64
Buckets, ea.	.35	.30
Colanders, ea.	.17	.14
Dishes, fern, ea.	2.40	2.60
Dishes, fern, ea.	1.25	1.35
Dishes, fern, ea.	1.65	1.90
Freezers, ice cream, ea.	3.30	3.00
Nappies, ea.	.05	.03
Pans, bread, ea.	.15	.11
Pans, muffin, ea.	.27	.20
Rules, zig zag, ea.	.55	.22
Sets, tables, set.	.51	.45
Scissors, 8 1/2, pr.	.45	.41
Tire, picture, roll.	.33	.43
Bags, fitted, ea.	16.65	15.00
Boxes, collar, ea.	1.15	1.35
Cases, brush, fitted, ea.	1.95	2.15
Cases, suit, ea.	16.65	20.50
Mirrors, traveling, ea.	1.70	2.25
Mirrors, traveling, ea.	1.70	2.25
Shoes, men's, pr.	3.75	3.00
Shoes, men's, pr.	3.80	4.00
Shoes, men's, pr.	3.45	5.25
Soles, hemlock, pr.	.40	.25
Brushes, hair, ea.	.64	.75
Urliup, yd.	.11	.14
Creme, barba, yd.	.14	.10
Creme, L. T. J., yd.	.16	.10
Kuickerbockers, pr.	.88	1.20
Cases, corset, ea.	.03	.04
Paper, writing, set.	.18	.18
Poplin, yd.	.18	.17
Serge, cream, yd.	2.00	2.25
Sets, table, linen, set.	6.50	6.00
Sets, table, linen, set.	7.50	7.00
Shirts, negligee, ea.	1.10	.75
Shirts, negligee, ea.	3.10	1.50
Shirts, wool, ea.	3.00	3.70
Suits, bathing, suit.	2.40	2.25
Suits, bathing, suit.	.92	1.05
Chocolates, assorted, Lowney's, 1 lb.	.31	.33
Chocolates, assorted, Lowney's, 1 lb.	.59	.63
Ketchup, tomato, 1-gal. jar.	.75	.75
Matches, pkg.	.04	.05
Rice, first grade, lb.	.06	.07

## Additions to Stock.

Glasses:	
Sherry, No. 853, ea.	\$0.13
Sherry, No. 855, ea.	.12
Cordial, No. 856, ea.	.11
Sauces, champagne, No. 858, ea.	.15
Creme de Menthe, No. 860, ea.	.13
Milk punch, No. 440, ea.	.08
Split beer, No. 446, ea.	.06
Large beer, No. 372, ea.	.16
Side water, No. 380, ea.	.06
Stove, No. 82, ea.	.11
Stove, disc, electric, 6 1/2, 3-heater, ea.	5.30
Cloth, marquette, striped, No. 1912, yd.	.12
Cloth, marquette, striped, No. 1920, yd.	.14
Cloth, shantung, yd.	.24
Ribbon, black velvet, No. 8, yd.	.20
Ribbon, black velvet, No. 9, yd.	.19
Rompers, boys', suit.	.43
Voile, lace, striped, yd.	.25
Corsets, batiste, lace front, ea.	2.65
Corsets, maternity, lace, trimmed, ea.	1.55
Corsets, embroidered, trimmed, lace front.	1.55
Embroidery:	
Stickered wash veining, 3-yd., piece.	.07
Stickered wash veining, 6-yd., piece.	.35
Stickered wash veining, 6-yd., piece.	.35
Stickered wash insertion, 6-yd., piece.	.73
Stickered wash edging, 6-yd., piece.	.36
Barmen, 6-yd., piece.	.12
Barmen, 6-yd., piece.	.26
Barmen, 6-yd., piece.	.34
Barmen, 6-yd., piece.	.05
Barmen, yd.	.10
Stickered wash edging, 6-yd., piece.	.10
Stickered wash edging, 6-yd., piece.	.09
Swiss gallow bending, 2 1/2, yd.	.12
Swiss gallow bending, 1 1/2, yd.	.10
Swiss gallow bending, 1 1/2, yd.	.12
Swiss embroidered bending, 2 1/2, yd.	.10
Baby French val lace edging, yd.	.05
Baby French val lace edging, yd.	.03
Handkerchiefs, men's set of 3.	.23
Pants, Bry Scout, pr.	1.15
Serge, cream, 27 1/2, yd.	1.15
Shirts, Boy Scout, ea.	1.05
Hair, Baldpat, bot.	.67
Extract, raspberry, P. C., 8-oz. bot.	.25
Lentils, Egyptian, lb.	.13
Kotton cigarettes, packet of 20.	.04
Cigars, Havana:	
Conchas, ea.	.07
Londres, ea.	.15
Formidables, ea.	.19
Salomenes, ea.	.22
Cigars, Bella Vista:	
Reina Victoria, ea.	.03
Londres, ea.	.10
Conchas, ea.	.03
Brevas, ea.	.04
Fumas, ea.	.04
Aprons, tea, white lawn, ea.	.21
Aprons, tea, white cross bar lawn, ea.	.21
Aprons, embroidered, ea.	.25
Aprons with bib, 45" by 60", ea.	.39
Aprons with bib, 45" by 48", ea.	.39
Bedspreads, hemstitched and embroidered	8.70
Bedspreads, hemstitched and embroidered	8.70
Bedspreads, hemstitched and embroidered	4.35
Cloths, tea, hemstitched and embroidered,	2.00
Cloths, tea, hemstitched and embroidered,	1.50
Cloths, tea, hemstitched and embroidered, 45"	1.50
Corsets, American Lady, ea.	.89
Handkerchiefs, ladies', set of three.	.22
Hooks and eyes, pants, No. 2, doz.	.06
Hooks and eyes, pants, No. 3, doz.	.06
Hooks and eyes, Swan Bill, Nos. 3 and 4, doz.	.10
Links, cuff, gold plated, pr.	1.20
Napkins, scalloped and embroidered, 15", ea.	.20
Napkins, scalloped and embroidered, 15", ea.	.16
Napkins, scalloped and embroidered, 15", ea.	.16
Soap, Verbena, cake.	.08
Tape, black, 10 yds., 1/2, piece.	.04
Tape, black, 10 yds., 1/2, piece.	.05
Tape, black, 10 yds., 1/2, piece.	.07
Tape, black, 10 yds., 1/2, piece.	.08
Tape, black, 10 yds., 1/2, piece.	.08
Tape, black, 10 yds., 1/2, piece.	.08
Carriers, dinner, 4-compartment, ea.	\$0.32
Dishes, oatmeal, G-4772, ea.	.20
Dishes, baker's, meakin, 10", each.	.14
Extractors, juice, ea.	.20
Foris, table, Windsor, ea.	.20
Glasses, sherry, ea.	.11
Glasses, cordial, ea.	.09
Glasses, cocktail, ea.	.12
Glasses, saucer champagne, ea.	.33
Jugs, cream, G-4772, ea.	.33
Jugs, cream, D-3471, ea.	.33
Knives, table, Windsor, ea.	.25
Knives, dessert, Windsor, ea.	.25
Pans, pudding, aluminum, 8 1/2, ea.	.51
Pans, pudding, aluminum, 8 1/2, ea.	.51
Pans, cake, aluminum, 9", ea.	.26
Pans, cake, aluminum, 9", ea.	7.50
Pipes, briar, amber and silver, ea.	4.50
Pipes, briar, amber and silver, ea.	2.00
Plates, breakfast, G-4772, ea.	.30
Spoons, table, Windsor, ea.	.18
Spoons, dessert, Windsor, ea.	.18
Spoons, table, Windsor, ea.	.10

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions until January 1, 1916, are given in this table:

## DECEMBER.

DATE.	Time and height of high and low water.		
	Time	Height	Time
Wed., Dec. 1.....	4:26	10:19	22:53
Thurs., Dec. 2.....	5:25	11:17	23:52
Fri., Dec. 3.....	6:23	12:10	18:39
Sat., Dec. 4.....	0:49	7:16	13:20
Sun., Dec. 5.....	1:42	8:07	14:20
Mon., Dec. 6.....	2:33	8:57	15:10
Tues., Dec. 7.....	3:23	9:46	15:59
Wed., Dec. 8.....	4:12	10:36	16:48
Thurs., Dec. 9.....	5:01	11:24	17:37
Fri., Dec. 10.....	5:51	12:14	18:28
Sat., Dec. 11.....	0:40	6:43	13:08
Sun., Dec. 12.....	1:34	7:33	13:56
Mon., Dec. 13.....	2:31	8:35	14:52
Tues., Dec. 14.....	3:32	9:40	15:53
Wed., Dec. 15.....	4:34	10:42	16:53
Thurs., Dec. 16.....	5:39	11:45	17:53
Fri., Dec. 17.....	0:27	6:38	13:11
Sat., Dec. 18.....	1:23	7:33	14:05
Sun., Dec. 19.....	2:12	8:21	14:51
Mon., Dec. 20.....	3:03	9:03	15:31
Tues., Dec. 21.....	3:53	9:45	16:07
Wed., Dec. 22.....	4:45	10:27	16:48
Thurs., Dec. 23.....	5:39	11:07	17:25
Fri., Dec. 24.....	6:34	11:45	18:00
Sat., Dec. 25.....	7:29	12:21	18:26
Sun., Dec. 26.....	8:24	12:55	18:50
Mon., Dec. 27.....	9:18	13:27	19:13
Tues., Dec. 28.....	10:12	14:01	19:36
Wed., Dec. 29.....	11:06	14:26	19:59
Thurs., Dec. 30.....	12:00	14:51	20:22
Fri., Dec. 31.....	12:54	15:16	20:45

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic Survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Taboga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p. m.; Monday, Thursday, Saturday, and Sunday, at 9.40 a. m.

Leave Taboga—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier); Monday, Thursday, and Saturday at 1.30 p. m.; Sunday at 7.15 p. m. The 9.40 a. m. trips from Balboa await the arrival of Panama Railroad trains. There will be no 5.30 p. m. trip from Balboa on Sundays and holidays, unless the number of guests desiring transportation from Taboga exceeds the number that the launch is able to take in one trip; in which case a trip will be started from the Aspinwall landing at 3 p. m., reaching Balboa in time to leave again at 5.30.

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., November 28, 1915.)

There were no vessels entering the Canal during the week for transit.

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Nov. 20...	Covina	Elders & Fyffes	Limón.	Nov. 20...	Covina	Elders & Fyffes	Bristol.
Nov. 21...	Waco	Earn Line	Norfolk.	Nov. 22...	Thos	Johnson Line	Rio Janeiro.
Nov. 22...	J. L. Luckenbach	Luckenbach Line	New York.	Nov. 23...	Professor	Harrison Line	Galveston.
Nov. 28...	Napierian	Leyland Line	Liverpool.	Nov. 24...	J. L. Luckenbach	Luckenbach Line	New York.
Nov. 29...	Puerto Rico	French Line	Bordeaux.	Nov. 28...	Wegadesk	Earn Line	Felton, Cuba.
Nov. 29...	Siena	Italian Line	Genoa.				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Dec. 1....	Rosalie Mahony	Olson & Mahony	Gulfport.	Dec. 1....	Siena	Italian Line	Genoa.
Dec. 4....	Camito	Elders & Fyffes	Limón.	Dec. 2....	Puerto Rico	French Line	Bordeaux.
				Dec. 2....	Napierian	Leyland Line	Unknown.
				Dec. 4....	Comito	Elders & Fyffes	Bristol.
				Dec. 4....	Lewis Luckenbach	Luckenbach Line	New York.
				Dec. 4....	J. L. Luckenbach	Luckenbach Line	New York.
				Dec. 4....	Rosalie Mahony	Olson & Mahony	New York.

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

## PORT OF BALBOA.

*ARRIVALS.				DEPARTURES.			
Nov. 23...	Coaster	C. H. Higgins	San Francisco.	Nov. 22...	Henrik	Bruusgaard Kiøsterud	Montevideo.
Nov. 23...	Urubamba	Peruvian Line	Callao.	Nov. 22...	Herry Luckenbach	Luckenbach Line	San Francisco.
Nov. 24...	Corib II	Robert Wilcox	Panama.	Nov. 23...	Polena	South American S. S. Co.	Valparaiso.
				Nov. 23...	Merrill Dollar	Dollar Line	Callao.
				Nov. 23...	Salvador	Salvador Railway Co.	Tahoga.
				Nov. 26...	Coaster	C. H. Higgins	San Francisco.
				Nov. 27...	San Diego (dredge)	Standard Dredge Co.	Pedro Miguel.
				Nov. 28...	Monari	Pacific Steam Nav. Co.	Guayaquil.
				Nov. 28...	Newport	Pacific Mail S. S. Co.	San Francisco.
				Nov. 28...	Peru	Pacific Steam Nav. Co.	Guayaquil.

\*Including vessels arriving for transit through the Canal

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

					Jamaica	Pacific Steam Nav. Co.	Tumaco.
					Urubamba	Peruvian Line	Callao.
					Corib II	Robert Wilcox	

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, November 27, 1915:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun	Gatun Lake	Miraflores Lake.
Sun., Nov. 21.....	130.55	95.68	85.57	85.54	54.20
Mon., Nov. 22.....	128.40	94.34	85.57	85.54	54.29
Tues., Nov. 23.....	127.50	93.59	85.58	85.53	54.17
Wed., Nov. 24.....	128.70	94.25	85.62	85.53	54.25
Thurs., Nov. 25.....	127.80	93.73	85.57	85.54	54.35
Fri., Nov. 26.....	127.50	93.49	85.59	85.52	54.23
Sat., Nov. 27.....	127.25	93.24	85.55	85.54	54.20
Heights of low water to nearest foot.....	125.0	91.0			

## Fuel and Supplies.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 50 shillings per ton of seven barrels. Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

All standard lubricants, light and heavy hardware, cordage, and miscellaneous ship chandlery supplies are sold from the storehouses at Cristobal and Balboa.

Ice may be obtained in any reasonable quantity. The price is 33 cents per 100 pounds at either Cristobal or Balboa.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., December 1, 1915.  
The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon application of the addressee:

Alkem, Grover	Lelever, Wm. R.
Arnold, Aden D.	Long, Ethel
*Brennan, Sam	Lord, Geo. E.
Carriethers, Mrs. T. W.	Maeler, L. A.
*Duprey, Frederick	Meaney, Jas. F.
Eckles, Dr. L. S.	Parrish, Horace
Evans, Lawrence C.	Presday, Nicolas
Flowers, J. L.	Raughtbottom, Dr. T. J.
Goldstein, S.	Smith, Milton A.
Humphrey, Mrs. James	Summerville, Dossie May
Humphries, Herbert	*Telgarden, Geo.
Johnson, J. C.	Threatt, Robert
Kemble, Gilbert	Traylor, Andrew
Kent, Richard	Tul, Clarence E.
King, Lee M.	*Webber, B. C.
Laurence, William	Wheatcroft, W. T.

FOR THE WEEK ENDING NOVEMBER 24.  
Campbell, Byron T. Kelsa, Pvt. Ed T.  
Campbell, H. M. Mason, August P.  
Carriethers, Mrs. T. W. Neisker, Herman  
Downing, J. S. Peterson, Capt. Wm.  
Gill, William B. Sawyer, G.  
Green, Elwyn Torrell, George  
Haag, A. White, J. Arthur  
Haynes, John C. Williams, Geo. F.  
Heald, Harold W. Williams, Mrs. Geo. F.  
Wooten, Orbury

## \* Card.

## Sailings of Vessels in Regular Service with the United States.

Vessel	Line	Sails	Arrives
Santa Marta	U. F. C.	Nov. 24	Dec. 1
Advance	P. R. R.	Nov. 26	Dec. 3
Metapan	U. F. C.	Nov. 27	Dec. 6
Almirante	U. F. C.	Dec. 1	Dec. 8

Panama	P. R. R.	Dec. 2	Dec. 8
Pastora	U. F. C.	Dec. 4	Dec. 12
Zacapa	U. F. C.	Dec. 8	Dec. 15
Aliancia	P. R. R.	Dec. 9	Dec. 15
Calamares	U. F. C.	Dec. 11	Dec. 19
Carrillo	U. F. C.	Dec. 15	Dec. 22
Colon	P. R. R.	Dec. 16	Dec. 22
Tenadores	U. F. C.	Dec. 18	Dec. 26
Santa Marta	U. F. C.	Dec. 22	Dec. 29
Advance	P. R. R.	Dec. 23	Dec. 30
Metapan	U. F. C.	Dec. 25	Jan. 3

CRISTOBAL-COLON TO NEW YORK			
Colon	P. R. R.	Dec. 2	Dec. 8
Carrillo	U. F. C.	Dec. 2	Dec. 9
Tenadores	U. F. C.	Dec. 6	Dec. 13
Santa Marta	U. F. C.	Dec. 9	Dec. 16
Advance	P. R. R.	Dec. 9	Dec. 16
Metapan	U. F. C.	Dec. 13	Dec. 21
Panama	P. R. R.	Dec. 16	Dec. 22
Almirante	U. F. C.	Dec. 16	Dec. 23
Pastora	U. F. C.	Dec. 20	Dec. 28
Aliancia	P. R. R.	Dec. 23	Dec. 29
Zacapa	U. F. C.	Dec. 23	Dec. 30
Calamares	U. F. C.	Dec. 27	Jan. 4

NEW ORLEANS TO CRISTOBAL-COLON			
Abangarez	U. F. C.	Nov. 27	Dec. 4
Heredia	U. F. C.	Dec. 1	Dec. 6
Atenas	U. F. C.	Dec. 4	Dec. 11
Parismina	U. F. C.	Dec. 8	Dec. 13
Turrialba	U. F. C.	Dec. 11	Dec. 18
Cartago	U. F. C.	Dec. 15	Dec. 20
Abangarez	U. F. C.	Dec. 18	Dec. 25
Heredia	U. F. C.	Dec. 22	Dec. 27
Atenas	U. F. C.	Dec. 25	Jan. 1
Parismina	U. F. C.	Dec. 29	Jan. 3
Turrialba	U. F. C.	Jan. 1	Jan. 8

CRISTOBAL-COLON TO NEW ORLEANS			
Cartago	U. F. C.	Dec. 5	Dec. 10
Abangarez	U. F. C.	Dec. 6	Dec. 13
Heredia	U. F. C.	Dec. 12	Dec. 17
Atenas	U. F. C.	Dec. 13	Dec. 20
Parismina	U. F. C.	Dec. 19	Dec. 24
Turrialba	U. F. C.	Dec. 22	Dec. 27
Cartago	U. F. C.	Dec. 26	Dec. 31
Abangarez	U. F. C.	Dec. 27	Jan. 1
Heredia	U. F. C.	Dec. 27	Jan. 8
Atenas	U. F. C.	Dec. 31	Jan. 10





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications.

THE CANAL RECORD.

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Excavation Records During Past Week.

Excavation from the bases of the slides on the east and west banks of the Canal at Culebra, blocking the channel, amounted to 260,480 cubic yards during the week ending at 6 a. m., Tuesday, December 7. Other excavation from the Cut amounted to 40,774 cubic yards, making the total amount of spoil removed by the dredging fleet during the week amount to 301,254 cubic yards, exclusive of rehandling. The work of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Casadas.....	15-yard dipper.....	89,315
Gambou.....	15-yard dipper.....	67,490
Paraiso.....	15-yard dipper.....	71,975
Corozal.....	Ladder.....	31,700
No. 80.....	Pipeline suction.....	29,500
Culebra.....	Seagoing suction.....	25,294

The average excavation per week for the six weeks preceding that ending at 6 a. m., Tuesday, December 7, was 263,906 $\frac{1}{2}$  cubic yards, the aggregate during that period having been 1,613,440 cubic yards.

#### Dry Dock Gates Nearing Completion.

The mitre gates for the 1,000-foot dry dock at Balboa are approaching completion. The south leaf of the gate was swung on its pintle-and-yoke hinge on November 27. The work on the north leaf is about four weeks behind that on the south leaf, so it is anticipated that the second leaf will be swung before the end of this month. Except for their greenheart mitre and quoin posts, the leaves are exactly like leaves of the lock gates, will be maintained from the same stock of spare parts, and are swung and operated in the same manner. In the case of the dry dock gate, however, the

leaves will be supported on carriages, running on the floor, when swung in the dry, to avoid severe strains on the pintle and anchorage. The carriages for the dry dock leaves run on curved steel rails, embedded in the masonry of the floor.

Work is now in progress for the adjustment of greenheart mitre and quoin posts on the south leaf. During the adjustment of these it will be necessary to swing the leaf in the dry, and it was for these operations principally that the carriages were devised. In the construction of the lock gate leaves the mitre and quoin posts were made of steel castings, to which bearing surfaces were attached and planed in place. The method was described in THE CANAL RECORD of August 6, 1913. The greenheart timber posts were adopted for the dry dock gate principally on account of the greater degree of watertightness anticipated, which is of more importance in a dry dock which stands dry for the greater portion of the time. The bearing is between greenheart and granite at the quoins and sills, and between greenheart and greenheart at the mitres.

#### Beginning Work on Pumping Plant for Dry Dock.

In preparation for the installation of the pumping equipment in the new dry dock under construction at Balboa, a representative of Henry R. Worthington, of Harrison, N. J., contractor for the equipment, arrived on the Isthmus on Friday, December 3, to supervise its installation. Parts of the material have arrived from the United States and erection of the piping and parts embedded in concrete will be proceeded with at once.

The pumping plant will consist of four 54-inch main centrifugal pumps, two 20-inch drainage pumps, a 3-inch bilge pump and two high-pressure pumps, furnishing water under pressure of 300 pounds per square inch for operating the main and drainage pump valves. The pumps are all motor-driven, and the necessary motors, switchboards, and wiring are included in the plant and will be located in the building to be erected over the pump well.

#### Progress on Pacific Terminal Office Building.

All of the piles for the foundation for the Pacific terminal office building, a three-story concrete structure to be erected at the head of the slip between the quay wall and Pier 18, have been driven, and the pouring of concrete for foundations and walls was begun last week.

#### The "Ajax" Taken to Permanent Mooring Station.

The 250-ton floating crane Ajax, which has been working at the north end of the Cut in varied work of repair on the floating equipment on the north side of the obstruction in the Canal channel since its first principal use in assembling the parts of the new dredge Casadas, was transferred last week to the

permanent mooring station provided about half a mile to the north, which is on the east bank of the Canal about a hundred yards north of the railroad station at Gamboa. Piles for mooring the crane have been driven and suitable landing facilities have been provided.

#### Clearance in Locks for New Battleships.

The battleships Idaho, Mississippi, and California, which are now under construction for the United States Navy and will be its largest ships, will have a beam of 97 feet four inches. These vessels, in passing through the Canal, will have a clearance of 12 feet eight inches in the chambers of the locks, which are 110 feet wide. This is equivalent to six feet four inches on each side if the ship were centered perfectly. The vessel of the greatest beam to have passed through the Canal up to this time is the battleship Ohio, with a beam of 72 feet; the next greatest is the Naval collier Jupiter, with a width of 65 feet. The Finland and the Kroonland are 60.2 feet in the beam; the Manchuria and the Mongolia, which would have passed through the Canal except for the slides, are 65 feet in the beam. These last-named ships have the same length as the new battleships, 600 feet; the Finland and the Kroonland are 560 feet in length. The proposed draft of the new battleships, 30 feet, is not greater than that of some vessels which have gone through the Canal. The Idaho, Mississippi, and California will each displace 32,000 tons. The Missouri, Ohio, and Wisconsin, which passed through the Canal on the outward and homeward voyages of the Naval Academy midshipmen's practice cruise, and were first line battleships eight years ago, have displacements, respectively of 13,450, 13,900, and 12,830 tons.

#### Telephone Directory of The Panama Canal.

A telephone directory of The Panama Canal and the Panama Railroad, carrying the names of phoneholders as of December 1, 1915, has been issued from the Panama Canal Press at Mount Hope, to be ready for distribution the early part of next week. This is the first directory issued since The Panama Canal succeeded the Isthmian Canal Commission, and extensive changes in organization and location of offices had rendered the previously current directory obsolete and a new directory much in demand. The directory lists holders by departments and divisions of the organization, including the various branches of the Army, and in an additional list gives the names of individuals in alphabetical order. Office and residence telephones are designated in parallel columns.

In a page and a half of introductory explanations the user of the directory is given instructions and suggestions designed to facilitate the service. On the back cover is a diagram illustrating the connections through the principal exchanges and the private branch exchanges.



## ORIGIN OF CANAL FUNDS.

Proportions of Bond Issues and Expenditures  
Direct from Treasury.

Inquiry has been received as to the origin of the funds spent for the construction, maintenance, etc., of the Canal, and as to the proportions of the funds raised by bond issues and those taken direct from the Treasury.

The Act of Congress of June 28, 1902, authorized the Secretary of the Treasury to sell two per cent 10-year bonds to the extent of \$130,000,000. To the end of the fiscal year 1908, the sum of \$84,631,980 had been raised under the provisions of this act; by the act of August 5, 1909, Congress authorized the sale of three per cent, 50-year bonds to the amount of \$295,569,000, which amount, with the \$84,631,980 previously raised from bonds, equaled the estimate made at that time by the Isthmian Canal Commission to cover the entire cost of the Canal from its inception to its completion, that is, \$380,200,980.

Though authority was given for the sale of bonds as above, the actual sales have amounted to \$134,631,980. All other funds for the Canal have been taken direct from the surplus in the Treasury.

Of the 10-year, two per cent bonds, \$54,631,980 worth was sold in the latter part of 1906 (fiscal year 1907), to mature after August 1, 1916; and \$30,000,000 worth was sold in 1908, to mature after November 1, 1918. In the fiscal years 1911 and 1912 was floated \$50,000,000 worth in an issue of the 50-year, three per cent bonds, to mature June 1, 1961. The par value of the aggregate sales in the three issues was \$134,631,980. The issue of \$54,631,980 at two per cent sold at an average of \$103.513 per \$100 of face value; the issue of \$30,000,000 at two per cent sold at \$102.436; and the issue of \$50,000,000 at three per cent sold at \$102.582. The total proceeds from the bonds, on a face value of \$134,631,980, were \$138,600,869.02.

The report of the Secretary of the Treasury for the fiscal year 1915 has not been received. To the close of the fiscal year, or June 30, 1914, the total disbursements for the Canal from the Treasury amounted to \$353,052,924.10. As of this amount, \$138,600,869.02 was the proceeds of bond sales, the remainder, \$214,452,055.08 is the amount which had been taken direct from funds available in the surplus in the Treasury.

The proceeds of sales of bonds and the disbursements on account of the Panama Canal to the close of the fiscal year 1914 (the report of the Secretary of the Treasury for 1915 has not been received) are set forth by years in the following table:

Fiscal year.	Proceeds of United States bonds sold.	Disbursements for Panama Canal.	Excess of	
			Receipts.	Disbursements.
1904.....	.....	\$50,174,485.00	.....	\$50,174,485.00
1905.....	.....	3,918,819.83	.....	3,918,819.83
1906.....	.....	19,379,373.71	.....	19,379,373.71
1907.....	\$31,210,817.95	27,196,018.71	\$4,014,199.24	.....
1908.....	25,367,768.67	38,093,425.29	.....	12,725,656.62
1909.....	30,731,008.21	31,419,442.41	.....	688,434.20
1910.....	.....	33,911,673.37	.....	33,911,673.37
1911.....	18,102,170.04	37,063,515.33	.....	18,961,345.29
1912.....	33,189,104.15	35,327,370.66	.....	2,138,266.51
1913.....	.....	41,741,258.03	.....	41,741,258.03
1914.....	.....	34,826,941.76	.....	34,826,941.76
Total.....	\$138,600,869.02	\$353,052,924.10	\$4,014,199.24	\$218,466,254.32
Net.....	.....	.....	.....	\$214,452,055.08

## WEATHER CONDITIONS, CANAL ZONE, NOVEMBER, 1915.

The rainfall for the month was above normal at five stations, and below normal at 13 stations. Monthly totals ranged from 24.27 inches at Monte Lirio, to 7.05 inches at Balboa Heights. The maximum precipitation recorded on any one day was 3.71 inches, at Colon on November 27. The estimated rainfall over the Gatun Lake watershed was 16 per cent below normal, or 16.13 inches against a 15-year mean of 19.27 inches.

The average air temperature was approximately normal on the Pacific coast, and almost two degrees Fahrenheit above normal on the Atlantic, while the atmospheric pressure and day-time cloudiness were slightly above the average. The wind movement and evaporation were generally deficient, while the temperature of the seawater was above normal on both coasts. The relative humidity of the atmosphere was four per cent above the average on the Pacific coast and normal on the Atlantic.

Night and early morning fogs were numerous at interior stations. Of the fogs observed, 77 per cent were dissipated by 6:30 a. m., 90 per cent by 7:30 a. m., and all fogs lifted or were dissipated by 8:30 a. m.

The elevations of Gatun Lake, in feet above mean sealevel, were as follows: Mean for the month, 85.35; maximum, on the 1st, 86.18; minimum, on the 9th, 84.96; evaporation from lake surface, 3.564 inches.

The following is a summary of meteorological conditions at the Atlantic and Pacific ends of the Canal Zone during November:

STATIONS.	Pressure (reduced to mean of 24 hours).	Temperature.				Precipitation.				Wind.			
		Mean.	Maximum.	Date.	Minimum.	Date.	Mean relative humidity.	Total inches.	Station average.	Days of all inch or more.	Total movement (miles).	Prevailing direction.	Max. velocity in miles.
Colon.....	29.854	80.4	89	Nov. 3	74	Nov. 27	90	22.33	21.68	27	5,354	S. E.	30
*Balboa Heights...	29.852	78.8	87	Nov. 11	79	Nov. 11	96	7.05	10.27	24	3,966	N. W.	24

\*Formerly Ancon.

## Red Cross Statement.

The following is the financial statement of the Canal Zone Chapter, American National Red Cross, for the period from July 1 to October 31, 1915:

RECEIPTS.		Rations furnished Colon fire refugees.....	
Balance July 1, 1915.....	\$5,214.04	Rations furnished Colon fire refugees.....	321.39
Donation from Tivoli Club.....	44.00	Rations furnished Colon fire refugees.....	64.08
P. R. R. bill No. 50241 cancelled, amount refunded.....	1,815.71	Rations furnished Colon fire refugees.....	1,597.84
Aug. 1 From employees of Balboa. Port Captain's office.....	10.00	Aid to refugee mothers—clothing.....	10.00
Dr. Watts, annual dues.....	1.00	July 21 Relief of American seaman Relief of American's widow and children.....	100.00
Additional collections by Lady Mallet and Mrs. Porras.....	135.70	Aug. 1 Supplies furnished Colon fire refugees, June.....	139.13
Sept. 7 Payment of loan by Geo. W. Husted.....	50.00	Supplies furnished Colon fire refugees, July.....	6.26
Sept. 11 Sale Casino tickets, Tivoli Club.....	3.00	Relief Porto Rican family. Membership dues remitted Transportation American woman and child to New Orleans.....	2.00
Sale Casino tickets, University Club.....	65.00	Relief of former Canal employee. Blankets for Colon fire refugees.....	10.00
Oct. 15 Sale Casino tickets, Century Club.....	104.00	Additional amount to American woman and child.....	7.50
Additional collections by Lady Mallet and Mrs. Porras.....	199.75	Board paid for two Spanish canal employees, deported.....	12.70
Payment of loan for Mrs. Neely by payroll deduction.....	25.00	Supplies furnished refugees, August.....	7.46
Officers' mess, 29th Infantry.....	40.00	Oct. 1 Relief Spanish woman and children.....	15.00
Interest.....	.....	Rations furnished, Sept.....	9.09
On account to Aug. 36.35	.....	Postage.....	1.61
On account to Nov. 34.50	.....	Relief of American.....	5.00
Total interest.....	70.85	Total.....	\$2,591.02
Total.....	\$7,778.05	Balance, Nov. 1, 1915.....	5,187.03
DISBURSEMENTS.		T. L. CLEAR, Treasurer.	
July 7 Relief of American.....	5.00		
Revenue stamps.....	.10		

Approved:  
C. A. McILVAINE,  
Chairman.

## Caps of Straw for Passenger Train Officers.

Caps of braided straw for the conductors and collectors on the passenger trains of the Panama Railroad have been placed on sale at the Cristobal and Ancon commissary stores, selling at 95 cents each. The straw caps will become a part of the regular uniform, and the present blue cloth cap is to be discarded. The new cap is varnished dark brown, with black visor, and is light and well ventilated.

## QUARTERS FOR BACHELORS.

Three-story Concrete Building Being Erected in Ancon, Overlooking De Lesseps Park.

As a part of the construction of permanent quarters of The Panama Canal and the Panama Railroad, a three-story concrete building to furnish commodious quarters for bachelors is being erected in Ancon. It will contain 45 rooms, each 12 by 13 feet in plan and designed for the accommodation of one man, and will be finished with more regard for comfort and appearance than has been used in the construction of other bachelor quarters on the Isthmus, excepting possibly those in the Panama Railroad station at Panama.

The site of the building lies about midway between the Ancon post-office and the Tivoli Hotel, directly to the west or Canal Zone side of the road which forms the boundary line between the Republic of Panama and the Canal Zone. The building will be erected to the north of the Masonic Temple, which adjoins the old corral, and will overlook De Lesseps Park. The building is to be almost di-

hogany handrails, and the walls of the corridors will be relieved with chair rails.

All the rooms will open on porches, seven feet four inches wide. In the front the porches will be cut in two by transverse partitions at the hall, but in the rear they will be continuous from one end of the building to the other.

The porches will be reached by double doors from each room. These doors will be fitted with sash and glass throughout, in the style of French windows. In addition, each room will have a window, three feet three inches in width, opening on the porch, and the end rooms will be equipped with an extra window.

The partitions between rooms will reach to the ceiling, and will be built of concrete blocks, five inches thick, and plastered. A picture molding will extend around the walls about two feet below the top. The rooms will be floored with wood, on concrete slab. The bathrooms will be tiled.

Each room will be equipped with a built-in dry closet, six feet four inches wide by two feet deep, extending to the ceiling, and equipped inside with the requisite shelves, hooks,

with iced water that does not come in contact with the ice, from a central filter and cooler.

### Applications for Family Quarters.

Applications for married quarters were on file on November 30, 1915, as follows:

STATIONS.	Number of applications.
Ancon .....	378 (81)
Ancon Hospital .....	3
Paraiso .....	174 (22)
Gatun .....	130 (18)
Cristobal .....	149 (34)
Total .....	834 (155)

NOTE—The figures in parentheses show the numbers of applicants already occupying regular or nonhouse-keeping family quarters at stations other than those at which applications are filed.

### Arrival of the "Academy."

The American schooner *Academy*, operated by the Anglo-American Exploiting Company, and previously engaged on an expedition searching for mineral locations along the west coast of South America, arrived at Balboa in the afternoon of November 30. She reported many hardships on a varied voyage, and the



FRONT ELEVATION OF BACHELOR QUARTERS BEING ERRECTED AT ANCON.

rectly across the road from the Century Club but as it is on a higher elevation the club building will not obstruct the view from the second and third stories. These will be approximately on the level of the first and second floors of the Tivoli Hotel and should afford a view of the Bay of Panama toward Peña Prieta.

In its general features the architecture of the building will conform to the style adopted for the concrete two-family quarters, though somewhat more suggestive of the mission style. The walls will be of poured concrete, and the roof will be of red tile. The front elevation of the building is shown in the accompanying sketch. The main entrance at the front will open on an entrance hall, which will lead to a lengthwise corridor running along the center of the story and to stairs leading to the floors above. The plans for the three floors are essentially the same. Each will have four front rooms in each wing, and seven rooms along the rear of the building, space being given at the rear for two toilet and shower-bath rooms. The corridor extending the length of the building on each floor will be four feet six inches wide and illuminated by windows at each end, supplementing the central illumination from the hall. The stairs will be of concrete, with ma-

etc. There will be a lavatory in each room with hot and cold water, supplied from a central electric heating plant. The central electric light for each room will be supplemented by a base receptacle for a portable table lamp, and wall bracket. Provision will be made for telephone connections from the rooms, and a public telephone will be installed on the first floor. On each corridor will be a drinking fountain,

master has brought charges of mutiny against members of the crew. The Academy is 85 feet in length by 23½ feet beam, and carries a crew of seven.

The water will be shut off from all points north of Mount Hope pumping station, including Colon, Cristobal, Coco Solo, and Margarita Island, from 7 a. m. until noon on Sunday, December 12, 1915.

### Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Buaz, Lionel.....	67583	Martinique.....	Panama.....	Panama Canal..	Nov. 22, 1915.
Christopher, John.....	88103	Antigua.....	Camp Bierd.....	Locks.....	Nov. 21, 1915.
Dawkins, Henry.....	64796	Jamaica.....	Mechanical Div.	Nov. 21, 1915.	
Johnson, Henry.....	96181	Jamaica.....	P. R. R.....	Nov. 20, 1915.	
Moore, John.....	102109	Jamaica.....	Folks River.....	P. R. R.....	Nov. 27, 1915.
Phillips, Albert.....	89789	Jamaica.....	Folks River.....	P. R. R.....	Nov. 28, 1915.
Rodriguez, Manuel.....	66154	Panama.....	Mun. Eng.....	Nov. 26, 1915.	
Smith, James.....	34079	Barbados.....	Gatun.....	Oper. and M.....	Nov. 25, 1915.
Wilson, George (Joseph).....	22460	Jamaica.....	Colon.....	Dredging Div.....	Aug. 7, 1915.

The estates of the abovesamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## PANAMA CANAL DIRECTORY.

**Executive Department.**  
Headquarters, Balboa Heights.  
GEO. W. GOETHALS, U.S.A., Governor.  
M. B. Stevens, Secretary.  
C. A. McILVAINE, Executive Secretary.  
W. P. Copeland, Chief Clerk,  
Executive Office.  
John K. Baxter, Chief, Division of  
Civil Affairs, Balboa Heights.  
Capt. Harry D. Mitchell, U. S. A.,  
Chief, Division of Police and  
Fire, Balboa Heights.  
A. R. Lang, Superintendent, Division  
of Schools, Balboa Heights.  
F. M. M. Richardson, Superintendent,  
Division of Clubs and  
Playgrounds, Balboa Heights.  
FRANK FEUILLE, Special Attorney, Ancon.  
WALTER F. VAN DAME, Assistant to  
the Special Attorney, Ancon.  
CHARLES R. WILLIAMS, District Attorney,  
Ancon.

**Department of Operation and Maintenance.**  
(Under immediate direction of the Governor as  
Head of the Department.)  
Headquarters, Balboa Heights.  
LIEUT.-COL. CHESTER HARDING, U.  
S. A., Engineer of Maintenance.  
C. O. Carlson, Secretary.  
LIEUT.-COL. JAY J. MORROW, U. S. A., Assistant  
to the Engineer of Maintenance.  
C. J. EMBREE, Office Engineer.  
CAPT. W. H. ROSE, U. S. A., Electrical Engineer,  
Electrical Division.  
LIEUT. CRESWELL GARLINGTON, U. S. A.,  
Assistant Engineer, Fortification  
Section.  
D. E. WRIGHT, Municipal Engineer, Division  
of Municipal Engineering.  
CAPT. T. H. DILLON, U. S. A., Superintendent,  
Gatun Locks, Gatun.  
F. C. CLARK, Superintendent, Pacific  
Locks, Pedro Miguel.  
F. D. WILLSON, Chief Hydrographer,  
Section of Meteorology and Hydrography.  
O. E. MALSBURY, Assistant Engineer,  
Section of Surveys.  
H. H. ROUSSEAU, Civil Engineer, U. S. N.,  
Engineer of Terminal Construction.  
R. R. Hand, Secretary.  
F. H. COOKE, Civil Engineer, U. S. N.,  
Designing Engineer.  
T. B. MÖNNICHE, Engineer of Docks,  
Cristobal.  
H. D. HINMAN, Assistant Engineer, Balboa.  
W. G. THOMPSON, Superintendent, Cristobal.  
C. C. SNEDEKER, Supervisor, Coco Solo,  
Cristobal.  
W. ROWLAND, Assistant Engineer, Balboa  
Heights.  
COMMANDER HUTCHINSON I. CONE,  
U. S. N., Marine Superintendent,  
Marine Division, Balboa Heights.  
LIEUT. P. P. BASSETT, U. S. N., Captain  
of the Port, Cristobal.  
LIEUT. A. B. REED, U. S. N., Captain  
of the Port, Balboa.  
Board of Local Inspectors—LIEUT. P. P.  
BASSETT, Chairman; J. MACFARLANE,  
LIEUT. A. B. REED. Headquarters,  
Balboa Heights.  
Geo. J. Vanderslice, Recorder.  
W. G. COMBER, Resident Engineer,  
Dredging Division, Paraiso.  
J. MACFARLANE, Superintendent, Paraiso.  
C. A. BLACK, Superintendent, Cristobal.

C. L. VANDEBURGH, Junior Engineer,  
Paraiso.  
D. C. NUTTING, JR., Constructor, U. S. N.,  
Superintendent, Mechanical Division,  
Balboa.  
J. J. EASON, Assistant Superintendent,  
Balboa.  
A. L. BELL, Mechanical Engineer,  
Balboa.  
GEO. M. WELLS, Resident Engineer, Building  
Division, Balboa Heights.  
SAMUEL M. HITT, Architect.  
T. C. MORRIS, Assistant Engineer.

**Supply Department.**  
MAJ. W. R. GROVE, U. S. A., Chief Quartermaster,  
Balboa Heights.  
CAPT. F. H. SMITH, U. S. A., Assistant  
Chief Quartermaster, Balboa Heights.  
BENJ. L. JACOBSON, Depot Commissary,  
Cristobal.  
R. K. MORRIS, General Storekeeper, Balboa.

**Accounting Department.**  
H. A. A. SMITH, Auditor, Balboa Heights.  
JOHN H. McLEAN, Paymaster, Balboa  
Heights.  
T. L. CLEAR, Collector, Balboa Heights.  
AD. FAURE, Chief Accountant, Balboa  
Heights.  
ELWYN GREENE, Chief Examiner, Balboa  
Heights.

**Health Department.**  
LIEUT.-COL. CHARLES F. MASON, U. S. A.,  
Chief Health Officer, Balboa Heights.  
LIEUT.-COL. G. D. DESHON, U. S. A.,  
Superintendent, Ancon Hospital.  
MAJ. ELBERT E. PERSONS, U. S. A.,  
General Inspector, Balboa Heights.  
MAJ. T. L. RHOADS, U. S. A., Superintendent,  
Colon Hospital.  
DR. M. C. GUTHRIE, U. S. P. H. S.,  
Chief Quarantine Officer, Balboa Heights.  
CAPT. D. W. HARMON, U. S. A., Health  
Officer of Colon, Cristobal.  
CAPT. H. P. CARTER, U. S. A., Health  
Officer of Panama, Ancon.

**Washington Office.**  
MAJ. F. C. BOGGS, U.S.A., General Purchasing  
Officer and Chief of Office.  
MAJ. EARL I. BROWN, U. S. A., Assistant  
General Purchasing Officer.  
A. L. FLINT, Assistant Chief of Office.

**Panama Railroad Company.**  
*Office in the United States, 24 State Street, New York City.*  
C. H. MOTSETT, Superintendent, Balboa  
Heights.  
SAMUEL W. HEALD, Master of Transportation,  
Balboa Heights.  
FRANK FEUILLE, Counsel, Ancon.  
WALTER F. VAN DAME, Assistant to  
the Counsel, Ancon.

**Courts.**  
WILLIAM H. JACKSON, District Judge,  
Ancon.  
E. M. Goolsby, Clerk, Ancon.  
W. H. MAY, Marshal, Ancon.  
S. E. BLACKBURN, Magistrate, Balboa.  
JOHN W. THOMPSON, Magistrate, Cristobal.

**Joint Land Commission.**  
FEDERICO BOYD, Panama City.  
RICARDO J. ALFARO, Panama City.  
NICHOLAS CORNET, Ancon.  
William Taylor, Secretary, Ancon.

## TOUR OF INSPECTION.

Chief Quarantine Officer Visited Thirty-Seven  
West Coast Ports.

The Chief Quarantine Officer has submitted a report, covering 37½ pages of single-spaced typewriting, covering his tour of inspection of ports of Ecuador, Peru, and Chile, as outlined in THE CANAL RECORD of September 15. Thirty-seven towns and cities along the coast were visited, and at practically all of them opportunity was afforded him to go ashore and make at least brief inspection; and he reports that while his stay at most of the ports was short he had usually sufficient time to gain a fairly clear idea of the conditions, especially since the most of the ports are small and are merely coast outlets to interior towns or valleys. The itinerary was so arranged that no opportunity was afforded to visit Colombian ports.

Observation was made of the means of transferring cargo between ships and land, whether by lighters or docking facilities, and of the storage warehouses along the waterfronts; and these points of specific interest were studied in the light of the general sanitary conditions in the contiguous communities. In connection with this, note was taken of the nature of cargo shipped outward from the ports, and due regard was given to whatever might have bearing on the commerce of the port, with consequent effects on the quarantine provisions at the Canal. The observations included the general run of ships plying along the coast and the quality of their crews, with their relation to sanitary practices and responsiveness to quarantine regulations. Especial attention was given to conditions at ports which have become notorious for disease.

The ports visited were Valparaíso, Coquimbo, La Serena, Huasco, Carrizal, Caldera, Chanaral, Talatal, Antofagasta, Gatico, Topocilla, Iquique, Caleta Buena, Pisagua, and Arica, in Chile; Ilo, Mollendo, Chala, Pisco, Tambo de Mora, Cerro Azul, Callao, Huacho, Supe, Huarmey, Casma, Samanco, Salaverry, Pacasmayo, Eten, and Payta, in Peru; and Guayaquil, Ballantra, Mangla Alto, Cayo, Manta, Bahia, and Esmeraldas, in Ecuador.

## Novel Means of Attracting Fish.

A novel means of attracting fish has been reported by the Chief Hydrographer as in vogue along the lower reaches of the Trinidad River, near the hydrographic station at Las Raíces. The Trinidad is one of the important tributaries of Gatun Lake, and the lake has backed up the valley beyond Las Raíces, submerging wide areas of vegetation. In its rise the water marooned numbers of ants and other crawling insects on the trees which were partly submerged. Many of these trees have rotted at the roots and fallen down. Each falling tree has meant insects for the fish in the vicinity, and the natives have discovered that the fall of a tree attracts them. Accordingly, when they wish to bring the fish they either push over a rotting tree or throw in a limb or log to make a splash. According to the Chief Hydrographer, this method, through calculated in ordinary circumstances to frighten fish away, attracts the lake fish in great numbers.

## Christmas Mail.

Attention is invited to the notices posted at the Canal Zone post-offices regarding Christmas mail. Despatches will be made on December 12 and 16.



## OFFICIAL CIRCULARS.

## Leave Regulations.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., November 30, 1915.  
CIRCULAR NO. 602-16 (Superseding circulars Nos. 602-7, 602-8, and 602-12):

1. Effective December 1, 1915, an employee who has completed seven months of his current service year, who resigns or is discharged on account of reduction of force, may be paid for 24 days annual leave, less the number of days annual leave previously charged against him for the current service year.

2. An employee discharged on account of reduction of force prior to the completion of seven months of his current year, may be paid for annual leave not to exceed two days for each full month served.

3. An employee who resigns prior to the completion of seven months of his current service year, may not be granted any annual leave unless he shall have been in the service one year or more, in which case he may be allowed the same leave as though discharged on account of reduction of force.

4. An employee entering upon regular leave of absence, who has sufficient annual or cumulative leave, or both, to his credit, to complete 10 months of the current service year, may, in addition, be granted the cumulative leave for that year.

5. An employee whose service is terminated by resignation or discharge on account of reduction in force, prior to the completion of 10 months of the current service year, who has sufficient annual or cumulative leave, or both, to his credit, to complete the 10 months period, may, in addition, be granted and paid for the cumulative leave which would then be due. In such case the leave can not be commuted to a cash payment until after the 10 months are actually past.

Geo. W. GOETHALS,  
Governor.

## Lock Permits.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 4, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

All lock permits expire on or before December 31, 1915. Please submit, not later than December 30, the names of all employees whose duties require them to frequently visit or cross the locks. The names of employees whose duties take them to the locks only occasionally should not be submitted, as permits for such employees will be issued upon request from the head of the department or division in each individual case.

Geo. W. GOETHALS,  
Governor.

## Military Reservation Permits.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 1, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

As all permits to military reservations expire December 31, 1915, it is requested that you submit, by December 15, the names of employees of your department or division whose duties necessitate frequent visits to the reservations.

It is desired to issue extended permits only as above outlined, and names of employees who make but occasional trips to reservations should not be submitted. These should be covered by individual request from head of department or division whenever necessary.

Geo. W. GOETHALS,  
Governor.

## Hand and Push Cars.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., November 30, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

The Chief Quartermaster advises me that under date of October 5 he issued circular requesting that all hand and push cars be used in be turned in to the storekeeper at Balboa to be repaired by the Mechanical Division for reuse, but that very few cars have been turned in so far.

It is believed that there are a number of cars not in use and it is requested that you give this matter prompt attention and have any that are not required by you turned in to avoid the necessity of purchasing additional hand and push cars.

Geo. W. GOETHALS,  
Governor.

## Transfer of Accountability in Corozal District.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 1, 1915.

## CIRCULAR NO. 110:

Effective this date, Mr. Roy R. Watson, as an accountable official of The Panama Canal, will account

for all stock charged to the quartermaster's store at Corozal and for all nonexpendable property formerly carried on the records of the assistant district quartermaster at Corozal. Mr. J. H. Humphrey will be relieved of the accountability for property in the Corozal district upon effecting a transfer of his accountability to Mr. Watson.

H. A. A. SMITH,  
Auditor, The Panama Canal.

## Approved:

Geo. W. GOETHALS,  
Governor.

## Transfer of Accountability in Cristobal District.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 1, 1915.

## CIRCULAR NO. 111:

Effective this date, Mr. J. H. Humphrey, as an accountable official of The Panama Canal, will account for all stock charged to the quartermaster's store at Cristobal and for all nonexpendable property carried on the property records of the district quartermaster at Cristobal. Mr. B. C. Poole will cease to be an accountable official of The Panama Canal upon effecting a transfer of his accountability to Mr. Humphrey.

H. A. A. SMITH,  
Auditor, The Panama Canal.

## Approved:

Geo. W. GOETHALS,  
Governor.

## Labor Train Passes.

THE PANAMA CANAL,  
PANAMA RAILROAD COMPANY.

EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 4, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

All labor train passes, form Al-898, will expire December 31, 1915. New passes will be issued for the year ending December 31, 1916, and it is desired that all departments submit to this office immediately a list of the passes required for the ensuing year, giving the following information:

Name. First or second class. Division. Date to Expire.  
Geo. W. GOETHALS,  
Governor, The Panama Canal,  
President, Panama Railroad Company.

## Chame Sand, 55 Cents per Cubic Yard.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 4, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

Effective December 1, the price of Chame sand at Miraflores will be 55 cents per cubic yard on board cars at that point. There is now approximately 12,000 cubic yards of this sand on hand.

Geo. W. GOETHALS,  
Governor.

## Transfer of Property from Accountable Official to Stores.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 4, 1915.

To accountable officials and storekeepers—With reference to transfer of property from accountable official to stores:

When an item of property, carried on the property records of an accountable official at a price lower than that of the storehouse inventory price, is turned in to stock, the accountable official will invoice at the property record price and the storekeeper will accept at storehouse inventory price by noting that price under "Remarks" on invoice. The difference in value will be credited to "Loss in value of material" by the Accounting Department.

When an item of property, carried on the property records of an accountable official at a price greater than the storehouse inventory price, is turned in to stock, the accountable official will invoice at the storehouse inventory price and forward to the Accounting Department a separate adjustment invoice for the difference in value.

AD. FAURE,  
Chief Accountant.

## Applications for Annual Reports.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., November 30, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

There are being forwarded to you today, under separate cover, . . . . . copies of form PC 234 (application for Annual Report for 1915), for distribution among the employees on your gold roll. Kindly have the completed forms returned to this office as soon as possible after being filled out by the employees. If this supply is insufficient, additional forms will be furnished upon application.

Folio of charts will not be sent unless approved by the head of department for employees drawing \$225 per month or more, or for official use or professional information. Space for such approval is provided on the application form.

C. A. McILVAINE,  
Executive Secretary.

## Telephone Directory.

THE PANAMA CANAL,  
ELECTRICAL DIVISION.

BALBOA HEIGHTS, C. Z., December 8, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

It is expected that within the next 10 days a new telephone directory covering all telephones connected to The Panama Canal system will be issued.

Persons using telephones will greatly assist improving the quality of the telephone service by using the number of the party called for, as obtained from the telephone directory, instead of the name, and the cooperation of all subscribers is requested in this particular.

Brief instructions for the use of telephones will be found in the front of the new directory and it is requested in the interest of good service, that these be complied with.

It is expected to make frequent revisions of the telephone directory during the coming year and it will be appreciated if any errors or omissions in the present directory are called to the attention of this office.

W. H. ROSE,  
Electrical Engineer.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, December 15, 1915, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same. The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m. at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above. For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, December 17, 1915, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board.  
GEORGE J. VANDERLUICE,  
Recorder, Board of Local Inspectors.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., December 8, 1915.

The following insufficiently addressed letters, originating in the United States or its possessions, have been received at the office of the Director of Posts and may be procured upon application of the addressees:

Balentine, Herbert E.	*Howard, G. E. L.
*Blake, Dr. L. C.	Kieman, Miss Jettie
*Boyd, Jas. R.	King, Lee M.
Brumlow, Chas. A.	Kyle, Thomas
Campbell, Byron	Leming, Harry F.
*Christensen, Mrs. B.	Loebenstein, Chas. F.
Cotivas, Gerardo	Neszy, Irving
DeCabra, Manuel	Nolan, W. H.
Ebdon, Mrs. T. G.	*Payne, Wm. E.
Elder, W. W.	Pratt, Capt. W. V.
Flowers, J. L.	Quinn, Harry B.
*Grenfell, E. W.	Sandborn, Harry
Hartman, P. Luchwig	Stinger, E. J.
Herron, John	Weston, Bill
Hueber, Julius E.	*Wood, Edward

\* Paper. † Card. ‡ Catalog.

## COMMISSARY DEPARTMENT.

## Orders Placed with Order Men.

The practice of giving hardware and dry goods orders to solicitors, who are only expected to take orders for cold storage and grocery articles, has grown to such proportions in certain districts as seriously to interfere with the getting out of orders for the last-named supplies and it has become necessary to curtail it. Solicitors can not be expected to be familiar with the prices of the hundreds of hardware and dry goods articles carried by the commissary stores, or to know definitely whether they happen to be in stock at the moment, and a great many complaints against the service would not have developed if this practice had not grown up.

Effective, therefore, December 15, 1915, solicitors on their rounds will be instructed to accept grocery and cold storage orders only, and patrons are urged to make their purchases of other supplies at the commissaries, attention being called to the fact the delivery of all such purchases (except alcohol and other articles which can not be handled with safety) will be made as at present.

## New Assortment of Linens.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., December 6, 1915.

## BULLETIN No. 495:

To commissary managers—A new assortment of linens has just been received from England and will be shipped to all commissaries, beginning December 8, 1915. These goods will be unpacked as soon after receipt as possible so that they can be placed on sale in all commissaries December 11, 1915.

BENJ. L. JACOBSON,  
Depot Commissary.

## Boy Scout Apparel.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., December 1, 1915.

## BULLETIN No. 478:

To commissary managers—Effective at once, the following items of Boy Scout apparel will be sold only from Cristobal and Balboa commissaries, upon presentation of cards of membership in the Boy Scouts:

Hats, S. N. 11569.....	\$1.30
Shirts, S. N. 11998.....	1.05
Pants, S. N. 11999.....	1.15
Leggings, S. N. 21218.....	.50

Please arrange to transfer your excess stock to the abovenamed commissaries or to this depot.

BENJ. L. JACOBSON,  
Depot Commissary.

## Cold Storage Prices.

The following list gives retail prices of cold storage provisions which will be effective December 9, 1915.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.	Price.
Beef, suet, special, per lb.....	\$.03
Beef suet, special, per lb.....	\$.03
Soup beef, special, per lb.....	.05
Soup beef, native, per lb.....	.05
Soup bone, special, per lb.....	.02
Soup bone, native, per lb.....	.02
Stew beef, special, per lb.....	.12
Stew beef, native, per lb.....	.12
Plate beef, special, per lb.....	.12
Plate beef, native, per lb.....	.08
Chuck roast (3 lbs. up), special, per lb.....	.12
Chuck roast (3 lbs. up), native, per lb.....	.08
Rib roast, 2d cut (3 lbs. up), special, per lb.....	.16
Rib roast, 2d cut (3 lbs. up), native, per lb.....	.09
Rib roast, 1st cut (3 lbs. up), special, per lb.....	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.....	.11
Pot roast, special, per lb.....	.20
Pot roast, native, per lb.....	.12
Rump roast, special, per lb.....	.20
Rump roast, native, per lb.....	.12
Porterhouse roast, choice, per lb.....	.31
Porterhouse roast, special, per lb.....	.22
Porterhouse roast, native, per lb.....	.16
Chuck steak, special, per lb.....	.13
Chuck steak, native, per lb.....	.09
Round steak, bottom, special, per lb.....	.13
Round steak, bottom, native, per lb.....	.10
Round steak, top, special, per lb.....	.15
Round steak, top, native, per lb.....	.10
Sirloin steak, special, per lb.....	.20

Sirloin steak, native, per lb.....	.12
Sirloin steak, choice cut, special, per lb.....	.23
Sirloin steak, choice cut, native, per lb.....	.16
Rump steak, special, per lb.....	.20
Rump steak, native, per lb.....	.12
Porterhouse steak (14 lbs. up), choice, per lb.....	.34
Porterhouse steak (14 lbs. up), special, per lb.....	.23
Porterhouse steak (14 lbs. up), native, per lb.....	.17
Porterhouse steak, short, choice, per lb.....	.28
Porterhouse steak, short, special, per lb.....	.20
Porterhouse steak, short, native, per lb.....	.12
Tenderloin steak, special, per lb.....	.35
Tenderloin steak, native, per lb.....	.25
Tenderloin steak, western, special, per lb.....	.27

## FRESH MEATS.

Lamb chops, per lb.....	.29
Lamb chops, shoulder, per lb.....	.20
Lamb, legs, 5 to 8 lbs., per lb.....	.24
Lamb, shoulder, trimmed, not less than 34 lbs., per lb.....	.15
Lamb, stewing, per lb.....	.12
Mutton chops, short cut, per lb.....	.23
Mutton chops, shoulder, per lb.....	.17
Mutton, leg, 8 to 10 lbs., per lb.....	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.....	.12
Mutton, stewing, per lb.....	.09
Pork hams, fresh (see footnote), per lb.....	.25
Pork, hams, chops, or roasts, per lb.....	.20
Pork, shoulders, fresh (see footnote), per lb.....	.20
Veal chops, per lb.....	.40
Veal chops, shoulder, per lb.....	.27
Veal cutlets, per lb.....	.45
Veal, loin for roasting, per lb.....	.40
Veal, shoulder for roasting, not under 4 lbs., per lb.....	.20
Veal, stewing, per lb.....	.17

## MISCELLANEOUS.

Brains, calves', per lb.....	.07
Calves' heads, ea.....	.78
Kidneys, beef, per lb.....	.09
Livers, beef, per lb.....	.08
Livers, calves', per lb.....	.07
Pates de foie gras, jar.....	.67
Pigs' feet, fresh, per lb.....	.06
Pigs' head, fresh, whole, ea.....	.83
Pigs' heads, fresh, 4 lb. ball.....	.20
Sausage, bologna, per lb.....	.19
Sausage, frankfurter, per lb.....	.19
Sausage, Heberwurst, per lb.....	.20
Sausage, pork, per lb.....	.10
Sausage, pork, homemade, per lb.....	.14
Sausage, Salami, per lb.....	.30
Spare ribs, pork, per lb.....	.17
Steak, hamburger, pkg.....	.17
Steak, hamburger, 20-pc. container, per lb.....	.19
Sweetbread, beef, per lb.....	.14
Tails, ox, per lb.....	.09
Tongue, beef, native, whole, per lb.....	.20
Yeast, per lb.....	.31
Yeast, cake.....	.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.....	.31
Bacon, breakfast, sliced, per lb.....	.32
Bacon, sliced, jar.....	.30
Bacon, sliced, 20-pc. container, per lb.....	.28
Bacon, squares, whole square, per lb.....	.19
Bacon, strips, whole strip.....	.19
Beef, corned—No. 1, per lb.....	.15
Beef, corned—No. 2, per lb.....	.15
Ham, genuine Westphalia, per lb.....	.50
Ham, minced, "Bologna style", per lb.....	.13
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.....	.17
Ham, sugar cured (whole) per lb.....	.24
Ham, sugar cured (half) per lb.....	.27
Ham, sugar cured (sliced) per lb.....	.32
Ham, sugar cured, boiled (whole) per lb.....	.31
Ham, sugar cured, boiled (half).....	.34
Ham, sugar cured, boiled (sliced).....	.39
Pigs' feet, pickled, per lb.....	.08
Pickled, per lb.....	.14
Pork, clear, per lb.....	.11
Pork, standard mess, per lb.....	.11
Tongue, beef, corned native, whole, per lb.....	.20
Tongue, pigs', per lb.....	.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.....	.31
Broilers, milk fed, per lb.....	.31
Capons, per lb.....	.37
Chickens, fancy roasting, corn fed, per lb.....	.28
Chickens, fancy roasting, milk fed, per lb.....	.33
Duckings, per lb.....	.26
Fowls, light, per lb.....	.23
Fowls, western, dry picked, per lb.....	.25
Geese, per lb.....	.22
Grouse, ea.....	.12
Squabs, ea.....	.45
Turkeys, per lb.....	.32

## DAIRY PRODUCTS.

Butter, creamery special, per lb.....	.44
Butter, creamery, 60-62 lb., per lb.....	.47
Butter, Sheffield farms, extra fancy, per lb.....	.58
Cheese, Edam, ea.....	1.50
Cheese, Gouda, tin.....	.39
Cheese, Gouda, per lb.....	.32
Cheese, Parmesan, per lb.....	.40
Cheese, Philadelphia cream, cake.....	.09
Cheese, Roquefort, per lb.....	.45
Cheese, snappy, cake.....	.47
Cheese, Swiss, per lb.....	.40
Cheese, Young America, per lb.....	.22
Cream, 30 per cent, 1 pt.....	.17
Cream, 30 per cent, pt.....	.29

Cream, 30 per cent, qt.....	.52
Eggs, fresh, per doz.....	.49
Eggs, fresh, 1 doz. (only).....	.25
Fer-mil-lac, bottle.....	.25
Ice cream, (see footnote) qt.....	.25
Ice cream, (see footnote) 1 gal.....	.50
Milk, Sheffield farms, qt.....	.18
Oleomargarine, per lb, carton.....	.29

## FISH.

Bluefish, fresh, per lb.....	.19
Codfish, dried, per lb.....	.11
Haddock, smoked, per lb.....	.08
Hallibut, fresh, per lb.....	.11
Herring, smoked, per lb.....	.11
Oysters, fresh, per qt.....	.39
Salmon, fresh, per lb.....	.12
Whitefish, smoked, per lb.....	.18

## VEGETABLES.

Beets, per lb.....	.02
Brussels sprouts, per lb.....	.19
Cabbage, per lb.....	.01
Carrots, per lb.....	.21
Caniflower, per lb.....	.15
Celery, per head.....	.05
Chocho, each.....	.02
Cucumbers, per lb.....	.12
Eggplant, per lb.....	.15
Lettuce, per lb.....	.15
Onions, per lb.....	.03
Parsnips, per lb.....	.02
Peas, green, per lb.....	.12
Potatoes, per doz.....	.12
Potatoes, white, per lb.....	.02
Potatoes, sweet, per lb.....	.02
Squash, per lb.....	.04
Squash, fancy, per lb.....	.08
Tomatoes, per lb.....	.07
Turnips, per lb.....	.01
Yams, yuca, per lb.....	.03

## FRUITS DRIED.

Apples, evaporated, per lb.....	.12
Apricots, evaporated, per lb.....	.14
Currants, cleaned, pkg.....	.13
Figs, per lb.....	.07
Peaches, evaporated, per lb.....	.07
Pears, evaporated, per lb.....	.18
Peel, citron, per lb.....	.22
Peel, lemon, per lb.....	.16
Peel, orange, per lb.....	.16
Prunes, stewing, per lb.....	.09
Raisins, seeded, pkg.....	.10
Raisins, table cluster, per lb.....	.23

## FRUITS, FRESH.

Apples, fresh, per lb.....	.04
Apples, fresh, select, per lb.....	.05
Bananas, 8 hands and over, per bunch.....	.40
Bananas, 6 and 7 hands, per bunch.....	.28
Bananas, ea.....	.09
Casaba, ea.....	.05
Cranberries, per lb.....	.09
Grapes, Malaga and Tokay, per lb.....	.13
Grapefruit, select, ea.....	.07
Grapefruit, tropical, ea.....	.03
Lemons, per doz.....	.13
Limes, per 100.....	.40
Oranges, select, ea.....	.04
Oranges, tropical, ea.....	.12
Pears, fresh, per lb.....	.08
Tangerines, ea.....	.01

\* Indicates advances from preceding list.  
\*\* Indicates five cents allowed for return of bottle.  
† Indicates reduction from preceding list.  
‡ Sold only from commissaries, no orders taken for delivery.  
§ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## Additions to Stock.

Buckles for women's pumps, patent and dull leather, pr.....	\$ .25
Leggings, Boy Scout, pr.....	.50
Shoes, men's, tan vici oxford, pr.....	3.85
Candies:	
Assorted, Lowney's, small, pkg.....	.04
Assorted, Lowney's, large, pkg.....	.07
Chocolates, Lowney's, 2-lb. box.....	1.25
Filberts, salted, 4-oz. jar.....	.22
Salt, Chili, other brands, 10-oz. box.....	.07
Soup, family, P. C., cake.....	.03
Snaps and saucers, Y-6923, ea.....	.35
Forks, cook, aluminum handle, ea.....	.27
Glass fish, 1-oz. tube.....	.07
Pans, bread, aluminum, ea.....	.41
Razors, safety, Gillette, pocket edition, set.....	4.00
Screwdrivers, Champion, No. 4, ea.....	.16
Screwdrivers, Champion, No. 6, ea.....	.23



Screwdrivers, Champion, No. 8, ea.....	\$0.31
Braid, rick rack, No. 13, 6-yd., pc.....	.04
Braid, rick rack, No. 21, 6-yd., pc.....	.03
Braid, rick rack, No. 27, 6-yd., pc.....	.05
Braid, rick rack, No. 39, 6-yd., pc.....	.08
Braid, rick rack, No. 45, 6-yd., pc.....	.09
Braid, rick rack, No. 53, 6-yd., pc.....	.10
Blouses, boys', low collar, ea.....	.46
Embroidery, stickered edging, 6-yd., pc.....	.09
Hoses, middy blouse, silk, ea.....	.03
Suits, bathing, children's, suit.....	1.05
Towels, embroidered, linen, 15" by 24", ea.....	.34
Towels, embroidered, linen, 15" by 24", ea.....	.38

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective December 6:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Bowls, sugar, ea.....	\$0.89	\$1.00
Carriages, baby, ea.....	3.95	3.70
Chimneys, lamp, ea.....	.07	.09
Glasses, sherry, ea.....	.60	.75
Hammers, claw, ea.....	.42	.45
Hooks, cup, doz.....	.09	.09
Jugs, cream, ea.....	.43	.48
Knives, butcher, ea.....	.13	.10
Knives, pocket, ea.....	.17	.20
Knives and forks, carving, set.....	2.50	2.65
Knocks, Yale, ea.....	.62	.71
Pans, sauce, ea.....	.97	.90
Pitchers, glass, ea.....	.31	.28
Plates, dinner, ea.....	.04	.05
Plates, bread and butter, ea.....	.04	.04
Plates, pie, ea.....	.16	.13

## JOINT LAND COMMISSION.

## Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 204, docket numbers as noted, October 25, 1915—With reference to the following claims, the evidence before the Commission is that settlement therefor has been made by the United States:

Docket No.	Claimant	Tax	Date of Payment.
626	Juan (M). Rios.....	929	9- -13
2644	Louis Toussaint.....	4- -15	
6447	Anna Alex.....	1- -15	
2648	A. H. Marson.....	808	2- -15
2758	Thomas Johnson.....	7-10-15	
2781	Charles Alford.....	2- -15	
2783	William Smith.....	2- -15	
2793	Fred (F.) Gale.....	3- -15	
2826	William Johnson.....	7- -14	
2843	Richard Pounder.....	3- -15	
2853	Caroline Young.....	5- -15	
2857	Edward L. Grant.....	331	3- -15
2864	Pedro (Pablo) Miranda(o).....	5- -15	
2882	Joseph Clough.....	10- -15	
3020	Diana Williams.....	12- -14	
3029	John Thompson.....	578	5- -15
3036	Thomas Spence.....	7- 7-15	
3106	Edouard Castillo.....	8-14-15	
3122	Antonio M. Ramos.....	1- -15	
3159	Manuel Perez.....	1-30-15	
3160	Esteban Sanguillen.....	630	1- -15
3164	Gregorio Torrez.....	615	1- -15
3163	Israel Menez.....	318	6- -15
3209	Miguel Herrera.....	890	8- -14
3213	Daniel Chanis.....	1021	7- -14

In view of the above settlements, no further action is necessary by the Commission, and the foregoing claims are hereby disallowed.

RICARDO J. ALFARO, RAMON ARTAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of sundry claims, rule of dismissal No. 209, docket numbers as noted, October 30, 1915—With reference to the following claims, the evidence submitted to the Commission at the public hearing said claims, is that settlement therefor has been made by the United States as follows:

Docket No.	Claimant	Tax	Date of Payment.
1028	Antonio Monez (Munez) 167-172-173	12- -11	
1040	William Pinnoch.....	12- -11	
1119	Robert Bell.....	3- -15	

The Commission holds that the above settlements are in full for all property claimed in the dockets above shown and the foregoing claims are therefore disallowed.

RICARDO J. ALFARO, RAMON ARTAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of the claim of Encarnacion Cherigo, for property located near Monte Lirio, rule of dismissal No. 210, docket No. 1114, November 5, 1915—The claim of Encarnacion Cherigo, docket No. 1114, which came on for hearing on November 4, 1915, is hereby disallowed as the evidence presented to the Commission does not justify an award being made.

FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

Commissioner R. J. Alfaro took part in the adjudication of this claim but does not concur in the dismissal thereof.

R. J. ALFARO.

## SHIPPING INFORMATION.

## January Weather Probabilities.

The following weather conditions may be expected at the Canal entrances during the month of January, 1916. Predictions are based on the records at Colon and Ancon for the past eight and 10 years, respectively.

**Winds**—January is normally a dry season month. Fresh northerly trade winds will prevail, and there will be an increase in the average wind velocity on both coasts as compared with December conditions. On the Atlantic coast the average hourly wind velocity will range from 12 to 16 miles an hour, and north and northeast winds will prevail. The maximum velocity is not likely to exceed 35 miles an hour.

The prevailing winds on the Pacific coast will continue from the northwest, the average hourly velocity ranging from seven to 12 miles an hour. The maximum velocity may not be expected to exceed 30 miles an hour.

**Rain**—Occasional light showers may be expected during the month, although January is a dry season month. The rainfall is usually heavier on the Atlantic than on the Pacific side, the average January rainfall being 3.95 inches and 1.02 inches, respectively. Sixteen days with rain may be expected at the Atlantic entrance, and seven at the Pacific. The average number of days with heavy rain (1.00 inch or more) has been one on the Atlantic side, while no heavy rains are likely to occur at the Pacific entrance to the Canal.

**Fogs**—No fogs are likely to occur during the month on either coast, but over the Gaillard Cut section of the Canal night and early morning fogs may be expected. The average number of nights with fogs at this place is eight, but the fogs that occur are usually light and practically all may be expected to lift or become dissipated before 8:30 a. m.

**Temperature**—There is little change in average air temperature on the Isthmus from month to month, and the average air temperature in the shade should be about 80° Fahrenheit on both coasts. The temperature may be expected to rise a little higher during the day and fall a little lower during the night than during the wet season. On the Atlantic coast the temperature is not likely to rise higher than 88° F. or fall lower than 70° F., while on the Pacific coast the maximum temperature for the month may be as high as 93° F. and the minimum as low as 63° F. The mean daily range in temperature is approximately seven degrees Fahrenheit at the Atlantic entrance, and 18 degrees Fahrenheit, at the Pacific.

**Barometric pressure**—The atmospheric pressure during the month of January should be slightly higher than during the preceding month, the average sea level pressure being about 29.88 inches. The maximum reading for the month is not likely to exceed 30.04 inches, or the minimum reading to be lower than 29.70 inches.

**Relative humidity**—The relative humidity of the atmosphere will be lower with the arrival of settled dry season conditions, and should average about 80 per cent over both coasts. The range will be greater on the Pacific coast, the night time humidity being about 90 per cent, and the average minimum during the day about 55 per cent, while on the Atlantic coast they are 85 and 75 per cent, respectively.

**Storms**—No severe general storms are likely

to occur during the month, although the so-called "northers" occasionally reach as far south as the Atlantic entrance to the Canal, during the period from November to April, inclusive. The winds are usually of insufficient force to affect navigation seriously, but the heavy sea or swell that accompanies these storms may at times prove troublesome. Few if any, local thunderstorms are likely to occur on either coast.

Smooth seas and fair weather may be expected at the Pacific entrance.

**Tides**—Tidal fluctuations need not be considered at the Atlantic entrance to the Canal, as the average tidal range is less than one foot, and the extreme range approximately two feet.

Panama (Balboa) tide predictions for the next six weeks are given below:

## DECEMBER.

DATE.	Time and height of high and low water.			
Wed., Dec. 8.....	4:12	10:36	16:48	22:56
	16.8	-1.7	16.2	-0.3
Thurs., Dec. 9.....	5:01	11:24	17:37	23:48
	16.7	-1.6	16.2	-0.1
Fri., Dec. 10.....	5:51	12:15	18:28	.....
	16.2	-1.1	15.8	.....
Sat., Dec. 11.....	0:40	6:43	13:04	19:19
	0.5	15.4	-0.3	15.2
Sun., Dec. 12.....	1:31	7:37	13:56	20:13
	1.2	14.4	0.7	14.4
Mon., Dec. 13.....	2:31	8:35	14:52	21:12
	2.0	15.3	1.8	13.6
Tues., Dec. 14.....	3:30	9:40	15:52	22:15
	2.7	12.3	2.8	13.0
Wed., Dec. 15.....	4:34	10:52	16:53	23:22
	3.1	11.7	3.5	12.6
Thurs., Dec. 16.....	5:35	12:07	17:57	.....
	3.9	11.5	.....	.....
Fri., Dec. 17.....	0:27	6:38	13:11	18:55
	12.4	3.2	11.7	3.9
Sat., Dec. 18.....	1:23	7:32	14:05	19:51
	12.6	2.8	12.1	3.7
Sun., Dec. 19.....	2:12	8:21	14:51	20:37
	12.8	2.4	12.5	3.4
Mon., Dec. 20.....	2:55	9:09	15:31	21:21
	13.9	2.0	12.9	3.0
Tues., Dec. 21.....	3:33	9:45	16:07	22:01
	13.5	1.5	13.3	2.6
Wed., Dec. 22.....	4:09	10:24	16:41	22:40
	13.4	1.2	13.6	2.4
Thurs., Dec. 23.....	4:45	11:02	17:17	23:19
	13.9	1.0	13.8	2.3
Fri., Dec. 24.....	5:20	11:39	17:52	23:57
	13.9	0.7	13.8	2.3
Sat., Dec. 25.....	5:55	12:17	18:26	.....
	13.8	1.2	13.9	.....
Sun., Dec. 26.....	0:37	6:30	13:54	19:00
	13.8	0.9	13.8	2.4
Mon., Dec. 27.....	1:18	7:07	13:33	19:37
	2.5	13.2	1.9	13.6
Tues., Dec. 28.....	2:01	7:49	14:15	20:16
	2.7	12.7	2.0	13.3
Wed., Dec. 29.....	2:49	8:35	15:03	21:04
	2.8	12.4	2.8	13.3
Thurs., Dec. 30.....	3:42	9:31	15:56	21:59
	2.9	12.1	3.1	13.3
Fri., Dec. 31.....	4:40	10:36	16:56	23:02
	2.7	12.1	3.2	13.4

## JANUARY.

DATE.	Time and height of high and low water.			
Sat., Jan. 1.....	5:51	11:55	18:06	.....
	2.5	12.7	3.1	.....
Sun., Jan. 2.....	0:16	6:52	13:00	19:14
	14.1	1.9	13.1	2.6
Mon., Jan. 3.....	1:09	7:37	14:00	20:17
	14.7	1.0	14.1	1.8
Tues., Jan. 4.....	2:17	8:55	14:58	21:15
	15.3	0.0	15.0	0.8
Wed., Jan. 5.....	3:19	9:47	15:54	22:18
	15.9	-0.9	15.8	0.1
Thurs., Jan. 6.....	4:11	10:36	16:48	22:57
	16.3	-1.4	16.3	-0.3
Fri., Jan. 7.....	5:05	11:22	17:41	23:46
	16.4	-1.5	16.6	-0.4
Sat., Jan. 8.....	5:55	12:09	18:30	.....
	16.2	-1.2	16.6	.....
Sun., Jan. 9.....	0:35	6:47	13:56	19:48
	-0.1	15.4	-0.6	16.6
Mon., Jan. 10.....	1:27	7:35	14:45	20:43
	0.1	15.0	0.4	15.6
Tues., Jan. 11.....	2:15	8:24	15:36	21:40
	1.2	14.1	1.5	14.7
Wed., Jan. 12.....	3:08	9:14	16:29	21:39
	2.1	13.0	2.6	13.7
Thurs., Jan. 13.....	4:04	10:11	17:24	22:34
	2.8	12.2	3.6	12.9

The times are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., December 5, 1915.)

There were no vessels entering the Canal during the week for transit.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
Dec. 2.....	Amelia.....	Donald S. S. Co., Ltd.....	Philadelphia.
Dec. 3.....	Rosalie Mahony.....	Olson & Mahony.....	Guilport.
Dec. 4.....	Comito.....	Elders & Fyffes.....	Limón.
Dec. 5.....	.....	.....	.....
Dec. 6.....	.....	.....	.....
Dec. 7.....	.....	.....	.....
Dec. 8.....	.....	.....	.....
Dec. 9.....	.....	.....	.....
Dec. 10.....	.....	.....	.....
Dec. 11.....	.....	.....	.....
Dec. 12.....	.....	.....	.....
Dec. 13.....	.....	.....	.....
Dec. 14.....	.....	.....	.....
Dec. 15.....	.....	.....	.....
Dec. 16.....	.....	.....	.....
Dec. 17.....	.....	.....	.....
Dec. 18.....	.....	.....	.....
Dec. 19.....	.....	.....	.....
Dec. 20.....	.....	.....	.....
Dec. 21.....	.....	.....	.....
Dec. 22.....	.....	.....	.....
Dec. 23.....	.....	.....	.....
Dec. 24.....	.....	.....	.....
Dec. 25.....	.....	.....	.....
Dec. 26.....	.....	.....	.....
Dec. 27.....	.....	.....	.....
Dec. 28.....	.....	.....	.....
Dec. 29.....	.....	.....	.....
Dec. 30.....	.....	.....	.....
Dec. 31.....	.....	.....	.....

## \*DEPARTURES.

Date	Vessel	Line	For
Dec. 1.....	Siena.....	La Veloce Line.....	Genoa.
Dec. 2.....	Lewis Luckenbach.....	Luckenbach Line.....	New York.
Dec. 3.....	Nipier.....	Leyland Line.....	New Orleans.
Dec. 4.....	Amelia.....	Donald S. S. Co., Ltd.....	Havana, Cuba.
Dec. 5.....	Puerto Rico.....	French Line.....	Bordeaux.
Dec. 6.....	Comito.....	Elders & Fyffes.....	Bristol.
Dec. 7.....	.....	.....	.....
Dec. 8.....	.....	.....	.....
Dec. 9.....	.....	.....	.....
Dec. 10.....	.....	.....	.....
Dec. 11.....	.....	.....	.....
Dec. 12.....	.....	.....	.....
Dec. 13.....	.....	.....	.....
Dec. 14.....	.....	.....	.....
Dec. 15.....	.....	.....	.....
Dec. 16.....	.....	.....	.....
Dec. 17.....	.....	.....	.....
Dec. 18.....	.....	.....	.....
Dec. 19.....	.....	.....	.....
Dec. 20.....	.....	.....	.....
Dec. 21.....	.....	.....	.....
Dec. 22.....	.....	.....	.....
Dec. 23.....	.....	.....	.....
Dec. 24.....	.....	.....	.....
Dec. 25.....	.....	.....	.....
Dec. 26.....	.....	.....	.....
Dec. 27.....	.....	.....	.....
Dec. 28.....	.....	.....	.....
Dec. 29.....	.....	.....	.....
Dec. 30.....	.....	.....	.....
Dec. 31.....	.....	.....	.....

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From
Nov. 30.....	Montaro.....	Peruvian Line.....	Callao.
Nov. 30.....	Cauca.....	Pacific Steam Nav. Co.....	Guayaquil.
Dec. 1.....	Salvador.....	Salvador R. R. Co.....	Tobago.
Dec. 1.....	Ayacu.....	South American Line.....	Valparaiso.
Dec. 3.....	San Juan.....	Pacific Mail S. S. Co.....	San Francisco.
Dec. 2.....	Academy.....	A. Behm.....	Buenaventura.
Dec. 3.....	Edith.....	Luckenbach Line.....	San Francisco.
Dec. 4.....	Capt. A. F. Lucas.....	Standard Oil Co.....	San Francisco.
Dec. 4.....	S. O. Barge No. 93.....	Standard Oil Co.....	San Francisco.
Dec. 5.....	Colinas.....	Alfred Holt & Co.....	San Francisco.
Dec. 6.....	.....	.....	.....
Dec. 7.....	.....	.....	.....
Dec. 8.....	.....	.....	.....
Dec. 9.....	.....	.....	.....
Dec. 10.....	.....	.....	.....
Dec. 11.....	.....	.....	.....
Dec. 12.....	.....	.....	.....
Dec. 13.....	.....	.....	.....
Dec. 14.....	.....	.....	.....
Dec. 15.....	.....	.....	.....
Dec. 16.....	.....	.....	.....
Dec. 17.....	.....	.....	.....
Dec. 18.....	.....	.....	.....
Dec. 19.....	.....	.....	.....
Dec. 20.....	.....	.....	.....
Dec. 21.....	.....	.....	.....
Dec. 22.....	.....	.....	.....
Dec. 23.....	.....	.....	.....
Dec. 24.....	.....	.....	.....
Dec. 25.....	.....	.....	.....
Dec. 26.....	.....	.....	.....
Dec. 27.....	.....	.....	.....
Dec. 28.....	.....	.....	.....
Dec. 29.....	.....	.....	.....
Dec. 30.....	.....	.....	.....
Dec. 31.....	.....	.....	.....

## DEPARTURES.

Date	Vessel	Line	For
Nov. 27.....	Carib II.....	Robert Wilcox.....	Pedregal.
Dec. 1.....	Jamaica.....	Pacific Steam Nav. Co.....	Valparaiso.
Dec. 1.....	Salvador.....	Salvador R. R. Co.....	Guayaquil.
Dec. 3.....	Urubombo.....	Peruvian Line.....	Callao.
Dec. 4.....	.....	.....	.....
Dec. 5.....	.....	.....	.....
Dec. 6.....	.....	.....	.....
Dec. 7.....	.....	.....	.....
Dec. 8.....	.....	.....	.....
Dec. 9.....	.....	.....	.....
Dec. 10.....	.....	.....	.....
Dec. 11.....	.....	.....	.....
Dec. 12.....	.....	.....	.....
Dec. 13.....	.....	.....	.....
Dec. 14.....	.....	.....	.....
Dec. 15.....	.....	.....	.....
Dec. 16.....	.....	.....	.....
Dec. 17.....	.....	.....	.....
Dec. 18.....	.....	.....	.....
Dec. 19.....	.....	.....	.....
Dec. 20.....	.....	.....	.....
Dec. 21.....	.....	.....	.....
Dec. 22.....	.....	.....	.....
Dec. 23.....	.....	.....	.....
Dec. 24.....	.....	.....	.....
Dec. 25.....	.....	.....	.....
Dec. 26.....	.....	.....	.....
Dec. 27.....	.....	.....	.....
Dec. 28.....	.....	.....	.....
Dec. 29.....	.....	.....	.....
Dec. 30.....	.....	.....	.....
Dec. 31.....	.....	.....	.....

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic Survey charts for this region, and which is 8.0 feet below mean seal level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is the Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

#### Proposals for Construction of Reinforced Concrete Office and Apartment Building for American Bible Society at Cristobal.

The time used is the Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

The Panama Railroad Company reserves the right to accept any bid or reject any or all bids. Bids must be accompanied by cash, certified check, or post-office money orders made payable to the Collector, Panama Canal, in the sum of \$5,000 as a guarantee that the bidder will, if required by the Panama Railroad Company, enter into a contract with satisfactory security in an amount of \$5,000 as a guarantee that he will faithfully perform the work covered by the contract. Bids must be marked "Proposal for construction of building for American Bible Society at Cristobal, C. Z.," and addressed to the Chief Quartermaster, Panama Canal, Balboa Heights, C. Z.,

#### Proposals for Furnishing the Commissary Branch with Central American Sugar.

Scaled proposals will be received at the office of the Depot Commissary, Cristobal, C. Z., until 4 p. m., January 15, 1916, and then opened, for furnishing the commissary branch with 180,000 pounds of so-called Central American sugar. Specifications may be obtained upon application to the Depot Commissary, Cristobal, C. Z. The right is reserved to accept any bid or reject any or all bids. Bids must be accompanied by deposit in the form provided in the specifications in an amount not less than 10 per cent of the amount bid as a guarantee that the bidder will deliver the material in accordance with the conditions of the specifications. Bids should be marked "Proposals for furnishing Central American sugar, to be opened January 15, 1916," and addressed to the Depot Commissary, Cristobal, C. Z.

## Rainfall from November 1 to 30, 1915, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>	<b>Ins.</b>	<b>23</b>	<b>Ins.</b>
Balboa.....	1.29	23	7.64
Balboa Heights.....	1.13	23	7.05
Miraflores.....	1.12	23	8.43
Pedro Miguel.....	3.39	15	7.92
Rio Grande.....	2.22	15	8.02
<b>Central Section—</b>	<b>Ins.</b>	<b>8</b>	<b>Ins.</b>
Culebra.....	3.03	8	12.27
Camacho.....	1.03	8	11.93
Empire.....	1.86	8	10.60
Gambou.....	1.48	9	8.37
Juan Mina.....	1.53	2	12.39
Alhajuela.....	3.39	15	11.93
Vigia.....	3.48	15	12.42
Frijoles.....	2.53	9	10.67
Trinidad.....	1.21	13	11.65
Monte Lirio.....	2.95	16	24.27
<b>Atlantic Section—</b>	<b>Ins.</b>	<b>9</b>	<b>Ins.</b>
Gatun.....	2.27	9	18.28
Brazos Brook.....	2.85	20	18.96
Colon.....	3.71	27	22.33
Bocas del Toro.....	1.41	5	6.35

\*Standard rain gage—readings at 5 p. m. daily.  
 †Standard rain gage—readings at 8 a. m. daily.  
 Automatic rain gage at unstarred stations—values midnight to midnight.

## November Rainfall for Three Years.

STATIONS.	1913	1914	1915	Station Av.	Years of record	Rainy days, '15
<b>Pacific Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Balboa.....	7.90	11.99	7.64	9.19	17	24
Balboa Heights.....	10.63	10.35	7.05	10.27	19	24
Miraflores.....	9.15	10.79	8.43	11.19	8	24
Pedro Miguel.....	10.17	10.88	7.92	10.49	8	25
Rio Grande.....	9.15	9.60	8.02	10.12	11	27
<b>Central Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Culebra.....	11.21	7.77	12.27	12.50	27	26
Camacho.....	12.90	7.34	11.93	12.52	10	27
Empire.....	14.23	6.00	10.60	10.79	11	27
Gambou.....	14.13	7.70	8.37	12.06	33	26
Juan Mina.....	16.34	8.26	12.49	12.45	6	25
Alhajuela.....	16.56	7.56	11.93	14.44	17	29
El Vigia.....	16.94	10.72	12.42	15.29	8	27
Frijoles.....	17.81	8.83	10.67	15.55	4	28
Trinidad.....	14.03	15.00	11.65	13.83	8	26
Monte Lirio.....	15.02	14.32	24.27	21.99	8	23
<b>Atlantic Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>
Gatun.....	15.88	12.57	18.28	20.54	11	28
Brazos Brook.....	21.32	16.61	18.96	22.97	10	27
Colon.....	16.75	18.35	22.33	21.68	45	26

## Maximum Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gambou	Gatun Lake	Miraflores Lake
Sun., Nov. 28.....	127.70	93.59	85.55	85.52	54.28
Mon., Nov. 29.....	127.35	93.32	85.52	85.52	54.38
Tues., Nov. 30.....	128.50	93.75	85.73	85.69	54.25
Fri., Dec. 1.....	128.90	94.40	85.91	85.90	54.26
Tues., Dec. 2.....	138.40	101.27	86.86	86.80	54.30
Wed., Dec. 3.....	137.65	101.00	86.86	86.80	54.31
Sat., Dec. 4.....	131.70	97.20	86.04	86.04	54.27
Heights of low water to nearest foot.....	125.0	91.0			

## Sailings of Vessels in Regular Service with the United States.

Vessel.	Line.	Sails.	Arrives.
Almirante.....	U. F. C.	Dec. 1.....	Dec. 8
Advance.....	P. R. R.	Dec. 2.....	Dec. 8
Pastores.....	U. F. C.	Dec. 4.....	Dec. 12
Zacapa.....	U. F. C.	Dec. 8.....	Dec. 15
Allianca.....	P. R. R.	Dec. 9.....	Dec. 15
Calamares.....	U. F. C.	Dec. 11.....	Dec. 19
Carrillo.....	U. F. C.	Dec. 15.....	Dec. 22
Colon.....	P. R. R.	Dec. 16.....	Dec. 22
Tenadores.....	U. F. C.	Dec. 18.....	Dec. 26
Santa Marta.....	U. F. C.	Dec. 22.....	Dec. 29
Advance.....	P. R. R.	Dec. 23.....	Dec. 30
Metapan.....	U. F. C.	Dec. 25.....	Jan. 3

## CRISTOBAL-COLON TO NEW YORK.

Vessel.	Line.	Sails.	Arrives.
Santa Marta.....	U. F. C.	Dec. 9.....	Dec. 16
Advance.....	P. R. R.	Dec. 9.....	Dec. 16
Metapan.....	U. F. C.	Dec. 13.....	Dec. 21
Panama.....	P. R. R.	Dec. 16.....	Dec. 22
Almirante.....	U. F. C.	Dec. 16.....	Dec. 23
Pastores.....	U. F. C.	Dec. 20.....	Dec. 28
Allianca.....	P. R. R.	Dec. 23.....	Dec. 29
Zacapa.....	U. F. C.	Dec. 23.....	Dec. 30
Calamares.....	U. F. C.	Dec. 27.....	Jan. 4

## NEW ORLEANS TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Atenas.....	U. F. C.	Dec. 4.....	Dec. 11
Parishina.....	U. F. C.	Dec. 11.....	Dec. 18
Cartago.....	U. F. C.	Dec. 15.....	Dec. 20
Abangarez.....	U. F. C.	Dec. 18.....	Dec. 25
Heredia.....	U. F. C.	Dec. 22.....	Dec. 27
Atenas.....	U. F. C.	Dec. 25.....	Jan. 1
Parishina.....	U. F. C.	Dec. 29.....	Jan. 3
Turrialba.....	U. F. C.	Jan. 1.....	Jan. 8

## CRISTOBAL-COLON TO NEW ORLEANS.

Vessel.	Line.	Sails.	Arrives.
Heredia.....	U. F. C.	Dec. 12.....	Dec. 17
Atenas.....	U. F. C.	Dec. 13.....	Dec. 20
Parishina.....	U. F. C.	Dec. 19.....	Dec. 24
Turrialba.....	U. F. C.	Dec. 20.....	Dec. 27
Carrago.....	U. F. C.	Dec. 26.....	Dec. 31
Abangarez.....	U. F. C.	Dec. 27.....	Jan. 1
Heredia.....	U. F. C.	Dec. 27.....	Jan. 1
Atenas.....	U. F. C.	Dec. 31.....	Jan. 10

# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, DECEMBER 15, 1915.

No. 17.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis; Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications.

THE CANAL RECORD.

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Regulating Valves for Center Wall Culverts of Locks.

Work is in progress for the installation of regulating valves at the intakes and discharges of the center wall culverts of the locks, to restrain the current action which is ordinarily set up in the adjoining approaches to the locks when the culvert is used and which is sometimes a source of difficulty in handling ships in the approaches.

The center wall culverts extend from an intake directly beyond the line of the upper chain fenders, down the length of the locks to a discharge beyond the lower guard gates. The passage of water is controlled by gate valves, but when the culvert is used at its capacity, if water is being taken in it sets up strong sucking currents at the intake, converging toward the intake from both lock approaches; or if water is being discharged through the culvert, it sets up strong outward currents in the lower approaches, adjacent to the discharge. The regulating valves will be installed to make it possible to take water from only one side, when desired, and to discharge on either side. When a ship is in the approach the valves will be used to allow the drawing or discharging of water from or into the opposite approach only; thus eliminating strong currents in the approach occupied by the ship.

### Excavation during the Past Week.

Excavation from the bases of the slides on the east and west banks of the Canal at Culebra, directly north of Gold and Contractor's Hills, respectively, amounted to 232,950 cubic yards during the week ending at 6 a. m., Tuesday, December 14. Other

excavation in the Cut amounted to 27,905 cubic yards, making the total for the week aggregate 260,855 cubic yards. In addition, 30,260 cubic yards were rehandled.

The output of the several dredges during the week was as follows:

Dredge	Type	Yardage
Cascazas	15-yard dipper	74,935
Gamboa	15-yard dipper	56,250
Paraiso	15-yard dipper	70,540
Corozal	Ladder	31,225
Culebra	Sauging suction	5,385
No. 86	Pipeline suction	32,780

The average aggregate output from the Cut for the seven preceding weeks was 273,528 cubic yards.

### Depot for Handling Local Fruits and Vegetables at Cristobal.

A receiving and storing house for fruit and vegetables for the commissary branch of the Supply Department was opened at Folks River, adjoining Cristobal, on Monday, December 13. It will be used principally for handling the output of the five plantations operated by The Panama Canal near the Atlantic entrance to the Canal. Produce can be delivered by boat as well as by wagon, there being a wharf in the rear, while the building fronts on the road to Mount Hope. The building was formerly used for a public market, and has been adapted to its new service by slight changes and additions.

Space is provided for hanging about 200 bunches of bananas and the shelves will hold over 5,000 plantains—about one week's consumption; it is believed that this adequate spacing will permit the even and complete ripening of plantains, which heretofore has been a difficult matter.

The increased outturn of papayas, breadfruit, coconuts, vegetables, etc., from the plantations has made such a clearing house desirable for some time, and this building will greatly facilitate the operations between the plantations and the commissaries.

### Postal Service Using Two Motor Delivery Wagons.

After a month's operation of two motor delivery wagons for handling mail for Balboa and Balboa Heights post-offices, the Division of Posts has found them to effect a saving over the former system of hauling mail in wagons drawn by mules and to expedite the service, allowing later closing of the outward mails and earlier opening of the incoming pouches. At present the mail for Ancon and Panama despatched from Balboa and Balboa Heights is handled only over the Panama Railroad, but it is expected to use the motor wagons for an afternoon service to Ancon, after the heavy mail demands of the Christmas season shall have passed.

### Fire Aboard the "Antonio Lopez."

Fire, caused by an explosion in the magazine in the forward hold, broke out on the Spanish steamer *Antonio Lopez* at 8.50 in the morning of Monday, December 13,

while the vessel was lying in dock at Pier 10, Cristobal. The ship's crew, the Cristobal fire department, and the Canal tug *Porto Bello* and claret No. 4 were engaged for six hours before the fire was extinguished completely. The fire was confined to the No. 1 hold. After the fire was extinguished the tug *Porto Bello* and claret No. 4 were used for pumping out the hold. The *Antonio Lopez* is operated by the Compañía Trasatlantica de Barcelona, and is a passenger-carrying vessel registered at 3,591 net tons. The ship is 430 feet long by 50 feet beam, and was built in 1911.

### Italian Line Service Suspended.

The Caribbean service of the Italian Navigation Company, "La Veloce," which includes Colon as a port of call, has been suspended until further notice. The home port of the service is Genoa. The line has been operating in the Caribbean service the steamships *Siena*, *Savoia*, and *Bologna*, giving a sailing each way every four weeks.

### Six Gates of Spillway Again in Operation.

Six gates of the 14 at the Gatun Spillway were opened from 5.45 to 10.15 p. m. on November 15, as a result of a freshet on the Chagres River, and five gates were opened from 6 to 9.30 p. m. on the next day as a result of heavy rains in the lower lake area, especially in the Trinidad River basin. This made the third time in which six gates were operated, the previous occasions having been on October 7, 1914, and October 31-November 1, 1915. The maximum discharge on November 15 was 66,330 cubic feet per second. That during the opening of six gates at the first of the month was 71,334 cubic feet per second. The reason for the greater discharge at the first of the month was the higher elevation of the lake surface at that time.

The freshet of November 15 and 16 in the Chagres Valley gave the highest momentary discharge from the Chagres since November 28, 1912. There was maximum discharge at Alhajuela of 38,000 cubic feet per second, and 12-hour and 18-hour average discharges of 23,650 and 18,450 cubic feet per second, respectively, covering the period from 2.30 p. m. on the 15th to 8.30 a. m. on the 16th.

Between November 1 and 3, inclusive, the surface of the lake was lowered from 86 feet above sealevel to 85. On the 12th to the 14th inclusive, it was raised to 85.50, at approximately which level it was held to the end of the month. On December 1 it was raised to 86 feet.

### Record for Day's Work by a Dredge.

In the Canal Record of December 1, the record excavation for one day for a Canal dredge, 17,185 cubic yards, was attributed to the *Culebra*. This should have been *Paraiso*.



## LABOR FORCE AND QUARTERS IN OCTOBER.

## QUARANTINE ACTIVITIES.

The force report of Wednesday, November 24, shows the actual working force of The Panama Canal on that date to have been 19,208; of the Panama Railroad, 5,151; and of contractors, 343, a total effective working force of 24,702. This is an increase of 635 over the 24,067 employed on October 27; is 941 more than the 23,761 employed on September 22; but is a decrease of 722 from the 25,424 employed on August 25; a decrease of 2,203 from the 26,905 employed on July 31; a decrease of 2,195 from the 26,897 employed on June 23; a decrease of 1,732 from the 26,434 employed on May 26; and 113 less than the 24,815 employed on April 21. It is, however, 1,328 more than the 23,374 employed on March 24, and 1,357 more than the 23,345 employed on February 24. The force employed on January 20 was 24,853, which is 151 more than the force on November 24.

The gold force on the Isthmus on November 24, composed almost exclusively of white Americans, was 3,763, an increase of 20 from the force on October 27; an increase of 163 from the 3,600 employed on September 22; and 167 more than the 3,596 employed on August 25; 142 more than the 3,621 on July 21; 170 more than the 3,593 employed on June 23; 143 more than the 3,615 on May 26; and 402 more than the 3,361 employed on April 21. The gold force on November 24, numbering 3,763, was distributed as follows: The Panama Canal, 3,303; the Panama Railroad, 350; contractors, 110. Detailed figures of the employment on the Isthmus on November 24 follow:

DEPARTMENT OR DIVISION.	SILVER EMPLOYEES*															Grand total.
	Artisans.										Laborers.					
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Euro- pean 16 cents.	13 cents.	10 cents.	7 cents.	5 cents.	Total silver.	Total gold.		
Operation and Main- tenance; locks & office	343	1	50	22	13	83	1	20	8	5			396	140	536	
Terminal Construct'n	416	2	59	190	422	83	20	79	303	430	16	3	2,291	289	2,580	
Building Division.	106	2	354	508	549	25	3	161	154	3	10	1,875	182	2,057		
Electrical	86	6	33	80	62	136			5			2	410	174	584	
Municipal Eng.	287		50	140	168	127	25	14	198	677	11	36	1,733	88	1,821	
Dredging	1,896	1	10	41	141	40			124	33			2,291	344	2,635	
Mechanical	138	7	72	110	577	622		12	51	160	5	5	1,759	843	2,602	
Marine Division	140												140	38	178	
Fortifications	59		34	57	96	13		1	92	55	1	1	408	85	493	
General Construct'n	5					1		1	10	44	1	1	63	2	65	
Total.	3,476	17	615	1,148	2,028	1,048	45	110	952	1,558	23	76	11,096	2,185	13,281	
Supply; main office.														13	13	
Commissary	824		4	6	17	13	236	1		147	18	1	1,267	173	1,440	
Subsistence	457		2	2	13								508	26	534	
Quartermaster	797	56	68	77	75		18	10	251	666	1	5	2,024	78	2,102	
Accounting	22												22	212	234	
Health	433		3	3	13		7		25	352	11	16	863	183	1,046	
Executive	123		1										435	558		
Panama Railroad	373	144	43	201	548	967	1,384	62	526	531	8	14	4,801	350	5,151	
Contractors	40	4	7	34	11		108		19	5		5	233	110	343	
Grand total.	6,575	222	744	1,471	2,694	2,042	1,798	183	1,773	3,259	61	117	20,939	3,763	24,702	
Month previous.	6,664	193	743	1,482	2,739	1,800	1,281	164	1,750	3,322	66	120	20,324	3,743	24,067	
Changes	-91	+29	+1	-11	-43	+242	+517	+19	+23	-63	-5	-3	+615	+20	+635	

\*The wages are stated in United States currency.

## QUARTERS.

A summary of the occupation of Government quarters on the Isthmus on November 30, 1915, is given below:

PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa*	952	332	302	125*	8	15	1,520*	481	676
Ancon.	990	441	355				257	15	
Corozal.	22	7	7				15	16	15
Pedro Miguel.	214	115	136	8			335*	103	113
Paraiso	307	79	95	127	5	14	40	106	151
Culebra.	22	12	12	1	1	7	380*	274	326
Gamboa.	24	4	9				77	19	34
Gatun.	217	173	221	30	3	5	497	375	690
Cristobal.	925	334	399	84			1,590*	186	571
Total	3,673	1,497	1,536	382	17	41	5,150	1,575	2,376

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 16 Asiatics. (3) Includes 17 American negroes, 90 Colombians and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores and Red Tank. (5) Includes 33 Panamanians. (6) Includes Empire, Las Cascadas, and Bas Obispo. (7) Includes 14 Panamanians. (8) Includes Colon Beach and Colon Hospital. (9) Includes 25 East Indians, 18 colored American citizens, and 180 Panamanians.

## Dispensary Hours.

The following is a tabulation of the hours at which the Canal dispensaries are open for free consultation with the district physicians by Government employes and members of their families, and for the filling of prescriptions. Emergency calls may be sent to the quarters of the district physicians at other than dispensary hours:

Location.	Week days.		Sundays and holidays.
	Morning	Afternoon	
Balboa	8-11.30	3.00-5.30	Morning 9.00-10.00
Ancon.	8-10.00	12.00-1.00	8.00-10.00
		4.00-6.00	
Pedro Miguel.	8-11.00	3.00-5.30	9.00-10.00
Paraiso	8-11.30	3.30-5.30	8.30-9.30
Gatun.	8-10.00	12.00-1.00	9.00-10.00
		4.00-6.00	
Colon.	8-10.00	4.00-6.00	8.00-10.00

Least Number of Inspections for Any Month So Far This Year.

Immigration to the Isthmus from foreign ports during the month of November, 1915, exceeded emigration to foreign ports by 43 persons, according to the count kept by the quarantine officials of the ports of Cristobal-Colon and Balboa-Panama. This makes the net emigration since July 1, 1913, a period of two years and five months, amount to 26,885. This is at the rate of 927 per month, or 30.4 per day. During approximately the same period the Canal force diminished from 42,262 on June 25, 1913, to 24,702 on November 24, 1915. This was a decrease of 17,560, which is at the rate of 605.2 per month or 19.9 per day.

The total number of persons examined at the ports, including passengers and crews, during November was 10,519. This was less than the number during any preceding month of the year, and is ascribed to the closing of the Canal. A comparison of the numbers of passengers and crews examined in the months of this year is afforded by this tabulation:

Month.	Passengers.	Crews.	Total.
January	3,887	10,232	14,119
February	4,300	9,332	13,632
March	6,014	12,155	18,169
April	3,605	11,032	14,637
May	5,391	11,772	17,163
June	4,969	12,756	17,725
July	4,974	14,136	19,110
August	4,900	14,814	19,714
September	4,606	13,514	18,120
October	3,940	10,336	14,276
November	3,289	7,230	10,519
Total.	49,875	127,509	177,384

The Canal was closed all during the month of November, and the number of vessels arriving at its terminal ports in the conduct of transfer business during the month was 103, as compared with an aggregate of vessels, calling at the terminals or passing through the Canal, of 168 in October, 234 in September, 221 in August, and 246 in July. Traffic through the Canal in July was the greatest for any month since its opening.

The total number of persons examined by the quarantine officers this year, to December 1, was 177,384. For the 11-month period, this was at the rate of 16,125.8 per month, and equivalent to 531.7 per day.

A summary of the quarantine activities on the Isthmus during November is given in this consolidated report for the ports of Balboa-Panama and Cristobal-Colon:

Number of vessels inspected and passed	92
Number of vessels held in quarantine	11
Total	103
Number of vessels fumigated on arrival	9
Number of vessels fumigated on departure	2
Total	11
Number of crew examined	7,300
Number of passengers examined	3,289

Total	10,519
Number of supplementary inspections	2,268
Number of persons vaccinated at port of arrival because of compulsory vaccination law	421
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law	384

Total	805
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and plague	314
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague	1,582
Total	1,896



Number of persons landed from foreign ports:		
Cabin.....	1,480	
Steorage.....	1,209	
Total.....	2,689	
Number of persons embarked for foreign ports:		
Cabin.....	1,400	
Steorage.....	1,246	
Total.....	2,646	
Number of persons arriving from coast towns on small launches and sailing craft.....	1,754	
Number of persons sailing for coast towns on small launches and sailing craft.....	1,633	
Apparent increase for month from coast towns.....	121	
Apparent increase for month from foreign ports:		
Cabin (increase).....	80	
Steorage (decrease).....	37	
Total (increase).....	43	
Number of immigrants recommended for deportation.....	22	
Number of bills of health issued or vised.....	108	
Number of inspections of docks.....	104	
Number of inspections of vessels at docks.....	189	
Number of persons landing.....	4,443	
Less number for Pacific ports.....	239	
Total.....	4,204	
Total number of persons sailing.....	4,279	
Total apparent decrease for month.....	75	

The immigration report for Colon, which is the port receiving the majority of passengers, classifies the immigrants during November, by places of origin, as follows:

From	Cabin	Steorage
Europe.....	16	31
United States.....	548	34
Jamaica and West Indies.....	158	353
Venezuela.....	11	6
Colombia.....	89	156
Cuba.....	26	19
Costa Rica.....	143	24
Bocas del Toro.....	35	121
Coast towns.....		186
Total.....	1,026	930

Of the 1,956, the men numbered 907; women, 601; children, 262; and 186 were not classified.

#### Method of Distributing Annual Reports.

The blanks which were distributed last week for applications for copies of the Annual Report of The Panama Canal were designed to facilitate the distribution of the reports. The employee will write his name and address on the form, below a perforated line, and thus return with his application an addressed mailing slip. The Government Printing Office in Washington will wrap the reports and deliver them to the Washington office of The Panama Canal. The mailing slips giving addresses in the United States will be sent to the Washington office, which will mail such reports, and avoid the rehandling which would result from sending all reports to the Isthmus to be mailed. For distribution on the Isthmus the required copies will be shipped in bulk, to be distributed to the Canal Zone post-offices by the Executive Office. The local mailing slips will be sorted by location and sent to the respective post-offices with the requisite number of reports. The postmaster will distribute the slips to the addressees. On the reverse side of the slip will be directions to present it to the postmaster for a copy of the Annual Report, receipt of which is to be acknowledged in an indicated space.

#### Obituary.

Low E. Odum, aged 38 years, employed by the Dredging Division as mate on dredge No. 83, died in Colon Hospital on December 6. His address in the United States was 518 College Street, Birmingham, Ala.

## RANGES OF TEMPERATURE.

Usually Greater in Dry Season than in Rainy.—  
Temperatures in Shade and Sunshine.

The minimum temperature recorded at Balboa Heights during November, 1915, was printed in the resumé of weather conditions during the month published in THE CANAL RECORD of last week as 79° Fahrenheit. This should have been 70°. During the current year the minimum temperature at Balboa Heights was above 72° in only one month, June, 1915, when it was 74°. The lowest temperature recorded at Balboa Heights during that time was 69°, in January.

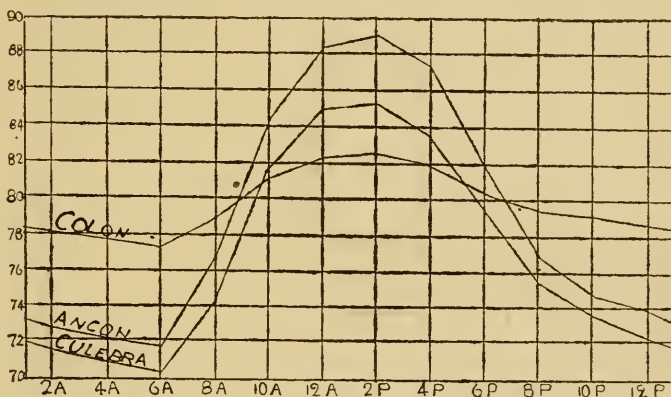
The lowest temperature recorded on the Isthmus since the American occupation is 59°, registered at Culebra on February 9, 1907. The highest temperature ever recorded is 97.4°, which was shown by the French records to have been reached at Alhajuela in April, 1903. A temperature of 96.6° is shown by the American records to have occurred at Ancon on April 7, 1912. The greatest range of temperature in one day occurred on the day when the high record was made at Alhajuela, and was between 97.4° and 63.2°, a range of 34.2°. The average daily range at the stations representing the

during the dry season permits the earth's surface to receive the maximum amount of solar radiation during the day and to lose the maximum amount of heat during the night by outward radiation. Extreme examples of this radiation are found in very dry countries which are very hot by day but cold at night, but as the dryness of the air on the Isthmus is seldom very marked (the mean relative humidity for a month very infrequently being less than 70) the phenomenon is scarcely noticeable.

Average air temperatures on the Isthmus change very little from month to month, the climate being unusually uniform in this respect. The month of highest average temperature is April and the month of lowest average temperature is November.

The average variations of temperature during the day at the three representative stations during the dry season are shown in the accompanying chart. The temperature scale (ordinates) is in units of two degrees Fahrenheit, and the abscissas indicate the time of day, in periods of two hours. The chart is based on six years of records at Colon, eight at Ancon, and seven at Culebra.

The figures which have been cited here, and are usually given for temperature, are for air



AVERAGE RANGE OF TEMPERATURE THROUGHOUT THE DAY, IN THE DRY SEASON.

Pacific coast, the central plateau, and the Atlantic coast, respectively, is shown in the following table:

Station.	Dry season.	Rainy season.	Years of record.
Ancon.....	19.1	14.5	8
Culebra.....	17.2	13.8	7
Colon.....	6.8	8.9	6

It will be seen that the maximum daily range at Colon occurs in the rainy season, instead of in the dry season, as at the other stations. The explanation of this difference lies in the seasonal variations in the prevailing direction of the winds on the Atlantic side. Air temperatures are more uniform over areas of water than over land areas, similarly located. In the dry season the winds at Colon blow steadily from the Caribbean Sea, with its fairly constant temperature, but in the rainy season a large proportion of the winds come from the land areas to the southward.

The absolute maximum and minimum temperatures for the year usually occur in the dry season. The comparatively clear sky

temperature in the shade. The temperature in the sun may be judged from this comparison of the average temperatures of shade air and of a piece of steel exposed to the sun, for a period of nine days, with observations recorded at intervals of one hour:

Hour.	Temperature of		Hour.	Temperature of	
	Air	Steel		Air	Steel
6 a. m....	72.7	71.2	1 p. m....	86.9	101.4
7 a. m....	73.0	75.3	2 p. m....	89.3	100.2
8 a. m....	76.4	82.0	3 p. m....	86.8	98.8
9 a. m....	80.7	90.2	4 p. m....	85.2	95.4
10 a. m....	82.4	93.7	5 p. m....	82.4	88.7
11 a. m....	84.7	96.3	6 p. m....	80.4	83.1
12 noon....	86.0	98.2			

The extent to which the sun is obscured by clouds is the principal factor in determining the excess of temperature in the sun over temperature in the shade.

Heavy seas in Limon Bay the first of this month interrupted for a day the hauling of concrete blocks on barges for repairing the West Breakwater. The seas did no additional damage to this or the new East Breakwater under construction.

### CLUBHOUSE AT ANCON.

To Embody Improved Features as Result of Experience.—Built From Clubhouse Funds.

The Canal clubhouse being constructed at Ancon will embody in its interior arrangements features of convenience adopted as the result of experience in the management of the earlier clubhouses. The design of the building has been limited by the inclusion, as a wing, of the building formerly used as the district quartermaster's storehouse and office and as a lodge hall, but this wing will be very comfortably adopted to its new uses. The lodge hall will remain as it is for the use of fraternal societies, and will have its present entrance, which will be at the rear of the clubhouse, and a door leading to another flight of stairs within the clubhouse for emergency use. The dental offices occupying a part of the ground floor of the building will remain there for the present. The remainder of the first floor will be used as an integral part of the clubhouse.

The clubhouse will face in the direction of the police station and commissary store at

Ancon. The lodge hall building will form a wing on the right as one enters the clubhouse, and a short central building will connect it with a symmetrical wing, the extreme corner of which will reach almost to the railway track serving the commissary. The wings are to be 40 by 95 feet in plan and the connecting building will be 30 feet long by 52 feet deep. The whole structure will be two stories in height.

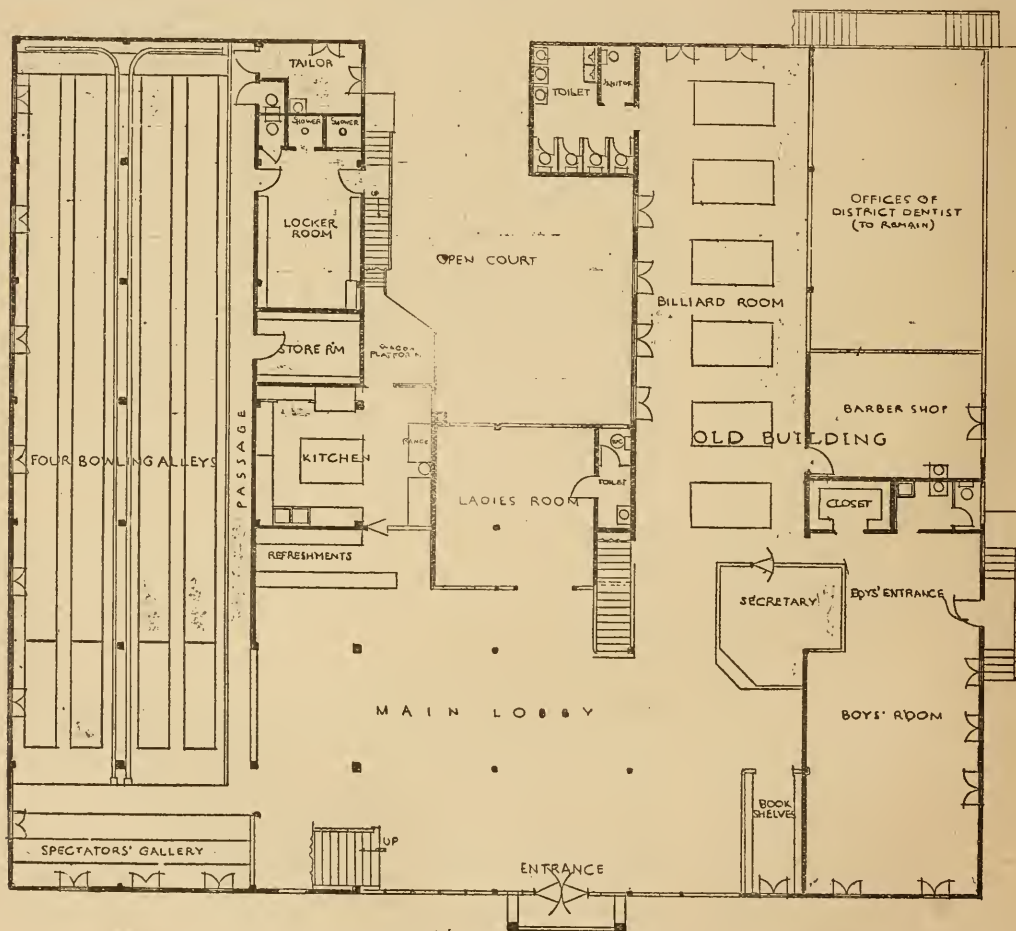
The main entrance will be at the center of the front of the connecting building. The front doors will give onto a wide, screened room forming practically one large lobby, as the interior divisions will be separated by low walls or railings rising only three feet above the floor.

The lobby will be considerably larger than in the present clubhouses. It will contain, on the right of a person entering the building, the library, separated by a 3-foot railing; beyond, a general lounging room, a refreshment room and counter, a ladies' alcove, and the office of the secretary.

It will be adjoined by a billiard room with

space for six tables. The secretary's office will be so situated as to allow supervision from the desk of all the other rooms named, and also of the separate boys' room, which will be one of the features of the house. This will be on the extreme right as one enters, and will have a separate entrance, from the side road, and separate lavatory. The wall between it and the lobby will extend to the ceiling except in that part adjoining the office of the secretary, where it will be open above a level of approximately three feet above the floor. The boys' room and lavatory, the barber shop, the billiard room, the secretary's office, and part of the lobby will be on the ground floor of the right wing, or the lodge hall building.

The left or new wing of the building will contain two pairs of bowling alleys, occupying the greater part of the first floor; at the extreme rear end a tailor shop, adjoining which, on the side nearest the front of the building, will be a locker room, then a storeroom, and the kitchen for serving the refreshment



PLAN OF FIRST FLOOR OF CANAL CLUBHOUSE TO BE ERRECTED IN ANCON.

## OFFICIAL CIRCULARS.

## Rebuilt Floating Equipment.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., December 9, 1915.  
HEADS OF DEPARTMENTS AND DIVISIONS:

It has come to my notice that certain units of floating equipment have not only been rebuilt, but their nature entirely changed, under an authority for general repairs. Whenever a unit of floating equipment is in such bad condition that its rebuilding is necessary, a survey request should be prepared for its condemnation, and if it is desired to replace it authority should be obtained for construction of a new unit. If it is desired to add the same number or name to a rebuilt unit, the word "new" in the case of a unit designated by number, or "11" if designated by name, must be used.

Geo. W. Goethals,  
Governor.

## Mooring for Private Boats.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., December 2, 1915.  
CIRCULAR No. 693-1:

1. There are moorings available in the harbor of Balboa for privately owned launches and boats. These moorings are located in the old French channel, to the southward and eastward of the present oil crib.
2. All buoys numbered "3" and above may be rented for the use of launches and boats. All privately owned boats and floating property in the port of Balboa will be required to use these moorings or anchor in berths assigned by the Captain of the Port.
3. The rent for a mooring buoy will be 50 cents per month, one year's rent paid in advance.
4. Upon application of the lessee for the cancellation of his lease, refund will be made at the monthly rate for any remaining months of the year. If a mooring be used any part of a month, a charge will be made for the full month.

Geo. W. Goethals,  
Governor.

## Written Inquiries Concerning Employment.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., December 8, 1915.  
HEADS OF DEPARTMENTS AND DIVISIONS:

All written inquiries from employees or others respecting employment or reemployment should be referred to the Executive Office, for attention of Personnel Bureau. No employee may be reemployed until information is secured from the Personnel Bureau that his reemployment is allowable under the regulations.

Geo. W. Goethals,  
Governor.

## Reimbursement for Meals.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., January 1, 1915.  
CIRCULAR No. 658-2:

1. Effective January 1, 1916, paragraph 7 (a) of circular No. 658, dated April 1, 1914, is amended to read as follows:
2. Employees who do not board at a Panama Canal hotel, but keep house or board at a monthly rate when at their official stations, are entitled to reimbursement of not to exceed 40 cents per meal for the noon and

evening meal, or a total of 90 cents per day when detained to a place where there is a Panama Canal hotel having *à la carte* service only. At hotels where the regular 30-cent meal is served, reimbursement will be made at the rate of 30 cents per meal.

Geo. W. Goethals,  
Governor.

## Acting Chief of Police and Fire Division.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., December 6, 1915.  
HEADS OF DEPARTMENTS AND DIVISIONS:

Effective December 9, during the absence on leave of Captain H. D. Mitchell, Inspector Gay Johannes will be Acting Chief of the Police and Fire Division.

Geo. W. Goethals,  
Governor.

## Treatment in Hospitals and Elsewhere.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., November 13, 1915.  
CIRCULAR No. 618-6.

Circular No. 618-5 of May 15, 1915, fixing rates and regulations for hospital and medical service, is hereby amended.

## RATES FOR X-RAY SERVICE.

1. Effective December 1, 1915, the charge "X-Ray—\$10 to \$30," listed in the schedule of operations on page 4, is corrected to read as follows:

X-ray examination for dental work, employees (flat rate), \$2. Non-employees (flat rate), \$5. X-ray examination, others (elective), \$5 to \$50.

With the approval of the superintendent of the hospital, X-ray examinations of injured employees under treatment in the hospital for injuries incurred in the line of duty, may be made without charge upon the written request of the chief of the service involved, stating that the examination desired is absolutely essential for the proper treatment of the case.

## RATES FOR LABORERS AND ARTISANS EMPLOYED BY OUTSIDERS.

2. Effective November 15, 1915, laborers and artisans (the class designated in the service of The Panama Canal as "silver employees") who are regularly employed by individuals or companies in the Canal Zone, will be accorded the same rates in Ancon and Colon Hospitals as those authorized for families of Panama Canal employees whose monthly pay exceeds \$100 and is not over \$150; except that a charge of \$1 will be made for office consultation at a hospital or dispensary. These rates will also apply to the treatment of dependent members of families of such laborers and artisans.

Geo. W. Goethals,  
Governor.

## Christmas and New Year's Train Schedules.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., December 10, 1915.  
CIRCULAR No. 237:

To all concerned—On account of Saturday, December 25, 1915, and Saturday, January 1, 1916, being legal holidays, the regular Saturday night schedule of trains on the Panama Railroad will be in effect on Friday evening, December 24, and Friday evening, December 31, and the regular Sunday schedule of trains will be in effect on Saturday, December 25, 1915, and Saturday, January 1, 1916.

C. H. Motsett,  
Superintendent.

## Temporary Transfers in Division of Terminal Construction.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,  
BALBOA HEIGHTS, C. Z., December 6, 1915.

To all concerned—Effective December 16, and during the absence on leave of Superintendent W. G. Thompson, Junior Engineer R. A. Wilson will be in charge of construction and the inspection of contract work on the Cristobal coaling plant.

Effective December 13, and during the temporary absence of Junior Engineer R. A. Wilson, Mr. J. J. Duffy will act as Inspector for The Panama Canal of contract work in connection with the manufacture at Gamboa of concrete blocks for the Atlantic breakwaters.

H. H. Rousseau,  
Engineer of Terminal Construction.

## Transfer of Property from Accountable Officials to Stores.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., December 9, 1915.  
To accountable officials and storekeepers—The instructions contained in my circular letter addressed to accountable officials and storekeepers under date of

counter. There is to be a stair leading directly from the locker room to the gymnasium.

On the second floor, the right wing as one enters the building will be devoted entirely to the lodge hall, as at present; the front, central building will contain a large reading room, 30 by 52 feet in plan, and the left wing will house the gymnasium or auditorium, 40 by 76 feet, exclusive of the stage. This will be the largest hall of its sort in any of the clubhouses, being six feet wider and 18 feet longer than the Balboa gymnasium, and will have a high ceiling, 20 feet above the floor. The lights are to be countersunk in the ceiling. The height of the room will be a great advantage in moving picture shows, for the reason that the pictures may be projected onto a screen well above the heads of the patrons. There will be a stage at the rear of the hall for theatrical performances, and this stage will be wider and deeper than the stages of the present clubhouses. It will be 23 feet eight inches wide by 18 feet deep, with dressing rooms on either side.

Unlike any of the preceding clubhouses, the Ancon clubhouse will be built solely with clubhouse funds. The money to be expended for it will be the accumulated earnings of the ice cream and tobacco counters and other enterprises at the different clubhouses along the line, through the past eight years. The building will be erected along simple, utilitarian lines, without architectural embellishment. A great deal of equipment removed from abandoned clubhouses in villages turned over to the Army forces will be used in furnishing the new clubhouse. The bowling alleys will come from Culebra and Corozal, and the Corozal clubhouse will furnish a great part of the billiard room, gymnasium, and library equipment.

## Thirty Thousand More Red Cross Seals.

Since the first consignment of 30,000 Red Cross Christmas seals for the season of 1915 was disposed of on the Isthmus, the central organization at Washington has sent 30,000 more in response to a request from the Canal Zone Chapter for 25,000 more. The second consignment has been distributed and it is the belief of the secretary of the chapter, who has the sale in his direct charge, that nearly all of the seals will be disposed of, though in some parts of the Canal Zone the market appears to have been overstocked.

## Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Brown, George.....	76925	Jamaica.....	Camp Bird.....	Supply Dept.....	Dec. 5, 1915.
Gonzalez, José del R.....	23796	Panama.....	Dredging Div.....	Dredging Div.....	Nov. 23, 1915.
Harrison, David.....	36315	Jamaica.....	Gatun.....	Gatun Locks.....	Dec. 7, 1915.
McFarland, Henry.....	88958	Jamaica.....	Colon.....	Panama Canal.....	Dec. 6, 1915.
Odum, Lew E.....	1069	U. S. A.....	Colon Beach.....	Dredging Div.....	Dec. 6, 1915.

## Insane Employees.

Name.	Check No.	Native of	Isthmian Residence	Employed by	Date of commitment
Francis W. Woolford.....	122	U. S. A.....	Ancon.....	Accounting Dept.	Dec. 1, 1915.

The estates of the abovementioned deceased and insane employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



December 4, 1915, regarding transfer of property from accountable officials to stores, are to be disregarded and the following substituted therefor:

When an item of property is carried on the property records of an accountable official at a price other than that of the storehouse inventory price, is turned in to stock, the accountable official will invoice at the property record price, and the storekeeper will accept at storehouse inventory price by noting that price under "Remarks" on invoice. The difference in value will be adjusted by the Accounting Department.

AD. FAURE,  
Chief Accountant.

#### Disposition of Obsolete Rubber Stamps.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., November 16, 1915.

To all concerned—It is noted that rubber stamps which are obsolete are sometimes thrown into the waste baskets and carried out with the garbage.

This practice must be discontinued, and all rubber stamps must be saved for return to the printing plant.

All employees of the Administration Building should send their rubber stamps to the storekeeper, basement, as soon as they become unusable or surplus, and the storekeeper will arrange for shipment to the printing plant, Mount Hope.

C. A. McILVAINE,  
Executive Secretary.

#### JOINT LAND COMMISSION.

##### Notice of Award.

In the matter of the claim of R. Lasso R., for property located near Caimito Mulato, award No. 98, docket No. 1092, October 23, 1915—An award is hereby made against the United States, in favor of the person hereinafter named, in the sum of \$350 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 23rd day of November, 1915, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

R. Lasso R., docket No. 1092—For all right, title, and interest which the said R. Lasso R. may possess or have possessed in and to crops, fruit trees, and any other improvements on lands at Caimito Mulato, the sum of \$350 United States currency.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI MONROE KAGY, Commissioners.

In the matter of the claim of Claris McMakin, for property located at Bohio, award No. 101, docket No. 854, November 8, 1915—An award is hereby made against the United States, in favor of the person hereinafter named, in the sum of \$100 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 8th day of December, 1915, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

Claris McMakin, docket No. 854—For all right, title, and interest which the said Claris McMakin may possess or have possessed in and to crops, fruit trees, and any other improvements near Bohio, the sum of \$100 United States currency.

R. J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, Commissioners.

I do not concur in the above award.

L. M. KAGY, Commissioner.

##### Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 106, docket numbers as noted, September 4, 1915—With reference to the claims set out below, at a public session of the Commission held on September 2, 1915, counsel for the Government moved a dismissal of these claims on account of settlement having been made with the claimants thereunder. Upon an examination of the evidence by the Commission and by counsel on both sides, it was agreed that the claims be dismissed;

Docket No. Claimant. Location.  
954. John Smith.....Las Cascadas Plantation.  
955. Samuel Lawrence.....Las Cascadas Plantation.  
960. W. A. Burke.....Las Cascadas Plantation.  
961. W. Barnes.....Las Cascadas Plantation.  
969. Santa Casas.....Las Cascadas Plantation.

In view of such settlements, no further action is necessary by the Commission and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, LEVI MONROE KAGY, S. LEWIS, Commissioners.

In the matter of sundry claims, rule of dismissal No. 198, docket numbers as shown, October 11, 1915—With reference to the claims set out hereinbelow, at a public session of the Commission held on this date, counsel for

the Government moved a dismissal of these claims on account of settlement having been made with the claimants thereunder. Upon an examination of the evidence by the Commission and by counsel on both sides, it was found by the Commission that payment had been made, as follows:

Docket No.	Claimant.	Tax No.	Date of payment.
978	Isaac Lowe.....	377	1-9-15
983	Maria Jil Roanes.....		11-10-10
984	Joseph Malabre.....		1-4-12
987	José L. Arias.....		4-17-11
1007	Alfred Darkin.....		8-1-15

In view of such settlements, no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI MONROE KAGY, Commissioners.

In the matter of sundry claims, rule of dismissal No. 206, docket numbers as noted, October 29, 1915—With reference to the following claims, the evidence before the commission is that settlement therefor has been made by the United States:

Docket No.	Claimant	Tax No.	Date of Payment.
1277	James Campbell.....		6- -15
1305	Thomas Beckford.....	1274	3-27-15
1401	George Edwards.....		5- -15
1806	Juan Fuentes.....		12- -13
1818	Manuel (Sacramento) Cervantes.....		12- -13
1826	Cristino Nasa (Naza).....		12-27-15
1832	Bias Ramos.....		6- -13
1834	Catilino Ranjel (Rangel).....	267	11- -13
1835	José Angel Ranjel (Rangel).....	200	11- -13
1836	José Ines Ranjel (Rangel).....	256	11- -13
1837	José de los Santos Ranjel (Rangel).....		252 5- -13
1838	José Maria Ranjel (Rangel).....	138	18- -13
1841	Manuel I. Ranjel (Rangel).....		1- -14
1842	Nicolas Ranjel (Rangel).....		4-02 11- -13
1847	Marcial Reyes.....	251	11- -13
1893	Juana Paula (Pabla) Rodríguez.....		797 7- -14
2448	José Dolores Magallon.....	1598	10- -15
2512	Martin Torres.....		12- -14
2544	Maria Carla (Carles) Villavardé.....		901 3- -14
2609	Nicolas Ranjel (Rangel).....		11- -13
2628	Martin Torres.....		12- -14
3205	Henrique Rivera.....	879	8- -14
3371	Coches Bros. (Victor H. Cochez and F. V. Cochez).....		1590 4- -14
3479	Juan Fuente.....		12- -13

In view of the above settlements, no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of the claim of Manuela Camargo, for property located near Buena Vista, rule of dismissal No. 232, docket No. 1120, November 20, 1915—The claim of Manuela Camargo, docket No. 1120, which came on for hearing November 11, 1915, is hereby disallowed as the evidence presented to the Commission does not justify an award being made.

FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

I do not concur in the above dismissal.

RICARDO J. ALFARO, Commissioner.

In the matter of sundry claims, rule of dismissal No. 228, docket numbers as noted, November 11, 1915—With reference to the following claims, the evidence before the Commission is that settlement therefor has been made by the United States:

Docket No.	Claimant.	Tax No.	Date of payment.
819	Adolphus Minzio.....		5- -15
1113	Pablo Vergara.....		4- -11
1199	Leah Lowe.....	378	1- -15
1313	Luisa Ariana.....		7- -14
1802	Manuel Coronado.....	1776-A	4- -15
1814	José Herrera.....	1779-A	10-18-13
1822	Francisco Monroy.....		11- -13
1864	Saturnino Cueva.....	254	11- -13
3427	Santiago Espinosa.....	2960	2- -14
3232	Clemente Galvan, Bis.....	893	8-12-14
3237	Victorina Padilla.....		9- 4-14
3238	Pedro Zalazar.....		8- -14
3250	Pedro Zalazar.....		8- -14
3258	Seferino Pacheco.....	877	8- -14
3419	Thomas Bailey.....	510	1- -15
3429	Virginia Rivera.....		2- -15
3440	Francisco Castillo.....	1781	10- -13
3516	José Ma Amor.....	1231-P	4- -15
3570	Margaret Marcotte.....	900	4- -15

In view of the above settlements, no further action is necessary by the Commission and the foregoing claims are therefore dismissed.

RICARDO J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

#### COMMISSARY DEPARTMENT.

##### Sale of Toys.

THE PANAMA CANAL,

SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., December 11, 1915.

BULLETIN No. 504:

To commissary managers—Effective Monday, December 13, 1915, all unsold Christmas toys will be concentrated at Ancon and Cristobal commissaries.

Other commissaries will take orders for toys from customers, which are known to be on hand at either of these two commissaries, and telephone to have them transferred for sale.

Please bring this to the attention of your customers.  
BENJ. L. JACOBSON,  
Depot Commissary.

##### Sale of Fruit Cakes.

THE PANAMA CANAL,

SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., December 10, 1915.

BULLETIN No. 502:

To commissary managers—One dollar fruit cakes for Christmas will be ready for sale on and after December 20, 1915.

Please advertise this fact at once, and begin taking orders for delivery on and after that date, so as to be able to "phone this office approximately what your requirements will be. Your first order should be "phoned to this office on December 18, 1915.

BENJ. L. JACOBSON,  
Depot Commissary.

##### Minton China at Smaller Stores.

THE PANAMA CANAL,

SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., November 19, 1915.

BULLETIN No. 443:

To commissary managers—It has come to my attention that an erroneous impression is prevalent, to the effect that no Minton chinaware will be stocked in the smaller commissaries.

A small stock of the most popular patterns will be kept at the smaller commissaries, and one piece of each shape of the more expensive kind will be carried, more as a sample than as an item of stock, but which may be sold to a customer if desired, and replaced by requisition on this depot in the usual manner. Should a customer desire to purchase any quantity of china of a particular pattern selected from samples, a requisition placed on this depot will be filled for delivery following the morning of its receipt.

Please advise your patrons as above.

BENJ. L. JACOBSON,  
Depot Commissary.

##### Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective December 16 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list gives retail prices of cold storage provisions which will be effective December 16, 1915. The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.	Price.
Beef, suet, special, per lb.....	\$ .03½
Beef, suet, native, per lb.....	.. .03½
Soup beef, special, per lb.....	.. .07
Soup beef, native, per lb.....	.. .05
Soup bone, special, per lb.....	.. .02½
Soup bone, native, per lb.....	.. .02½
Stew beef, special, per lb.....	.. .11
Stew beef, native, per lb.....	.. .08
Plate beef, special, per lb.....	.. .12
Plate beef, native, per lb.....	.. .08
Chuck roast (3 lbs. up), special, per lb.....	.. .12
Chuck roast (3 lbs. up), native, per lb.....	.. .08
Rib roast, 2d cut (3½ lbs. up), special, per lb.....	.. .16
Rib roast, 2d cut (3½ lbs. up), native, per lb.....	.. .09

	Price.
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Pot roast, special, per lb.	.20
Pot roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse steak, choice, per lb.	.31
Porterhouse steak, special, per lb.	.22
Porterhouse steak, native, per lb.	.16
Chuck steak, special, per lb.	.13
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.20
Rump steak, special, per lb.	.12
Rump steak, native, per lb.	.12
Porterhouse steak (14 lbs. up), choice, per lb.	.34
Porterhouse steak (14 lbs. up), special, per lb.	.23
Porterhouse steak (14 lbs. up), native, per lb.	.17
Porterhouse steak, short, choice, per lb.	.28
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25
Tenderloin steak, western, special, per lb.	.27

## FRESH MEATS.

Lamb chops, per lb.	.29
Lamb chops, shoulder, per lb.	.20
Lamb, legs, 5 to 8 lbs., per lb.	.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.15
Lamb, stewing, per lb.	.12
Mutton chops, short cut, per lb.	.12
Mutton chops, shoulder, per lb.	.17
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.09
Pork hams, fresh (see footnote), per lb.	.25 1/2
Pork loins, chops, or roast, per lb.	.24
Pork, shoulders, per lb.	.20 1/2
Veal chops, per lb.	.40
Veal chops, shoulder, per lb.	.21
Veal cutlets, per lb.	.45
Veal, loin for roasting, per lb.	.40
Veal, shoulder for roasting, not under 4 lbs., per lb.	.20
Veal, stewing, per lb.	.16

## MISCELLANEOUS.

Brains, calves', per lb.	.07
Calves' heads, ea.	.67 1/2
Kidneys, beef, per lb.	.07
Livers, beef, per lb.	.08
Livers, calves', per lb.	.26
Pates de foie gras, per lb.	.67
Pigs' feet, fresh, per lb.	.06
Pigs' head, fresh, whole, ea.	.38
Pigs' heads, fresh, 1/2 head, half.	.42
Sausage, bologna, per lb.	.19
Sausage, frankfurter, per lb.	.19
Sausage, liebwurst, per lb.	.19
Sausage, pork, per lb.	.20 1/2
Sausage, pork, bologna, per lb.	.20
Sausage, Salami, per lb.	.30
Spare ribs, pork, per lb.	.17
Steak, hamburger, pkg.	.17
Steak, hamburger, per lb.	.14
Sweetbread, beef, per lb.	.19
Tails, ox, per lb.	.09
Tongue, beef, native, whole, per lb.	.20
Veal, per lb.	.31
Vest, cake.	.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.31
Bacon, breakfast, sliced, per lb.	.32
Bacon, sliced, jar.	.32
Bacon, sliced, tin.	.32
Bacon, squares, whole square, per lb.	.19
Bacon, strips, whole strip.	.20
Beef, corned—No. 1, per lb.	.15
Beef, corned—No. 2, per lb.	.12
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.13
Ham, shoulders, boneless, sugar cured, whole, per lb.	.17
Ham, sugar cured (whole) per lb.	.24
Ham, sugar cured (half) per lb.	.27
Ham, sugar cured (sliced) per lb.	.32
Ham, sugar cured, boneless, whole, per lb.	.30 1/2
Ham, sugar cured, boiled (half).	.33 1/2
Ham, sugar cured, boiled (sliced).	.38 1/2
Pigs' feet, pickled, per lb.	.08
Pork, bellies, per lb.	.20
Pork, clear, per lb.	.11
Pork, standard meat, per lb.	.11
Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs', per lb.	.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	.31
Broilers, milk fed, per lb.	.34
Capons, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.28
Chickens, fancy roasting, milk fed, per lb.	.33
Ducklings, per lb.	.26
Fowls, light, per lb.	.23
Pheas, western, dry pickled, per lb.	.25
Game, per lb.	.18 1/2
Grouse, ea.	.60
Squabs, ea.	.45
Turkeys, per lb.	.32

## DAIRY PRODUCTS.

	Price.
Butter, creamery special, per lb.	.47 1/2
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.46 1/2
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, ea.	1.50
Cheese, Edam, tin.	.39
Cheese, Gouda, per lb.	.32
Cheese, Parmesan, per lb.	.30
Cheese, Philadelphia cream, cake.	.09
Cheese, Roquefort, per lb.	.51 1/2
Cheese, snappy, cake.	.09
Cheese, Swiss, per lb.	.40
Cheese, Young America, per lb.	.22
Cream, 30 per cent, 4 pt.	.17 1/2
Cream, 30 per cent, 1 qt.	.29 1/2
Cream, 30 per cent, 1/2 gal.	.29 1/2
Eggs, fresh, per doz.	.47 1/2
Eggs, fresh, 4 doz. (only).	.24 1/2
Fer-mil-lac, bottle.	.25 1/2
Ice cream, (see footnote) 4 gal.	.50 1/2
Milk, Sheffield farms, qt.	15 1/2
Oleomargarine, per lb. carton.	.29

## FISH.

Bluefish, fresh, per lb.	.19
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.08
Halibut, fresh, per lb.	.11
Herring, smoked, per lb.	.11
Oysters, fresh, per qt.	.39
Salmon, fresh, per lb.	.12
Whitefish, smoked, per lb.	.18

## VEGETABLES.

Beets, per lb.	.02
Biscuits, sirups, per lb.	.19
Cabbage, per lb.	.01 1/2
Carrots, per lb.	.02 1/2
Cauliflower, per lb.	.01
Celery, per lb.	.09
Cuccho, each.	.02
Cucumbers, per lb.	.14
Eggplant, per lb.	.12
Lettuces, per lb.	.03
Onions, per lb.	.03 1/2
Parsnips, per lb.	.02 1/2
Peppers, green, per lb.	.13
Plantains, per lb.	.12
Potatoes, white, per lb.	.02 1/2
Potatoes, sweet, American, per lb.	.03
Potatoes, sweet, tropical, per lb.	.02
Squash, per lb.	.03
Tomatoes, per lb.	.06 1/2
Turnips, per lb.	.01 1/2
Yams, luca, per lb.	.03

## FRUITS, DRIED.

Apples, evaporated, per lb.	.13
Apricots, evaporated, per lb.	.14
Currants, cleaned, pkg.	.13
Figs, 15-oz. box.	.21
Peaches, evaporated, per lb.	.07
Pears, evaporated, per lb.	.18
Peel, citron, per lb.	.22
Peel, lemon, per lb.	.16
Pine, orange, per lb.	.23
Prunes, stewed, per lb.	.09
Raisins, dried, pkg.	.10
Raisins, table cluster, per lb.	.23

## FRUITS, FRESH.

Apples, fresh, per lb.	.04
Apples, fresh, select, per lb.	.05
Bananas, 8 hands and over, per bunch.	.40
Bananas, 6 and 7 hands, per bunch.	.28
Bananas, ea.	.04
Coconuts, ea.	.05
Cranberries, per lb.	.09
Grapes, Malaga and Tokay, per lb.	.13
Grapefruit, select, ea.	.07
Grapefruit, tropical, ea.	.03 1/2
Lemons, per doz.	.18
Limes, per 100.	.12
Oranges, select, per lb.	.08
Oranges, standard, per lb.	.05
Pears, fresh, per lb.	.05 1/2
Tangerines, ea.	.01 1/2

\* Indicates advances from preceding list.  
 \*\* Indicates five cents allowed for return of bottle.  
 † Indicates reduction from preceding list.  
 ‡ Sold only from commissaries, no orders taken for delivery.  
 § Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Commissary Hours.

The open hours of the various commissary stores are as follows:  
 The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.  
 The Cristobal store is open from 8 a. m. to 12 m., and 1.30 to 5.30 p. m.  
 All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.  
 The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and selling days of Panama Railroad vessels.

## SHIPPING INFORMATION.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, December 11, 1915:

DAY AND DATE.	STATIONS.				
	Alajuela	Gatun	Miraflores	La Chorrera	La Chorrera
Sun., Dec. 5.	130.25	95.52	86.04	86.01	54.27
Mon., Dec. 6.	129.25	95.20	86.04	86.03	54.33
Tues., Dec. 7.	131.60	96.57	86.04	86.08	54.47
Wed., Dec. 8.	130.60	95.78	86.08	86.01	54.40
Thurs., Dec. 9.	128.10	94.24	86.04	86.03	54.22
Fri., Dec. 10.	127.60	93.72	86.08	86.02	54.25
Sat., Dec. 11.	127.60	93.71	86.06	86.02	54.26

Heights of low water to nearest foot.

125.0 91.0

## Taboga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5.30 p. m.; Monday, Thursday, Saturday, and Sunday, at 9.40 a. m.

Leave Taboga—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier); Monday, Thursday, and Saturday at 1.30 p. m.; Sunday at 7.15 p. m. The 9.40 a. m. trips from Balboa await the arrival of Panama Railroad trains.

There will be no 5.30 p. m. trip from Balboa on Sundays and holidays, unless the number of guests desiring transportation from Taboga exceeds the number that the launch is able to take in one trip; in which case a trip will be started from the Aspinwall landing at 3 p. m., reaching Balboa in time to leave again at 5.30.

## Fuel and Water.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 50 shillings per ton. Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

## Tide Predictions.

Panama (Balboa) tide predictions until January 21, 1916, are given in this table:

DECEMBER.				
DATE.	Time and height of high and low water.			
Wed., Dec. 15.	4.34	10.52	16.53	23.22
	3.1	11.7	3.5	12.6
Thurs., Dec. 16.	5.39	12.95	17.57	24.10
	3.3	11.5	3.9	12.6
Fri., Dec. 17.	0.27	6.38	13.11	18.55
	12.4	3.2	11.7	3.9
Sat., Dec. 18.	1.22	7.42	14.05	19.51
	12.6	2.8	12.1	3.7
Sun., Dec. 19.	2.12	8.21	14.51	20.37
	12.8	2.4	12.5	3.4
Mon., Dec. 20.	2.55	9.43	15.32	21.50
	13.2	2.0	12.9	3.0
Tues., Dec. 21.	3.33	9.45	16.07	22.01
	13.5	1.5	13.3	2.6
Wed., Dec. 22.	4.09	10.24	16.41	22.40
	13.8	1.2	13.6	2.4
Thurs., Dec. 23.	4.45	11.02	17.17	23.19
	13.9	1.0	13.8	2.3
Fri., Dec. 24.	5.20	11.39	17.52	23.17
	13.9	1.0	13.9	2.3
Sat., Dec. 25.	5.55	12.17	18.26	23.17
	13.8	1.2	13.9	2.3
Sun., Dec. 26.	6.37	13.00	18.54	23.16
	2.4	13.5	5.5	13.8
Mon., Dec. 27.	1.18	7.07	13.33	19.37
	2.5	13.2	1.9	13.6
Tues., Dec. 28.	2.01	7.49	13.15	20.16
	2.7	12.8	2.3	13.5
Wed., Dec. 29.	2.49	8.35	15.03	21.04
	2.8	12.4	2.8	13.3
Thurs., Dec. 30.	3.42	9.31	15.56	21.59
	2.9	12.1	3.1	13.3
Fri., Dec. 31.	4.40	10.36	16.56	23.02
	2.7	12.1	3.2	13.4



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., December 12, 1915.)

There were no vessels entering the Canal during the week for transit.

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Dec. 11....	Antonio Lopez....	Spanish Line.....	Barcelona.	Dec. 7....	Rosalie Mahony....	Olson & Mahony .....	Bluefields, Nic.
Dec. 12....	Perou.....	French Line.....	St. Nazaire.				
*EXPECTED ARRIVALS.				*EXPECTED DEPARTURES.			
Dec. 13....	Quillota.....	Pacific Steam Nav. Co....	London.	Dec. 13....	Antonio Lopez....	Spanish S. S. Line.....	Barcelona.
Dec. 14....	Orion.....	U. S. Government.....	Norfolk.	Dec. 15....	Quillota.....	Pacific Steam Nav. Co....	London, via W. I.
Dec. 15....	Cyclops.....	U. S. Government.....	Norfolk.	Dec. 17....	Perou.....	French Line.....	St. Nazaire.
Dec. 18....	Coronado....	Elders & Fryfies.....	Port Limon.	Dec. 18....	Coronado....	Elders & Fryfies.....	Bristol & w'p'ta.
					L. J. Luckenbach....	Luckenbach Line.....	New York.
					Orion.....	U. S. Government.....	
					Cyclops.....	U. S. Government.....	

## PORT OF BALBOA.

ARRIVALS.				DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Dec. 10....	Jamaica.....	Pacific Steam Nav. Co....	Buenaventura.	Dec. 7....	Capt. A. F. Lucas....	Standard Oil Co.....	San Francisco.
Dec. 11....	Chile.....	Pacific Steam Nav. Co....	Valparaiso.	Dec. 7....	S. O. Barge No. 93.	Standard Oil Co.....	San Francisco.
				Dec. 8....	Alutaro.....	Peruvian Line.....	Valparaiso.
				Dec. 10....	Aysen.....	South American S. S. Co....	Valparaiso.
				Dec. 11....	Cauca.....	Pacific Steam Nav. Co....	Guayaquil.

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

## JANUARY.

DATE.	Time and height of high and low water.		
Sat., Jan. 1.....	5:51	11:55	18:06
Sun., Jan. 2.....	2:5	12:7	19:14
Mon., Jan. 3.....	14:1	1:9	13:1
Tues., Jan. 4.....	1:19	7:57	14:00
Wed., Jan. 5.....	14:7	1:0	14:1
Thurs., Jan. 6.....	2:17	8:55	15:8
Fri., Jan. 7.....	15:3	0:0	15:0
Sat., Jan. 8.....	3:16	9:47	15:54
Sun., Jan. 9.....	15:9	-0:9	15:8
Mon., Jan. 10.....	5:58	10:36	16:48
Tues., Jan. 11.....	16:1	-1:4	16:3
Wed., Jan. 12.....	5:05	11:22	17:41
Thurs., Jan. 13.....	16:4	-1:5	16:6
Fri., Jan. 14.....	16:2	1:2	16:6
Sat., Jan. 15.....	0:35	6:48	12:56
Sun., Jan. 16.....	-0:1	15:4	-0:6
Mon., Jan. 17.....	1:27	7:35	13:45
Tues., Jan. 18.....	0:5	15:0	0:4
Wed., Jan. 19.....	2:15	8:24	14:36
Thurs., Jan. 20.....	1:2	14:1	1:5
Fri., Jan. 21.....	3:08	9:14	15:29
Sat., Jan. 22.....	2:1	13:0	2:6
Sun., Jan. 23.....	4:04	10:11	16:24
Mon., Jan. 24.....	2:8	12:2	3:6
Tues., Jan. 25.....	5:00	11:15	17:23
Wed., Jan. 26.....	3:4	1:6	4:2
Thurs., Jan. 27.....	6:01	12:22	18:24
Fri., Jan. 28.....	3:7	11:4	4:5
Sat., Jan. 29.....	0:37	7:01	13:23
Sun., Jan. 30.....	1:2	3:6	11:5
Mon., Jan. 31.....	1:32	7:57	14:15
Tues., Jan. 1.....	12:4	3:3	11:9
Wed., Jan. 2.....	2:20	8:47	15:00
Thurs., Jan. 3.....	12:7	2:7	12:4
Fri., Jan. 4.....	3:05	9:30	15:41
Sat., Jan. 5.....	13:1	2:1	12:9
Sun., Jan. 6.....	3:45	10:09	16:22
Mon., Jan. 7.....	13:5	1:6	13:4

The times are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic Survey charts for this region, and which is 8.0 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., December 15, 1915.

The following insufficiently addressed letters, originating in the United States and its possessions, have been received at the office of the Director of Posts and may be procured upon application of the addressee:

Anastopoulos, Lewis  
Anderson, Mrs. W. D.  
Barry, Captain  
Bennett, Perry  
Biancato, James  
Chadwick, J. B. O.  
Day, J. B. O.  
Dunn, Everett  
Dunn, Wilfred  
Grates, Hubert  
Hanson, J. A.  
Healey, Capt. E. A.  
Heenan, Mrs. John (paper)  
Hoffstetter, Mrs. J. F.  
Jordon, Jordon  
Kramer, Geo. A.  
Lindie, Billy  
Long, George  
McCallum, Carl  
McHone, Wiley, (card)  
Miguel, Pecho  
Phillips, J. T.  
Pinkham, Capt. V. R.  
Reardon, M. F.  
Reed, Ervie  
Sammons, Jesse  
Santon, Fred  
Teague, Ray  
Verbeck, G. S.  
Winn, Jos. R. (card)  
Winters, Harry E.

## Rainfall from December 1 to 11, 1915, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>		<i>Ins.</i>
Balboa.....	1 67	2	3 69
Balboa Heights.....	1 40	2	3 13
Miraflores.....	2 15	2	4 55
Pedro Miguel.....	1 10	2	3 08
Rio Grande.....	1 80	7	4 97
<i>Central Section—</i>			
Culebra.....	1 86	7	4 62
*Camacho.....	2 05	7	4 17
Empire.....	1 84	7	4 08
Gambou.....	3 72	7	6 09
*Juna Mina.....	0 9	8	6 56
Alhajuela.....	1 94	7	5 51
*Vigia.....	1 05	7	3 12
Frijoles.....	1 57	2	4 62
*Monte Itiro.....	2 20	1	7 51
<i>Atlantic Section—</i>			
Gatun.....	2 74	3	5 60
*Brazos Brook.....	2 45	3	6 38
Colon.....	3 48	2	6 54
*Bocas del Toro.....	98	11	3 61

\*Standard rain gage—readings at 5 p. m. daily.

†Standard rain gage—readings at 8 a. m. daily.

Automatic rain gage at unstarred stations—values midnight to midnight.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States.  
Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except

that on the *Advance* the voyage requires seven days.† Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, January 10 and February 7, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the two sailings mentioned above.

†NOTE—When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Sailings of Vessels in Regular Service with the United States.

Vessel.	Line.	Sails.	Arrives.
Zacapa.....	U. F. C. Dec.	8.....	Dec. 15
Alliancia.....	P. R. R. Dec.	9.....	Dec. 15
Calamares.....	U. F. C. Dec.	11.....	Dec. 19
Carrillo.....	U. F. C. Dec.	15.....	Dec. 22
Colon.....	P. R. R. Dec.	16.....	Dec. 22
Tenadores.....	U. F. C. Dec.	18.....	Dec. 26
Santa Marta.....	U. F. C. Dec.	22.....	Dec. 29
Advance.....	P. R. R. Dec.	23.....	Dec. 30
Metaron.....	U. F. C. Dec.	25.....	Jan. 3
Almirante.....	U. F. C. Dec.	29.....	Jan. 5
Panama.....	P. R. R. Dec.	30.....	Jan. 5
Pastores.....	U. F. C. Jan.	1.....	Jan. 10
CRISTOBAL-COLON TO NEW YORK.			
Panama.....	P. R. R. Dec.	16.....	Dec. 22
Almirante.....	U. F. C. Dec.	16.....	Dec. 23
Pastores.....	U. F. C. Dec.	20.....	Dec. 28
Alliancia.....	P. R. R. Dec.	23.....	Dec. 29
Zacapa.....	U. F. C. Dec.	23.....	Dec. 30
Calamares.....	U. F. C. Dec.	27.....	Jan. 4
Colon.....	P. R. R. Dec.	30.....	Jan. 5
Carrillo.....	U. F. C. Dec.	30.....	Jan. 6
Tenadores.....	U. F. C. Jan.	3.....	Jan. 10
NEW ORLEANS TO CRISTOBAL-COLON.			
Atenas.....	U. F. C. Dec.	4.....	Dec. 11
Parismina.....	U. F. C. Dec.	8.....	Dec. 13
Turrialba.....	U. F. C. Dec.	11.....	Dec. 18
Cartago.....	U. F. C. Dec.	15.....	Dec. 20
Abangarez.....	U. F. C. Dec.	18.....	Dec. 25
Heredia.....	U. F. C. Dec.	22.....	Dec. 27
Atenas.....	U. F. C. Dec.	25.....	Jan. 1
Parismina.....	U. F. C. Dec.	29.....	Jan. 3
Turrialba.....	U. F. C. Jan.	1.....	Jan. 8
CRISTOBAL-COLON TO NEW ORLEANS.			
Parismina.....	U. F. C. Dec.	19.....	Dec. 24
Turrialba.....	U. F. C. Dec.	20.....	Dec. 27
Cartago.....	U. F. C. Dec.	26.....	Dec. 31
Abangarez.....	U. F. C. Dec.	27.....	Jan. 1
Heredia.....	U. F. C. Jan.	2.....	Jan. 7
Atenas.....	U. F. C. Jan.	3.....	Jan. 10
Parismina.....	U. F. C. Jan.	9.....	Jan. 15
Turrialba.....	U. F. C. Jan.	10.....	Jan. 17
Cartago.....	U. F. C. Jan.	16.....	Jan. 22
Abangarez.....	U. F. C. Jan.	17.....	Jan. 24



# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, DECEMBER 22, 1915. No. 18.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscription the year is divided into thirds; and remittances for the remainder of this year should be: Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Small Vessels Make Transit of Canal.

Following the complete suspension of traffic for slightly over three months, that is, since the passage of the *Jamaica* through the Canal on September 18, the channel at the bases of the Culebra slides was opened sufficiently to allow the passage of six light draft vessels on Monday, December 20. These were, in order of passage, the yacht *Adrea*, the cable ship *Cyrus W. Field*, the passenger and cargo steamship *Acajula*, belonging to the Salvador Railway Company's line, the yacht *Sultana*, the United States Navy gunboat *Newport*, and the dredge *San Diego*. These are all small vessels, their aggregate tonnage not being equal to one large vessel. The maximum draft of the vessels was 15 feet, drawn by both the *Sultana* and the *Newport*.

The steamships *Edison Light*, *Navajo*, and *Admiralen* are still at the south end of the Canal, waiting at Pedro Miguel Lock, but efforts will be made to pass them through at the earliest opportunity.

Following the passage of the vessels, a cablegram was sent to the Washington office of The Panama Canal, making approximately the following statement: Advantage was taken of a temporary opportunity to pass light draft vessels and it is intended to pass the other waiting vessels as soon as possible. No predictions can yet be made of the probable date of opening, and it is desired to avoid a premature resumption of routing ships via the Canal, which would be sure to embarrass the work and delay the opening of a permanent channel. It would also be expensive to shipping interests on account of unavoidable delays to ships that

might be held here for an indefinite period. Advice will be given promptly when shipping interests should be notified to use the Canal.

### Excavation in the Cut during the Past Week.

Excavation from the bases of the slides on the east and west banks of the Canal at Culebra amounted to 239,621 cubic yards during the week ending at 6 a. m., Tuesday, December 21. Other excavation in the Cut amounted to 41,173 cubic yards, making the total for the week aggregate 280,794 cubic yards. In addition, 15,670 cubic yards were rehandled.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
<i>Caedras</i> .....	15-yard dipper.....	73,450
<i>Gambou</i> .....	15-yard dipper.....	69,785
<i>Paraiso</i> .....	15-yard dipper.....	75,700
<i>Corozal</i> .....	Ladder.....	29,686
<i>Culebra</i> .....	Seagoing suction.....	25,503
<i>No. 86</i> .....	Pipeline suction.....	31,340

The average aggregate output from the Cut for the eight preceding weeks was 271,944 cubic yards, the total in that time having been 2,175,549 cubic yards.

The dredge *Corozal* was out of service, for repairs, throughout most of the day on Sunday, December 19.

### The "Achilles" and the "Ulysses" Submitted for Final Trials.

The Canal colliers *Ulysses* and *Achilles*, which have been in service since April and June of this year, respectively, plying between Norfolk and Cristobal to deliver coal for the Canal coaling plants, are to be withdrawn from their run temporarily, to be submitted for final acceptance tests. Following the tests the two ships are to be overhauled and, upon acceptance, returned to the Canal service.

The places of the *Achilles* and *Ulysses* will be taken by the colliers *Orion* and *Cyclops* of the United States Navy. The *Orion* arrived at Cristobal on the first voyage at noon of Friday, December 17, with 10,000 tons of coal, which has been discharged at the steam hoist wharf in the rear of Dock 14 at Cristobal. The vessel sailed for Norfolk on Wednesday, December 22.

When the *Orion* came into port fire was smouldering in the No. 5 hold, but this was extinguished in the course of unloading the cargo.

The *Orion* and the *Cyclops* are of the same general type as the *Achilles* and the *Ulysses*, with the essential difference of being equipped with unloading machinery. The *Orion* used her unloading machinery in conjunction with the work of the steam hoist at the wharf.

Since the most of the vessels held up at the Canal by its closing have left the terminal ports the demand for coal on the Isthmus has dropped considerably. In September the sales to vessels amounted to 35,920 tons; in October, to 73,350 tons; and in November,

to 19,380 tons. Deliveries to the Isthmus, however, have been maintained as usual, the surplus supply being stored in the new permanent plant at Cristobal, which is thus being stocked in preparation for the beginning of its operation next month.

### Progress on Pier 7, Cristobal.

The north half of the floor for pier No. 7 at Cristobal, the lengthwise axis of which lies approximately east and west, was completed on Wednesday, December 15. Up to that time a total of 8,691 cubic yards of concrete had been placed in the floor, or about 53 per cent of the total required for it. The riveting of the steel work for the floor was begun on November 23; it is expected that all of the concrete for the floor will have been completed early in February. The placing of the concrete has advanced steadily. All of it is mixed and placed by means of one portable plant, using a 4-yard mixer. Since the beginning of the floor construction, in which is included the more difficult and tedious work on the triangular outer end of the pier, the average daily placement has been 172 cubic yards. In the 6-day period from December 9 to 15 the average placement was 233.4 cubic yards per 8-hour day. The high run is this period was 286 cubic yards in eight hours.

To date the structural steel received for the superstructure of the pier has amounted to 1,379,801 pounds, of which 1,285,721 pounds were in a single shipment, on the *J. L. Luckenbach*, arriving in November. Of the total quantity required, 2,117 tons, 690 tons have arrived, and about 700 tons were reported shipped from New York on December 19. It is expected that erection of the steel for the pier shed will begin about January 1. The contract for the steel doors for the pier shed calls for their erection to begin by February 14, 1916, and to be finished by April 14. It is expected that the pier will be completed by June 1.

In the manufacture of cement tile roofing, which was begun November 8 at Cristobal, under a contract made with the American Cement Tile Manufacturing Company, about 55 per cent of the roofing for the pier was finished on December 15; that is, 909 squares out of a total of 1,647 squares. The pier shed roofing estimates place the number of pieces of tile to be used at 21,316.

### Arrival of Cruiser "Columbia."

The cruiser *Columbia* of the United States Navy arrived at Cristobal from Guantanamo on Wednesday, December 15. The *Columbia* is the flagship of Admiral Grant, who has charge of the submarine branch of the Navy, and his mission here is the inspection of the five submarines, the *C-1*, *C-2*, *C-3*, *C-4*, and *C-5*, in the flotilla stationed at the Canal, and conferring as to the establishment of bases for submarine operations in the vicinity of the Isthmus.

## CANAL WORK IN NOVEMBER.

Monthly Report of the Governor to the Secretary of War.

BALEOA HEIGHTS, C. Z., December 14, 1915.  
The Honorable the Secretary of War,  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of November, 1915:

## Department of Operation and Maintenance.

**Lock operation and maintenance.**—In addition to the usual maintenance and repair work at the locks, the work of connecting the motors of all towing locomotives at the Pacific locks for concatenated operation was completed, and similar work undertaken at the Gatun Locks; preliminary work was continued at all locks in connection with the installation of the regulating valves; the new 36-inch drill presses for the lock repair shops at Pedro Miguel and Miraflores were received and their installation started; the tests at Gatun Locks in connection with the chain fender apparatus were concluded, and the emergency dams at all locks were operated for drill purposes. Due to the continued closure of the Canal by slides, there was no complete transit of the Canal by commercial vessels. One commercial lockage was made at Miraflores.

**Electrical Division.**—The net output of the power plants was as follows: Gatun hydro-electric station, 3,252,142 kilowatt-hours; Miraflores steam station (minus), 79,870 kilowatt-hours; total, 3,172,272 kilowatt-hours. The output of the Balboa air compressor plant was 167,085,734 cubic feet of free air compressed to 105 pounds. In addition to the usual operation, maintenance, and repair work, construction work was carried on in connection with the electrical installation on the new coaling plants, dry dock, and on buildings for The Panama Canal and for the Army.

**Municipal Engineering Division.**—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: The construction of roads and streets and water and sewer lines for Fort Randolph, and similar work at Fort Amador; the municipal work for the artillery and cavalry stables at Corozal; installation of piping for the dry dock at Balboa; construction of permanent roads for the shops district, Balboa, and municipal work in the Balboa townsite.

**Meteorology and Hydrography.**—The rainfall for the month exceeded the station averages at five stations and was deficient at 13 stations. The monthly rainfall ranged from 24.27 inches at Monte Lirio to 7.05 inches at Balboa Heights, the maximum precipitation recorded on any one day being 3.71 inches, at Colon on November 27. The estimated rainfall over the Gatun Lake watershed was 16 per cent below the normal, or 16.13 inches against a 15-year mean of 19.27 inches. The Chagres River discharge at Alhajuela was two per cent above the 26-year November normal, and furnished 31 per cent and 30 per cent of the net and total Gatun Lake yield, respectively. The elevation of Gatun Lake varied from 86.18 on the 1st to 84.96 on the 9th, averaging 85.35. Miraflores Lake varied in elevation from 54.38 on the 29th to 53.70 on the 16th, averaging 54.08. Ten seismic disturbances were recorded at Balboa Heights during the month, all of them occurring during the period

from November 26 to 29, inclusive. No damage was reported as a result of any of these. The heaviest shock was on November 26 and had an intensity of V on the Rossi-Forrel scale of I to X and was generally felt.

## Division of Terminal Construction.

## PACIFIC TERMINALS.

**Dry dock and entrance pier.**—Nine hundred and eighty cubic yards of mass concrete and 2,149 cubic yards of reinforced concrete were placed, the greater part being around the pump well and valves, in which 214,060 pounds of reinforcing steel were embedded. There were also placed in connection with the wagon body valves, tracks, pump well, and moving machinery, 347,449 pounds of fixed steel. In the dock gates, the castings on the left leaf are practically complete, with the exception of the bottom casting at the quoin end; and the castings on the right leaf quoin end are complete, with the exception of the bottom casting and some caulking. The mitre end castings on the right leaf are 50 per cent reamed, and one panel has been riveted. The left leaf was stepped on its pintle on November 27. Structural steel was erected to the amount of 29.52 tons, for crane track girders and deck beams over the section chamber, and 38.98 tons of steel were erected in the dock gates. Both the hollow quoins were completed, and the dressing of the granite for the caisson seat is well advanced. In the gates there were approximately 4,295 rivets driven, making 88,265 rivets driven to date. The footings for building No. 29, with the connecting beams, were in place, and the backfill was practically completed. Work was commenced on the excavation for the extension to the west end of the entrance pier, and steamshovel excavation there amounted to 1,722 cubic yards.

**Coaling plant.**—Driving of steel sheet piling was continued for sheathing the piers at the west end of the reloader wharf, the backfill was completed around the piers, and the structural steel at the west end of the unloader wharf was well advanced. In the reloader wharf 73 caissons were sunk to rock at the end of the month. Most of the steel shells above the mud line had been removed and the excavation behind the "B" row of cylinders was completed for a length of 300 feet of the dock. All of the caissons to rock were filled with concrete, and the masonry plates were set to receive the structural steel floor. All of the piles for the anchor wall behind the wharf were in as far as the wall can be worked on at present and as is necessary for the erection of the remainder of the coal handling machinery.

In the unloader towers the contractor erected and riveted the east side framing of the machinery house of tower No. 2, the coal bin of said tower, and aligned and riveted the sheave supports in the peaks of both towers. The corrugated iron roof and siding for the back were placed in this tower, and the front side of tower No. 1 was also enclosed. A special sheet iron canopy to protect the operator of the movable hopper was placed over one of the windows on the coal side of the machinery house of tower No. 1. Work on the walkways, door frames, etc., on tower No. 2 was continued. Tower No. 1 is completed, except for the steel tower, painting, and steam exhaust piping, which were 98 per cent, 95 per cent, and 25 per cent completed, respectively. Tower No. 2 is also practically completed except for the steel tower, painting, and steam

exhaust piping, which were 95 per cent, 95 per cent, and 25 per cent completed, respectively. The riveting of the peak sheave supports completed all riveting on the unloader towers.

**Docks.**—Work progressed satisfactorily in sinking cylinders on quay wall c-d, and concrete filler was put in the cylinders and reinforcing was brought up to a point a little below the anchor bolts which hold the masonry plates. In quay wall d-e the riveting of the last two panels was completed, floating horizontal fenders were placed, and other miscellaneous work was done. On pier No. 18 the riveting of the north aisle shed was completed, and the erection of the south aisle started. At the end of the month all columns and struts for the south aisle and 25 panels of roof had been erected, the total amount erected being 1,101 tons, of which 320 tons were erected during November.

**Excavation and filling.**—The total excavation for the month amounted to 93,454 cubic yards, of which 85,847 cubic yards were classified as rock, the greater portion of which was obtained from Sosa Hill. Various small filling operations continued in the vicinity of the dry dock, the air compressor house, and behind wharf d-e. There were sent to the East Breakwater from the Sosa Hill quarry 83,385 cubic yards, of which 7,160 cubic yards were classified as armor rock.

## ATLANTIC TERMINALS.

**East Breakwater.**—On November 15 the construction of a single-track trestle for the ell was started, 4,678 linear feet of piling being driven and 282 linear feet of track laid. The dry and wet fill measured in place amounted to 99,452 cubic yards, 5,776 cubic yards of armor rock, 76,974 cubic yards of core rock, both from Sosa Hill, 6,104 cubic yards of earth and 18,313 cubic yards of coral rock, the latter two pumped by dredges No. 4 and No. 84, being dumped into the fill.

Under the concrete block contract, 775 blocks were cast, involving the placing of 9,533 cubic yards of concrete, the total number of blocks cast to date being 1,187. The number of days on which concrete was poured was 16, giving an average output of about 48.5 blocks per day. The first shipment of blocks to the East Breakwater was made on November 19 and the total shipped at the end of the month was 274.

In the maintenance work on the West Breakwater, 1,676 cubic yards of armor rock, and 2,939 cubic yards of concrete blocks were placed by derrick barge No. 157.

**Coaling plant.**—The concreting of bridge tracks on walls and wharves was completed, as was the concreting of end wharf floor and girder encasement, except for 120 feet at center under wharf bunker. Concrete filling was placed in two of the four caissons which are being driven to afford foundation where two caisson cylinders collapsed under wharf bunker. The only concrete work remaining to be done at this plant at the end of the month consisted of that for wharf bunker and office tower, the partition wall across coal pocket, and 120 linear feet of end wharf floor. Concrete poured in end wharf floor amounted to 817 cubic yards, and in the bridge tracks 548 cubic yards, the total for the month amounting to 1,365 cubic yards. All erection and riveting of deck steel for wharves have been completed, except for a few girders under the wharf bunker. All concrete has been placed in floors and girder encasements, tracks, etc.,



except for 120 linear feet of end wharf. Dredging continued in reloader wharf slip, and approximately 80 per cent of the dry storage area of coal pocket has been cleared and graded; and considerable coral fill has been dumped to level and straighten the south end of the subaqueous storage area.

Under Washington order No. 40,483, one traveling hopper was practically completed, thus completing the four required for the two bridges. Track for conveyor cars was completed on both bridges, including the curves to all four sliding switches. Two sliding switches were completed, making this item 100 per cent complete, and galvanized iron pipe hand railing was completely erected on both bridges. The two rolling switches at the middle cutoff loops were erected and riveted complete, as also approximately 30,000 pounds of miscellaneous steel in ties, trolley and lighting poles, etc. The concrete stucco walls of the two scale houses were finished during the month, making this item 50 per cent complete. About 1,060 linear feet of straight viaduct track were aligned and spiked during the month, and the curved track and switches on the east cutoff loop were practically completed, and on the west cutoff about 50 per cent. Creosoted ties and walkways were installed on 1,290 linear feet of viaduct, and about 1,300 linear feet of pipe hand railing was erected on same. Six conveyor cars were assembled and riveted, making a total of 26 completed (structurally) to date, or 30 per cent of the total number required for this plant. One approach conveyor bridge was erected and riveted during the month, completing this item of four conveyor bridges. The four trailing feeder hoppers, including the platforms, framework, hoppers, and chutes, were about 95 per cent completed, there being a few plates and members to erect, which have not yet been received on the Isthmus. Corrugated iron covering over the four approach conveyors was completed during the month; also approximately 15 per cent of sheeting for machinery houses on the towers.

Under Washington order No. 40,587, corrugated iron sheeting was entirely completed on all unloaders. With the exception of the final coat of paint on unloader No. 4, all work on four towers is completed, except the replacement of the defective valves, a few minor adjustments, and touching up.

#### Marine Division.

Due to the continued closure of the Canal by slides, no vessels passed through the Canal in November.

#### Dredging Division.

The total dredge excavation for the month, including earth, rock, and gravel, was 1,311,495 cubic yards. Of this total, 2,132 cubic yards of earth and 1,513 cubic yards of rock were removed from the Balboa inner harbor; 211,317 cubic yards of earth and 1,017,413 cubic yards of rock from Gaillard Cut; 13,299 cubic yards of coral from the west side of the Cristobal coaling station, and 6,104 cubic yards of coral sand and 18,313 cubic yards of coral rock at Coco Solo.

The slides, especially on the east side, continued active during the month, and the channel remained completely closed.

The rock crusher *Vulcan* was engaged all month in breaking areas not to grade in the Pacific entrance, 3,867 holes being broken over an area of 61,904 square feet, with a total penetration of 2,488 feet and a breakage of 1,477 cubic yards. The drill barge *Teredo*

No. 2 was engaged in drilling and blasting in the Pacific entrance on various shoals, 303 holes being drilled, with a total penetration of 6,518 linear feet, and 6,030 cubic yards of rock were broken. The hydraulic grader was engaged all month at Gamboa, furnishing steam and air for repair work, pumping oil, etc. Dredges No. 1 and No. 82 were engaged in excavating sand and gravel from the Chagres River, 4,995 cubic yards of sand, 2,070 cubic yards of No. 1 gravel, 6,617 cubic yards of No. 2 gravel, and 27,722 cubic yards of run-of-bank gravel being excavated. The work of exterminating water hyacinths continued.

#### Mechanical Division.

Shop orders authorized during the month numbered 1,144, a decrease of 67 as compared with the month of October; those left over from the previous month numbered 837, and those carried forward into December, 913. The output of the foundry was 225,717 pounds of iron, 70,693 pounds of steel, and 20,041 pounds of brass. Hasting was done on 4,445 pieces of equipment, and shop and field repairs were made on 6,584. In addition, 861 cars were repaired in shop and 1,470 light and 11 heavy repair jobs were done on equipment. The floating cranes *Ajax* and *Hercules* were transferred from the Mechanical Division to the Dredging Division as of the first of November, inasmuch as for a considerable time to come these cranes will be used almost exclusively by the latter division. The 2,500-foot steam-driven compressors, and boiler for operating same, were installed at the Paraiso shops, thus permitting the release of the two 550-foot electric-driven air compressors, which it is contemplated will be installed one in each of the roundhouses.

**Fuel oil plants.**—Houses to protect the gasoline tanks from the sun were completed, and the installation of fire plugs to permit control of bush fires was undertaken by the Municipal Engineering Division and partially completed. The erection of the tanks for the Panama Canal Storage Corporation at Balboa was approximately 75 per cent completed, and the firewalls around the sites of the West India Oil Company's tanks were completed with the exception of the openings through the walls for the installation of drains. At Mount Hope survey was made of the firewalls of the Texas Company's tanks No. 10 and No. 41.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following Canal structures were in the course of construction at the places named: *Ancon-Balboa*—One four-family concrete house, being erected under contract, was 85 per cent completed; work on the construction of new verandas at the old Administration Building, Ancon, was 60 per cent completed and the installation of furnaces and machinery in the Ancon Hospital crematory was 90 per cent completed. The construction of the new refrigerating plant at Balboa continued, the first floor was completed, the foundations for the main ammonia compressors were laid, and the forms for the walls to the second floor of the beef rooms were erected. This work was approximately 30 per cent completed at the end of the month. The work on the new Ancon Hospital group continued, and the first floors in all of the buildings were completed, and the form work on the walls in buildings B and C to the second floor was 50 per cent completed. The work as a whole was 25 per cent completed at the end of the month. The construction of the new

terminal office building at the head of Pier 17 was continued, and the building is approximately eight per cent completed. *Corozal*—The work on the extension of the Miraflores power house, the construction of seven 12-apartment colored family quarters on the Pedro Miguel-Miraflores road, one bachelor house of the same type, and the building for housing cripples in the insane asylum, were all completed. *Gatun-Colon*—Work was continued on the construction of the new Colon Hospital building and at the end of the month the entire group was approximately 62 per cent completed.

In compliance with the request contained in the Adjutant General's letter of November 18, the report of post construction work done by the Building Division in connection with barracks, quarters, etc., for the mobile army and Coast Artillery, is and will hereafter be incorporated in the regular monthly report on fortification work.

#### Supply Department.

The force report for the half month ended November 24, 1915, showed a total of 24,359 employees of The Panama Canal and the Panama Railroad Company, of whom 3,653 were white Americans and 20,706 laborers. Of the latter, approximately 183 were Europeans and the remainder West Indian negroes. There was an increase of 615 laborers and an increase of 20 Americans, making a net increase of 635.

The occupants of Government quarters numbered 6,706 Americans, of whom 3,673 were men, 1,497 women, and 1,536 children; and 9,101 West Indians, of whom 5,150 were men, 1,575 women, and 2,376 children.

The value of material received during the month was \$669,048. It came forward in 33 steamers, and the total weight of cargo, exclusive of piling and lumber, was 29,052 tons. Some of the principal items were 139,989 bags of cement, 2,311,605 feet, board measure, of lumber, and 4,957 bales of hay, for stock.

The Balboa oil plant handled 63,214.47 barrels of fuel oil, and the Mount Hope plant handled 8,617.48 barrels of fuel oil, the majority of both being for The Panama Canal.

#### Health Department.

**General.**—No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 31,219, was 11.14 per thousand per year, as compared with 13.10 for the preceding month and 12.66 for the corresponding month of last year.

**Employees.**—The health of employees continued good. The number of names on the payrolls for the preceding month was 34,224. On this basis the admission to hospitals and quarters, 887, gave a rate of 311.01 per thousand, as compared with 294.80 for the preceding month, and 298.93 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites, 310.91; blacks, 94.76; and Americans, 261.75. The admission rates to hospitals and quarters for malaria were: Whites, 52.25; blacks, 17.41; and Americans, 34.90. The total number of deaths from all causes was 23. Of these 17 died from disease, all of whom were black employees, or 5.96 per thousand, as compared with 5.39 for the preceding month, and 1.51 for the corresponding month of last year. Two Americans died from accident during the month, giving a rate of 5.82 per thousand.



## Accounting Department.

The cash balance in Canal construction appropriations on November 30, 1915, was \$15,562,817.55, and in the fortifications appropriations, \$2,301,639.53. The payrolls for November, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$839,349.91 and the fortification roll amounted to \$57,504.51. Payments by the Disbursing Clerk in Washington amounted to \$1,013,618.86 and by the Paymaster on the Isthmus to \$1,212,656.53. Collections on the Isthmus amounted to \$699,408.08, of which \$453,763.82 was repaid to appropriations, \$231,100.06 was commissary collections and other trust funds, and \$14,544.20 was miscellaneous receipts to be covered into the Treasury. Collections by the Disbursing Clerk at Washington amounted to \$8,515.89. Deposits in the sum of \$85,354.47 were made with the Assistant Treasurer to be applied in payment of tolls and other charges against vessels using the Canal. Canal revenue collections and miscellaneous funds received amounted to \$204,173.22, and the disbursements under the same heading amounted to \$206,782.22.

## Executive Department.

## DIVISION OF CIVIL AFFAIRS.

One hundred and ninety-two licenses of all kinds were issued. Thirteen estates were received and 12 settled, the total cash received during the month amounting to \$1,111.57, the total value of the estates closed being \$689.91. At the port of Balboa 26 vessels entered and 48 cleared, and at the port of Cristobal 57 vessels entered and 56 cleared.

*Postal service*—Postmasters remitted on account of money order fees, stamp sales, second-class mail collections, postage due collections, and box rent receipts, \$7,507.66. Money orders issued during the month aggregated \$305,144.28. Of this total, \$93,190 represents the value of deposit money orders issued without fee, in lieu of postal savings certificates. Deposit money orders were paid to the value of \$86,035 and postal savings certificates to the value of \$6,497. The balance of postal savings deposits on hand at the close of the month, represented by unpaid certificates and deposit money orders, aggregated \$445,607, as compared with \$444,949 at the close of the previous month.

## POLICE AND FIRE DIVISION.

Three hundred and eighty-three arrests were made. Of this total 366 were males and 17 were females. Fifty-six convicts were confined in the penitentiary at the close of the month. Nineteen persons were deported,

four of whom were convicts who had completed their sentence in the penitentiary and 15 prisoners who had served terms in jail.

Four fires occurred and the damage to private property resulting therefrom amounted to \$1,107.40. The property of The Panama Canal, of the Panama Railroad, and of the United States Army suffered no damage.

## COURTS.

In the District Court 41 cases were settled; nine civil, 22 probate, and 28 criminal cases were filed, and 123 cases of all kinds were pending at the close of the month. In the magistrates court 15 civil and 366 criminal cases were disposed of.

## DIVISION OF SCHOOLS.

The total enrollment was 1,347 for the white schools, and 665 for the colored schools. In the white schools the net enrollment was 1,226, the average daily attendance 1,022.3, and the average number belonging 1,312. In the colored schools the net enrollment was 477, the average daily attendance 418, and the average number belonging 481.4.

## Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including rehandled cargo, amounted to approximately 244,545 tons. The following quantities of coal were handled and trimmed in bunkers: Colon agency, 3,200 tons; Balboa agency, 16,180 tons; total, 19,380 tons.

The work on pier No. 7, Cristobal, continued satisfactorily. In the floor slab 201,441 pounds of reinforcing rods were placed, and 144,782 square feet of forms for placement of slab and encasement of girders were set during the month. Three thousand six hundred and eighty-nine cubic yards of concrete were placed in the floor of the pier. Backfilling for pier No. 7 approach was started during the month, 12,312 cubic yards being placed.

Preliminary work continued on pier No. 6, Cristobal, 668.5 linear feet of wash drilling and 68.7 linear feet of diamond drilling being accomplished during the month, making this item 80 per cent completed.

The manufacture of cement tiling was started on November 8, and approximately 70.5 squares were manufactured for the coaling plant, or 100 per cent required for this work; 430 squares being manufactured for pier No. 7, or 26 per cent of the total required.

Respectfully,  
GEO. W. GOETHALS,  
Governor.

## TO STUDY CANAL SLIDES.

## Committee of National Academy of Sciences Arrives on the Isthmus.

A committee of scientists and engineers appointed by the National Academy of Sciences to study the slides in Gaillard Cut and make suggestions as to the methods of coping with them, arrived on the Isthmus on Sunday, December 19, from New Orleans. The party was met at the pier by a special train, and taken across the Isthmus to the Hotel Tivoli at Ancon. The members began their researches on Monday, December 20, in company with various Canal engineers.

The National Academy of Sciences was created by act of Congress in 1863, its incorporation providing that it should "when-ever called upon by any department of the Government, investigate, examine, experiment and report upon any subject of science or art, the actual expense of such investigations, examinations, experiments and reports to be paid from appropriations which may be made for the purpose, but the Academy shall receive no compensation whatever for any services to the Government of the United States." In the latter part of October suggestion was made to the President that the Academy would be willing to render service in a study of the Canal slides, and the President requested a report on the subject from the society. At a meeting held in New York City on November 17 the Academy appointed a committee to consider and report upon the slides. The committee, with the cooperation of the Washington office of The Panama Canal, began immediately the study of available data on the subject, and arrangements were made for its members to visit the Isthmus and study the situation on the ground.

The committee is composed of Charles R. Van Hise, metallurgist and geologist, president of the University of Wisconsin, chairman; General Henry L. Abbot, formerly of the Corps of Engineers of the Army, consulting engineer for the second French canal company and for the United States Government in the consideration of plans for the Canal; John C. Branner, geologist, president of Leland Stanford University; Whitman Cross, geologist, of the United States Geological Survey; John F. Hayford, professor of civil engineering at Northwestern University; Harry Fielding Reid, geologist and seismologist, Johns Hopkins University; Rolla C. Carpenter, civil engineer, professor of experimental engineering at Cornell University; Arthur P. Davis, civil engineer, director and chief engineer of the Reclamation Service, member of the board of consulting engineers for the Panama Canal, 1907; and John R. Freeman, civil and mechanical engineer, member of the board of consulting engineers for the Panama Canal in 1907. Mr. R. B. Potter, of the Reclamation Service, and formerly employed in the Central Division, under the Isthmian Canal Commission, is secretary to the committee.

## Christmas and New Year's Schedule between Balboa and Taboga.

In addition to the regular schedule between Balboa and the Hotel Aspinwall, using the launch *Aspinwall*, published elsewhere in this issue, the tug *Cocoi*, which has a carrying capacity of 75 persons, has been engaged to sail from the Balboa dredge landing on Friday,

## Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Valencia, Pablo.....	50610	Colombia.....	Camp Bird.....	Term. Const....	Dec. 14, 1915.
Brown, Wm.....	32573	Jamaica.....	Gusachapall.....	Fortifications....	Dec. 7, 1915.
Hamblet, Samuel.....	44775	St. Vincent.....	Panama.....	Fortifications....	Dec. 13, 1915.
Hunt, Donald.....	79105	Jamaica.....	Colon.....	P. R. R.....	Dec. 10, 1915.
Steven, Henry.....	89477	Barbados.....	Cristobal.....	P. R. R.....	Dec. 12, 1915.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

December 24, at 5.30 p. m., and to leave Taboga Island on Sunday, December 26, at 7 p. m.

For the New Year's holiday, the *Cocoli* will sail from the dredge landing at Balboa at 5.30 p. m., Friday, December 31, and from the Hotel Aspinwall landing at 7 p. m. Sunday, January 2.

#### Canal Zone Christmas Cards.

The 10,000 Christmas cards which were placed on sale at the commissary stores on December 6 were sold out quickly, and the commissary branch of the Supply Department had 3,000 cards of an appropriate local design printed at the Canal printing plant at Mount Hope. The design was printed in four colors. The decoration was printed on the reverse side of the official Canal Zone postal card, requiring no stamp, and space below the design gives room for writing a personal greeting.

The Canal Zone cards were placed on sale in the morning of Wednesday, December 15.

#### Schools Closed for the Holidays.

The Canal Zone schools were closed for the Holidays at the end of the day on Friday, December 17. They will reopen on Monday, January 3.

#### Subscriptions Expire on December 31.

Attention is called to the fact that paid subscriptions to THE CANAL RECORD expire on December 31 and remittances should be made at once for subscriptions for 1916 in order to avoid interruption.

Conditions governing subscriptions are set forth in these excerpts from a circular issued on December 1, 1914:

After January 1, 1915, a subscription rate will be charged for the Canal Record of domestic and \$1.50 foreign, except in the case of Government departments and bureaus, members of Congress, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad on the gold roll, to whom the Record will still be distributed free.

All subscriptions for the Record will expire on December 31 of each year. Domestic subscriptions received after the beginning of a year will be charged as from the beginning of the particular quarter in which received, in accordance with the schedule of rates shown below. Foreign subscriptions will be charged as from the beginning of the particular third of the year in which they are received.

#### Subscription rates—Domestic.

Subscriptions entered between January 1 and April 1.....	\$1.00
Subscriptions entered between April 1 and July 1.....	1.75
Subscriptions entered between July 1 and October 1.....	.50
Subscriptions entered between October 1 and January 1.....	.25

#### Subscription rates—Foreign.

Subscriptions entered between January 1 and May 1.....	\$1.50
Subscriptions entered between May 1 and September 1.....	1.00
Subscriptions entered between September 1 and January 1.....	.50

Remittances from the Canal Zone, the Republic of Panama, Colombia, the West Indies (excepting Cuba and Porto Rico), Costa Rica, the West Coast, Argentina, Uruguay, and Paraguay should be forwarded to "The Canal Record, Balboa Heights, Canal Zone," and should be made payable to "The Collector, The Panama Canal." The name and address to which the Record is to be sent should be plainly written. Subscribers in the United States and in foreign countries other than those mentioned above should address "The Chief of Office, The Panama Canal, Washington, D. C.," and make their remittances payable to "The Disbursing Clerk, The Panama Canal."

The word "foreign" refers to countries where mail cannot be forwarded under official frank. The word "domestic" refers to the United States and its possessions, as well as to Canada, Cuba, Mexico, and the Republic of Panama, to which last-named foreign countries Government mail can be forwarded under official frank.

## OFFICIAL CIRCULARS.

### License to Carry Gunpowder on Passenger Vessels.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., December 14, 1915.

CIRCULAR NO. 644-3:

1. Circular No. 644, dated May 1, 1914, providing rules and regulations for the Steamboat Inspection Service, is modified as follows:

Upon the application of any master or owner of any steam vessel employed in the carriage of passengers, for a license to carry gunpowder, the local inspectors shall examine such vessel, and if they find that she is provided with a chest or safe composed of metal, or entirely lined and sheathed therewith, or if the vessel has one or more compartments thoroughly lined and sheathed with metal, at a secure distance from any fire, they may grant a certificate to that effect, authorizing such vessel to carry as freight within such chest, safe, or compartments, the article of gunpowder, which certificate shall be kept conspicuously posted on board such vessel.

GEORGE W. GOETHALS,  
Governor.

### Charges for Elective Surgical Operations on American Seamen.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., December 14, 1915.

CIRCULAR NO. 618-8:

Class 9 of the schedule of charges on page 6 of circular No. 618-5, dated May 15, 1915, is hereby amended to provide a charge of 10 per cent of the schedule, for elective surgical operations on American seamen.

GEORGE W. GOETHALS,  
Governor.

### Hospital Bills for Nonemployees Living in Panama Canal Quarters.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., December 10, 1915.

CIRCULAR NO. 618-7.

1. Employees holding silver family quarters regularly assigned to them will be held responsible for the payment of the hospital bills of any nonemployees allowed to live in their quarters with them, and will be required to see that no nonemployees are allowed to live in their quarters unless they are willing to be responsible for the hospital treatment of such nonemployees in case it should at any time be necessary to send them to the hospital.

2. District physicians who send charity patients to the hospital will ascertain if the patient has been occupying Canal quarters and if so will ascertain and furnish the superintendent of the hospital the name of the employee holding the quarters, his check number, and the division for which he works, so that payroll deduction can be made unless bill is otherwise settled.

3. District quartermasters will have a copy of this circular posted in a conspicuous place in all silver family quarters and have a copy of it appended to all tenders of silver family quarters in the future.

GEORGE W. GOETHALS,  
Governor.

### Instructions for Detaching Coupons from New Style Mileage Form Commissary Books.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., December 15, 1915.

The new style commissary coupon books of \$2.50, \$5, and \$15 denominations, which are similar to a mileage book, will be distributed for issue within a few days.

The coupons, each of which represents the value of one cent, are separated by perforations. The coupons must be torn out along the perforations and the greatest care exercised in detaching the proper amount. The numbers at the left show the number of coupons that have been detached from the book. The amount at the right shows the value of the coupons remaining in the book.

No detached coupons will be accepted. The coupon book must be turned over to the salesman to detach coupons.

Before pulling out coupons the salesman must see that the rubber band is on the outside front cover of the book; otherwise the band will catch in the perforations and tear the coupons. The book should be held in the left hand and a sufficient number of coupons drawn out to cover the purchase. The perforations separating the last coupon to be torn out must be placed on the edge of the front cover; the front and back covers must then be pressed together closely with the thumb and forefinger and the coupons torn out.

The quickest method of arriving at the number of the last coupon to be detached is to add the amount of the sale to the lowest numbered coupon remaining in the book. Example: A customer presents a book out of

which \$1.57 has been spent, making 158 the lowest numbered coupon. A purchase of \$1.25 is made. By adding 125 to 158, the result, 283, less 1, equals 282, which is the number of the last coupon to be detached. The following is a simple method of addition which does not require that any figures be set down:

125 plus 8 equals 133; that amount plus 150 equals 283; deducting 1 gives 282, the number of the last coupon to be detached.

If it is necessary to use pencil and paper, set down the number of the first coupon in the book, and add to it the amount of the sale, as follows:

125
8
133
150
283

Deducting 1 from this total gives the number of the last coupon to be torn from the book.

Coupons must be folded about four inches or five inches long. They must not be crumpled under any circumstances.

H. A. A. SMITH,  
Auditor, The Panama Canal.

#### Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., December 13, 1915.

To accountable officials—Effective December 16, 1915, and during such time as Mr. W. G. Thompson may be absent on leave, Mr. R. A. Wilson will assume accountability for nonexpended property now in the custody of Mr. Thompson, and is authorized to sign all property papers for and in the name of Mr. Thompson.

H. A. A. SMITH,  
Auditor, The Panama Canal.

#### Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, December 29, 1915, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, December 31, 1915, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board.

GEORGE J. VANDERSLICE,  
Recorder, Board of Local Inspectors.

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., December 22, 1915.

The following misdirected addresses, letters, originating in the United States and its possessions, have been received at the office of the Director of Posts, and may be procured upon application of the addressee:

Boland, John P.	†Mason, Loyd
*Baker, Mrs. H. F.	†Klinger, Harry A.
Campbell, Byron	†Lamburchi, Lalie
Cooper, Roy H.	Nicholson, Wm. John
David, Ewald	Reidman, H. E.
Dockery, Dorothy	Rock, Jos. W.
Faison, Samson L.	Schultz, Edward
Kelly, N. W.	Zorko, J. D.

\* Card. † Package. ‡ Special delivery.







	Price.
Peel, orange, per lb.	.16
Prunes, stewing, per lb.	.09
Raisins, seeded, pkg.	.11*
Raisins, table cluster, per lb.	.23

## FRUITS, FRESH.

Apples, fresh, per lb.	.04
Apples, fresh, select, per lb.	.06*
Bananas, 8 hands and over, per bunch.	.40
Bananas, 6 and 7 hands, per bunch.	.28
Bananas, ea.	.004
Cocanuts, ea.	.05
Cranberries, per lb.	.09
Grapes, Malaga and Tokay, per lb.	.17*
Grapefruit, select, ea.	.07
Grapefruit, tropical, ea.	.03†
Lemons, per doz.	.20*
Limes, per 100	.50*
Oranges, select, ea.	.12
Oranges, tropical, per doz.	.05
Pears, fresh, per lb.	.05
Tangerines, ea.	.01†

\* Indicates advances from preceding list.

\*\*Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than ½ ham or ½ shoulder of fresh pork will be sold.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective December 20:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Beakers, small, ea.	\$0.23	\$0.28
Beats, sauce, ea.	3.95	4.35
Bowls, sugar, ea.	.12	.09
Bowls, sugar, ea.	1.10	1.15
Bowls, salad, ea.	.24	.28
Bowls, punch, ea.	2.70	2.40
Bowls, punch, ea.	2.20	2.45
Cups and saucers, ea.	.39	.45
Cups and saucers, ea.	.53	.56
Cups and saucers, ea.	.20	.24
Dishes, bakers, ea.	1.15	1.25
Jug, cream, ea.	.33	.39
Mugs, Doulton, ea.	.26	.29
Pins, roking, ea.	.15	.11
Plates, dessert, ea.	1.30	1.10
Plates, breakfast, ea.	.50	.53
Plates, dinner, ea.	.65	.50
Plates, dessert, ea.	.45	.48
Plates, dessert, ea.	.25	.28
Plates, B. & B., ea.	.20	.23
Platters, chop, ea.	2.25	2.50
Platters, meat, ea.	.68	.78
Platters, meat, ea.	1.00	1.10
Platters, meat, ea.	1.40	1.30
Pots, Azalea, ea.	.22	.18
Rugs, Crex, ea.	.66	.88
Rugs, Crex, ea.	.80	.85
Rugs, Crex, ea.	1.05	1.15
Rugs, Crex, ea.	3.00	3.25
Rugs, Crex, ea.	4.75	5.45
Rugs, Crex, ea.	6.60	6.60
Rugs, Crex, ea.	1.15	1.30
Rugs, Crex, ea.	.66	.88
Rugs, Crex, ea.	.66	.88
Rugs, Crex, ea.	.66	.88
Rugs, Crex, ea.	.80	.85
Rugs, Crex, ea.	.80	.85
Rugs, Crex, ea.	1.15	1.30
Rugs, Crex, ea.	1.15	1.30
Rugs, Crex, ea.	4.75	5.45
Rugs, Crex, ea.	4.75	5.45
Rugs, Crex, ea.	4.75	5.45
Rugs, Crex, ea.	6.60	7.15
Rugs, Crex, ea.	6.60	7.15
Rugs, Crex, ea.	6.60	7.15
Saucapans, ea.	.32	.32
Bedspreads, 1.	1.10	1.15
Bedspreads, 1.	1.20	1.15
Brushes, tooth, ea.	.12	.12
Cloth, oil, yd.	.18	.20
Coats, Palm Beach, ea.	3.30	3.05
Cloth, foundation silk, yd.	.22	.15
Hamocks, ea.	3.30	4.00
Overalls, white, pr.	.45	.45
Pique, yd.	.22	.25
Ribbon, yd.	.05	.03
Robes, bath, ea.	2.95	2.70
Serge, black, yd.	2.00	2.25
Syringes, ea.	1.55	1.35
Thread, Clarke's, spool.	.07	.10
Umbrellas, ea.	.75	.80

## Additions to Stock.

Braid, rick rack, No. 37, red, 6 yds. piece.	\$0.08
Braid, rick rack, No. 37, blue, 6 yds. piece.	.08
Calico, plain, turkey red, yd.	.08
Caps, golf, Palm Beach, ea.	.44
Clips, pen and pencil, ea.	.01
Covers, lace from, 0311, ea.	2.65
Pencils, Dixon's, No. 2, hexagonal, ea.	.03
Pencils, Dixon's, No. 1, round, ea.	.02
Saxophone, Cantorino, bot.	.40
Sung, union, yd.	.35
Shirts, sport, short sleeves, ea.	1.25

Voile, corded, yd.	.20
Voile, chain check, yd.	.24
Voile, triple dashed, yd.	.25
Voile, cord satin striped, yd.	.29
Women's shoes	
White canvas pumps, pr.	2.25
White canvas pumps, pr.	2.20
Dull calf, button, pr.	2.70
Chocolate vice blucher, pr.	3.15
Gun metal, lace oxford, pr.	4.10
Russia calf, lace oxford, pr.	4.10

## Taboga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 4.30 p. m.; Monday, Thursday, Saturday, and Sunday, at 9.40 a. m.

Leave Taboga—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier; Monday, Thursday, and Saturday at 1.30 p. m.; Sunday at 7.15 p. m.) The 9.40 a. m. trips from Balboa await the arrival of Panama Railroad trains.

There will be no 5.30 p. m. trip from Balboa on Sundays and holidays, unless the number of guests desiring transportation from Taboga exceeds the number that the launch is able to take in one trip; in which case a trip will be started from the Asinwall landing at 5.30 p. m., reaching Balboa in time to leave again at 5.30.

## Proposal for Purchase of 300 Curb Cocks.

Sealed bids will be received at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., January 3, 1916, and then opened, for the purchase of 300 curb cocks. Complete description regarding these curb cocks may be obtained upon application to the General Storekeeper, Balboa, C. Z. The Panama Canal reserves the right to accept any or reject any or all bids. Bids should be marked "Proposal for purchase of 300 curb cocks" and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Proposals for the Purchase of Lighter and Launch.

Sealed bids will be received at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., January 3, 1916, and then opened, for the purchase of lighter No. 78 and the hull of launch O. Neither of these can be used in Canal Zone waters unless they are put in such shape as to pass inspection by the Board of Local Inspectors. Full information may be obtained upon application to the General Storekeeper, Balboa. Bids will be received for either or both of these items. The Panama Canal reserves the right to accept any or reject any or all bids. Bids should be marked "Proposal for purchase of lighter and launch" and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Proposals for Purchase of Hollow Tile Concrete Blocks.

Sealed bids will be received at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., January 4, 1916, and then opened, for the purchase of 14,000 12-inch by 18-inch and 5,000 8-inch by 12-inch by 18-inch hollow tile concrete blocks. These blocks may be inspected at the cement block plant at Corozal and full information obtained upon application to the General Storekeeper, Balboa, C. Z. The Panama Canal reserves the right to accept any or reject any or all bids. Bids should be marked "Proposal for purchase of hollow tile concrete blocks" and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Rainfall from December 1 to 1915, inclusive.

	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>			
Balboa	1.67	2	3.90
Balboa	3.40	1	3.40
Miraflores	2.15	2	4.84
Pedro Miguel	1.10	2	3.33
Rio Grande	1.80	7	5.68
<b>Central Section—</b>			
Culebra	1.86	7	4.88
*Camacho	2.05	7	4.38
*Empire	1.84	7	4.42
*Gamboa	2.72	7	3.56
*Juan Mina	2.09	8	6.41
Alhajuela	1.94	7	5.72
*Vigia	1.05	7	3.42
*Frijoles	1.57	2	5.01
*Monte Lirio	2.20	1	7.91
<b>Atlantic Section—</b>			
Gatun	2.74	3	5.90
*Colon	2.45	3	6.73
*Colon	3.48	2	6.43
*Bocas del Toro	1.26	14	5.13

\*Standard rain gauge—readings at 5 p. m. daily.  
 †Standard rain gauge—readings at 8 a. m. daily.  
 ‡Automatic rain gauge at unstarred stations—values midnight to midnight.

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions until February 1, 1916, are given in this table:

## DECEMBER.

DATE.	Time and height of high and low water.			
Wed., Dec. 22.....	4:09	10:24	16:41	22:40
Thurs., Dec. 23.....	4:45	11:02	17:17	23:10
Fri., Dec. 24.....	5:20	11:59	17:52	23:57
Sat., Dec. 25.....	5:55	12:17	18:26	24:11
Sun., Dec. 26.....	6:30	12:54	19:00	
Mon., Dec. 27.....	7:07	13:33	19:37	
Tues., Dec. 28.....	7:49	14:15	20:16	
Wed., Dec. 29.....	8:35	15:03	21:04	
Thurs., Dec. 30.....	9:24	15:56	21:59	
Fri., Dec. 31.....	10:16	16:56	22:02	

## JANUARY.

DATE.	Time and height of high and low water.			
Sat., Jan. 1.....	5:51	11:55	18:06	
Sun., Jan. 2.....	6:12	12:17	18:31	
Mon., Jan. 3.....	6:52	13:00	19:14	
Tues., Jan. 4.....	7:35	13:48	20:17	
Wed., Jan. 5.....	8:24	14:41	21:25	
Thurs., Jan. 6.....	9:16	15:38	22:37	
Fri., Jan. 7.....	10:11	16:43	23:51	
Sat., Jan. 8.....	11:09	17:56	25:07	
Sun., Jan. 9.....	12:12	18:16	26:24	
Mon., Jan. 10.....	13:21	19:41	27:41	
Tues., Jan. 11.....	14:36	21:03	29:00	
Wed., Jan. 12.....	15:54	22:34	30:21	
Thurs., Jan. 13.....	17:16	24:16	31:47	
Fri., Jan. 14.....	18:42	26:04	33:17	
Sat., Jan. 15.....	20:12	28:06	34:51	
Sun., Jan. 16.....	21:46	30:13	36:29	
Mon., Jan. 17.....	23:24	32:35	38:11	
Tues., Jan. 18.....	25:06	34:50	39:57	
Wed., Jan. 19.....	26:52	37:11	41:47	
Thurs., Jan. 20.....	28:42	39:38	43:41	
Fri., Jan. 21.....	30:36	41:59	45:39	
Sat., Jan. 22.....	32:34	44:15	47:41	
Sun., Jan. 23.....	34:36	46:26	49:47	
Mon., Jan. 24.....	36:42	48:33	51:57	
Tues., Jan. 25.....	38:52	50:36	53:70	
Wed., Jan. 26.....	41:06	52:35	55:17	
Thurs., Jan. 27.....	43:24	54:30	56:59	
Fri., Jan. 28.....	45:46	56:21	58:27	
Sat., Jan. 29.....	48:12	58:08	59:51	
Sun., Jan. 30.....	50:42	59:51	61:01	
Mon., Jan. 31.....	53:16	61:30	62:07	

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the sounding given on the chart, unless a minus (−) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 04 (midnight) to 24 (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., December 19, 1915.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Dec. 19....	Adrea (yacht)....	American....	L. J. Shoemaker.....	New York.....	Los Angeles.....	Ballast.....		99	78
Dec. 19....	Cyrus W. Fields....	American....	United States mine planter.....	Cristobal.....	Balboa.....	Ballast.....		376	214

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Dec. 18....	Sultana (yacht)....	American....	Mrs. E. H. Harriman.....	San Francisco.....	New York.....	Ballast.....		411	214
Dec. 18....	Newport.....	American....	New York Marine School.....	Ho lu lu.....	New York.....	Ballast.....		1,050	
Dec. 18....	Edison Light.....	American....	Boston Virginia Trans. Co.....	Balboa.....	Cristobal.....	Ballast.....		2,656	1,792
Dec. 18....	Nawajo.....	American....	Western Steam Nav. Co.....	San Francisco.....	Joswich.....			2,705	1,779
Dec. 19....	Admiral.....	Norwegian....	L. Christenson.....	Balboa.....	Cristobal.....				

\*Displacement tonnage.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
Dec. 13....	Quillota.....	Pacific Steam Nav. Co....	London & way pts.
Dec. 15....	Buford.....	United States Army.....	New York.
Dec. 15....	Columbia.....	United States Navy.....	Guantanamo.
Dec. 17....	Scythian.....	Leyland Line.....	Liverpool.
Dec. 17....	Orion.....	United States Navy.....	Norfolk, Va.
Dec. 18....	Coronado.....	Elders & Fyffes.....	Port Limon.

## \*DEPARTURES.

Date	Vessel	Line	For
Dec. 16....	Quillota.....	Pacific Steam Nav. Co....	London, via way pts.
Dec. 16....	Anton o Lopez.....	Spanish Line.....	Barcelona.
Dec. 17....	J. L. Luckenbach.....	Lu kenbach Line.....	New York.
Dec. 17....	Perov.....	French Line.....	Saint Nazaire.
Dec. 18....	Coronado.....	Elders & Fyffes.....	Bristol & Jamaica.

## \*EXPECTED ARRIVALS.

Dec. 21....	Cyclops.....	U. S. Navy.....	Norfolk.

## \*EXPECTED DEPARTURES.

Dec. 20....	Scythian.....	Leyland Line.....	Gulfport—Pt. Limon
	Buford.....	United States Army.....	Newport News, Va.
	Orion.....	United States Navy.....	Hampton Roads.
	Cyclops.....	United States Navy.....	Hampton Roads.
	Columbia.....	United States Navy.....	Unknown.

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From
Dec. 13....	Ucayali.....	Peruvian Line.....	Callao.
Dec. 13....	Drusa.....	Pisa, Pisa & Co.....	Panama.
Dec. 13....	Salvador.....	Pacific Steam Nav. Co....	Guayaquil.
Dec. 13....	May Fair.....	A. W. Beadle.....	Punta Arena.
Dec. 14....	Hattie Luckenbach.....	Luckenbach Line.....	San Francisco.
Dec. 14....	Limari.....	South American S. S. Co.	Tachano.
Dec. 16....	Carib II.....	Robert Wilcox.....	Pedregal.
Dec. 16....	F. H. Buck.....	Associated Oil Co.....	Monterey.
Dec. 17....	Manari.....	Pacific Steam Nav. Co....	Guayaquil.

## DEPARTURES.

Date	Vessel	Line	For
Dec. 14....	San Juan.....	Pacific Mail S. S. Co....	San Francisco.
Dec. 14....	Hattie Luckenbach.....	Luckenbach Line.....	Iquique.
Dec. 15....	Drusa.....	Pisa, Pisa & Co.....	Pedregal.
Dec. 17....	Chile.....	Pacific Steam Nav. Co....	Valparaiso.
Dec. 18....	May Fair.....	A. W. Beadle.....	San Francisco.
Dec. 18....	F. H. Buck.....	Associated Oil Co.....	Pedregal.
Dec. 18....	Carib II.....	Robert Wilcox.....	San Francisco.
Dec. 18....	Edith.....	Luckenbach Line.....	Callao.
Dec. 19....	Ucayali.....	Peruvian Line.....	Callao.

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

## Fuel and Water.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 50 shillings per ton of seven barrels.

Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, December 18, 1915:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun Lake	Miraflores Lake	
Sun., Dec. 12.....	127.00	93.42	86.04	86.02	54.30
Mon., Dec. 13.....	128.60	94.29	86.09	86.04	53.99
Tues., Dec. 14.....	127.60	93.68	86.06	86.03	53.87
Wed., Dec. 15.....	126.92	93.15	86.07	86.05	53.79
Thurs., Dec. 16.....	126.71	93.01	86.07	86.05	53.65
Fri., Dec. 17.....	126.60	92.94	86.07	86.05	53.60
Sat., Dec. 18.....	126.45	92.86	86.04	86.04	53.71
Heights of low water to nearest foot.....	125.0	91.0			

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*Note.—The sailings on Monday, January 10 and February 7, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

†Note.—When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Soils	Arrives
Carrillo.....	U. F. C. Dec.	15....	Dec. 22
Colon.....	P. R. R. Dec.	16....	Dec. 22
Tenadores.....	U. F. C. Dec.	18....	Dec. 26
Sanita Marta.....	U. F. C. Dec.	22....	Dec. 29
Advance.....	P. R. R. Dec.	23....	Dec. 30
Metapan.....	U. F. C. Dec.	25....	Jan. 3
Almirante.....	U. F. C. Dec.	29....	Jan. 5
Panama.....	P. R. R. Dec.	30....	Jan. 5
Pastores.....	U. F. C. Jan.	1....	Jan. 9
Zacapa.....	U. F. C. Jan.	5....	Jan. 12

Allianca.....	P. R. R. Jan.	6....	Jan. 11
Calamares.....	U. F. C. Jan.	8....	Jan. 16
Carrillo.....	U. F. C. Jan.	12....	Jan. 19
Colon.....	P. R. R. Jan.	13....	Jan. 18
Tenadores.....	U. F. C. Jan.	15....	Jan. 23

## CRISTOBAL-COLON TO NEW YORK.

Allianca.....	P. R. R. Dec.	23....	Dec. 29
Zacapa.....	U. F. C. Dec.	23....	Dec. 30
Calamares.....	U. F. C. Dec.	27....	Jan. 4
Colon.....	P. R. R. Dec.	30....	Jan. 5
Carrillo.....	U. F. C. Dec.	30....	Jan. 6
Tenadores.....	U. F. C. Jan.	3....	Jan. 10
Advance.....	P. R. R. Jan.	6....	Jan. 13
Sanita Marta.....	U. F. C. Jan.	6....	Jan. 13
Metapan.....	U. F. C. Jan.	10....	Jan. 18
Panama.....	P. R. R. Jan.	13....	Jan. 19
Almirante.....	U. F. C. Jan.	13....	Jan. 20
Pastores.....	U. F. C. Jan.	17....	Jan. 24

## NEW ORLEANS TO CRISTOBAL-COLON.

Abangarez.....	U. F. C. Dec.	18....	Dec. 25
Heredia.....	U. F. C. Dec.	22....	Dec. 27
Atenas.....	U. F. C. Dec.	25....	Jan. 1
Parissima.....	U. F. C. Dec.	29....	Jan. 3
Turrialba.....	U. F. C. Jan.	1....	Jan. 8
Cartago.....	U. F. C. Jan.	5....	Jan. 10
Abangarez.....	U. F. C. Jan.	8....	Jan. 15
Heredia.....	U. F. C. Jan.	12....	Jan. 17
Atenas.....	U. F. C. Jan.	15....	Jan. 22

## CRISTOBAL-COLON TO NEW ORLEANS.

Cartago.....	U. F. C. Dec.	26....	Dec. 31
Abangarez.....	U. F. C. Dec.	26....	Jan. 2
Heredia.....	U. F. C. Jan.	2....	Jan. 7
Atenas.....	U. F. C. Jan.	2....	Jan. 9
Parissima.....	U. F. C. Jan.	9....	Jan. 14
Turrialba.....	U. F. C. Jan.	9....	Jan. 16
Cartago.....	U. F. C. Jan.	16....	Jan. 21
Abangarez.....	U. F. C. Jan.	16....	Jan. 23
Parissima.....	U. F. C. Jan.	23....	Jan. 28
Turrialba.....	U. F. C. Jan.	23....	Jan. 30
Cartago.....	U. F. C. Jan.	30....	Feb. 3
Abangarez.....	U. F. C. Jan.	30....	Feb. 6



# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, DECEMBER 29, 1915. No. 19.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are accordingly charged as beginning from the first of the quarter of the year in which received. Remittances should be made to pay only to December 31, on this basis: Subscription for the rest of the year, October 1 to January 1, is 25 cents. For foreign subscriptions the year is divided into thirds; and remittances for the remainder of this year should be; Between September 1 and January 1, 50 cents.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,

Isthmus of Panama.

## NOTES OF PROGRESS.

### More Small Vessels Make Transit.

The steamships *Edison Light*, *Navajo*, and *Admiral*, which were held at Pedro Miguel Lock on December 18 and 19 when on their way through the Canal from the Pacific to the Atlantic, while lighter draft vessels were completing the transit past the obstruction in Gaillard Cut, made their way past the slides on Thursday, December 23.

The only one of the ships still waiting for transit, of those which collected at the terminals after the slide movements had caused suspension of traffic, is the *Newton*, bound from San Francisco for Stockholm with 6,862 tons of cargo, principally barley and coconut cake. The *Newton* arrived at Balboa on October 15. She is 389 feet in length by 54½ feet in the beam and is drawing 23.9 feet of water.

No other vessels have arrived for transit, and warning has been sent out that vessels should not seek to make use of the Canal route until notified. The passage of the waiting small ships was effected by special efforts, and a stable channel for vessels of even their relatively slight measurements is not assured.

### New Tank Steamship for Union Oil Company of California.

The fleet of the Union Oil Company of California, one of the corporations supplying oil at the Canal, is to be increased by the addition of the tank steamer *La Brea*, which was launched from the yards of the Union Iron Works Company at San Francisco on December 18. The keel was laid on September 15. The *La Brea* is 452 feet 11 inches in length overall, by 56 feet three inches beam, and will draw 27 feet when loaded to her ca-

capacity of 70,000 barrels, with 3,000 barrels of oil in her fuel tanks. Her displacement will be 15,135 tons. The vessel is to be equipped with geared turbines, developing 2,600 shaft horsepower, which should give her a speed of 11 knots.

### Excavation in the Cut during the Past Week.

Excavation from the bases of the slides which have caused the suspension of traffic through the Canal amounted to 195,605 cubic yards during the week ending at 6 a. m., Tuesday, December 28. Other excavation in the Cut during the same period amounted to 24,880 cubic yards, making a total for the week of 220,485 cubic yards. In addition, 16,270 cubic yards were rehandled.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascados.....	15-yard dipper.....	63,825
Gambou.....	15-yard dipper.....	57,990
Paraiso.....	15-yard dipper.....	57,730
Coronel.....	Ladder.....	7,875
Culebra.....	Sauging suction.....	17,850
No. 66.....	Pipeline suction.....	23,300
Marmot.....	Belgian ladder.....	8,185

The average aggregate output from the Cut during the nine weeks preceding that ending with Tuesday, December 28, not including rehandling, was 272,927 cubic yards, the total amount of excavation during that time having been 2,456,343 cubic yards.

### Specie Storage Vault at Pier 8, Cristobal.

The Panama Railroad Company is constructing a vault on the exterior of the land end of pier No. 8 at Cristobal for the storage of specie and other articles of ship's treasure. It is adjacent to the headwall, on the northwest corner of the approach to the pier, and will be finished in concrete to harmonize with the pier shed. The building will be 18 by 20 feet in plan, inside measurement, by about 10 feet high, and will contain a fireproof and practically burglarproof interior vault, seven by eight feet in plan, inside measurement. The construction embraces placing vertical rows of obsolete steel rails all around the exterior and encasing them in concrete. Two combination doors have been obtained from the obsolete store at Mount Hope.

The need of the vault has resulted from the great amount of transfer work at the Cristobal terminals. Up to this time valuable cargo has been stored in the vault in the local freight house in Colon. The freight house was centrally situated with respect to the old piers in Colon, but with the transfer of most of the business to the new Cristobal terminals it became inconvenient and uneconomical to transfer the valuable cargo through the streets of Colon to the old vault.

The United States Navy cruiser *Cleveland* arrived at Balboa on Friday, December 24, from Corinto, to take on coal and supplies. She is due to sail for Corinto on Saturday, January 1.

## VEGETABLES FROM COSTA RICA.

### Supply Department Establishing Agency to Meet Demands at Canal.

The local buyer for the commissary branch of the Supply Department, who has been in Costa Rica several months investigating the possibilities of the supply of fresh vegetables and fruits from that country, and arranging for the establishment of a branch agency there, has been shipping several dozen crates of goods to Cristobal every week. This is only a small proportion of the produce received in cold storage from the United States, but it is expected that consistent buying and encouragement of the gardeners will result in a greatly increased outturn, if conditions of transportation can be made satisfactory.

The fruits and vegetables which have been coming from Costa Rica are grown under extraordinary conditions. The gardens are situated on the slopes of the volcano Irazú, principally in a belt between elevations of 5,000 feet and 7,000 feet above sealevel. The soil is a porous loam of volcanic ash, 15 feet in depth, and so rich in plant food elements as to require no fertilizers. The temperature is almost that of the lower temperate zone in autumn. On the different levels can be grown a great variety of tropical, semitropical, and temperate zone fruits and vegetables, to which the abundance of sunshine and rich soil give delicate flavors.

Among the fruits and vegetables which have been coming from Costa Rica are blackberries and strawberries, oranges, custard apples, cauliflower, cabbage, carrots, beets, string and shell beans, chocho, squash, pumpkins, tomatoes, asparagus, and *palmillos* or "palm cabbage". A new salad vegetable to be handled locally is the *pepino dulce*, or sweet cucumber, a small, ivory-colored cucumber with lilac stripes, which tastes like muskmelon; it is seedless, indicating that, though almost unknown to the horticultural world, it is the product of generations of cultivation. It is expected that avocados will be received shortly, and will be available during most of the off-season for Panama.

Most of the gardens from which the local buyer is purchasing are operated by a colony of Spanish-Americans, originally from Galicia. The produce is shipped from Cartago, through Port Limon, and a shipment is made every week, on a vessel of the United Fruit Company's line arriving at Cristobal on Monday.

The Supply Department has not yet investigated the conditions on the Chiriqui Volcano, in the province of Chiriqui, Panama, but it is probable that there are the same advantageous conditions of soil and climate on its slopes as are found on the volcanoes of Costa Rica. The Supply Department has been endeavoring to interest the natives of Panama in the opportunities in growing fruits and vegetables for the commissary branch.



## RECEIPTS AND EXPENSES.

## Complete Closure of the Canal through October Increases Deficit.

The costs charged to the operation and maintenance of the Canal during October amounted to \$546,759.83, including the proportion of the aggregate overhead expenses thus charged. As the Canal was closed throughout the month there were no collections of tolls, and the month was a dead loss as far as revenues are concerned. This was the first month since May, 1914, in which there were no collections of tolls, as prior to the opening of the Canal, on August 15, 1914, there had been collections on barges towed through the Canal, beginning in May.

The cost of operation and maintenance

during the present fiscal year was exceeded by the tolls collected, up to September; but with the closing of the Canal shortly after the middle of that month, the operation costs exceeded tolls by \$150,335.34 in September, and caused a deficit for the current fiscal year amounting to \$75,196.51. The loss in October increased this deficit to \$621,956.34.

The dredging operations in Gaillard Cut amounted to slightly over one-half of all the costs charged to operation and maintenance, being \$273,999.23 out of a total of \$546,759.83. Of operation and maintenance proper (that is, without including the proportion of the general overhead expense), the dredging costs were slightly over 74½ per cent, or practically three-fourths. To the first of November the dredging costs in the Cut during the fiscal

year aggregated \$972,066.34, out of a total for operation and maintenance amounting to \$2,061,590.41.

The dredging costs for the Cut in October exceeded those for the preceding month by \$14,395.16, and exceeded the costs for August by \$16,405.76. Other items in which there were distinct variations from the usual cost were for maintenance of machinery and equipment at Gatun Locks, and maintenance of the West Breakwater in Limon Bay. The operation of floating cranes showed a credit of \$3,886.60 for October, against a cost of \$3,932.94 in September, the first month in which they were charged to operation and maintenance.

Following is a summary of the costs during the month:

ITEMS.	October.	September.	October, 1914.	Fiscal Year to Date.	
				This year.	Last year.
Marine Division:					
Admeasurement of vessels.....	\$853.16	\$1,131.52	\$971.94	\$3,853.01	\$2,700.37
Local inspection.....	303.28	271.20	324.05	1,105.34	1,162.83
Aids to navigation.....	4,135.86	4,134.28	3,349.67	15,666.03	15,485.86
Pilotage.....	554.00	5,877.82	4,427.13	20,267.32	9,686.33
Operation of harbor tugs, balance.....	3,631.70	3,667.86		12,955.31	
Total, Marine Division.....	9,478.00	15,082.68	9,072.79	53,847.01	29,035.39
Lock operation and maintenance:					
Gatun Locks—					
Superintendence.....	928.23	951.47	1,701.97	4,393.80	5,865.55
Operation.....	8,500.25	10,595.58	10,051.69	37,900.37	33,134.34
Maintenance of machinery and equipment.....	32,573.72	13,914.93	6,460.31	92,282.45	20,049.82
Maintenance of structures.....	1,386.22	494.92	2,404.06	3,136.80	6,954.37
Miscellaneous supplies and expenses.....	212.30	244.17	375.80	931.61	1,143.11
Total, Gatun Locks.....	43,600.72	26,201.07	20,993.83	138,645.03	67,147.19
Gatun Spillway—					
Operation.....	170.14	122.34	161.78	450.40	519.15
Maintenance of machinery and equipment.....	795.22	21.59	151.36	961.59	1,657.89
Maintenance of structures.....	19.44			104.52	430.85
Total, Gatun Spillway.....	984.80	143.93	313.14	1,561.51	2,607.89
Pedro Miguel Lock—					
Superintendence.....	1,302.97	1,379.24	1,455.64	5,778.10	3,970.39
Operation.....	3,403.60	5,855.51	6,003.91	22,117.40	31,288.88
Maintenance of machinery and equipment.....	6,879.23	4,901.49	3,041.89	21,012.32	10,066.86
Maintenance of structures.....	1,959.16	2,187.85	825.61	6,746.02	2,126.73
Miscellaneous supplies and expenses.....	176.66	231.15	160.08	843.12	570.61
Total, Pedro Miguel Lock.....	13,721.62	13,655.24	12,477.13	56,496.96	48,025.47
Pedro Miguel Dam, maintenance.....					
Miraflores Locks—					
Superintendence.....	1,104.93	1,388.13	1,580.08	5,567.38	4,996.91
Operation.....	4,665.48	7,140.81	9,257.63	27,736.28	36,884.97
Maintenance of machinery and equipment.....	7,584.93	5,038.24	4,896.72	20,185.20	15,536.85
Maintenance of structures.....	720.04	1,440.24	1,496.36	4,053.09	4,233.27
Miscellaneous supplies and expenses.....	222.30	183.71	313.84	948.44	1,069.03
Total, Miraflores Locks.....	14,297.68	15,191.13	17,544.63	58,490.39	62,711.03
Miraflores Spillway and East Dam—					
Operation.....				46.09	634.95
Maintenance of machinery and equipment.....	93.97	90.31	554.95	277.33	6,903.17
Maintenance of structures.....	43.18	49.85	29.68	135.28	127.30
Total, Miraflores Spillway and East Dam.....	137.15	140.16	584.63	458.70	7,665.42
Miraflores West Dam, maintenance.....	31.17		95.56	239.15	97.88
Total, lock operation and maintenance.....	72,773.14	55,331.53	52,008.92	255,846.74	188,254.88
Dredging:					
Atlantic entrance.....	547.88	722.87	1,389.33	4,780.44	34,952.47
Gatun Lake.....					
Gaillard Cut.....	273,999.23	259,604.07	135,158.20	972,066.34	276,860.21
Miraflores Lake.....					
Pacific entrance.....		443.96		9,286.43	1,245.91
Total, dredging.....	274,547.11	260,770.90	136,547.53	986,133.21	313,058.59
Gatun Dam, maintenance.....	1,948.49	2,105.01	2,259.78	8,360.66	6,054.40
Removal of floating obstructions.....	2,017.95	1,560.83	839.65	6,929.13	4,257.97
Gatun-Mindí Levee, maintenance.....			878.09		22,039.50
West Breakwater, Colón, maintenance.....	7,594.51	187.86		7,777.37	
East Breakwater, Colón, maintenance.....					
Naois Island Breakwater, maintenance.....	29.20		27.27	58.45	449.88
Damages to vessels in locks.....	445.33	220.71	29.46	1,203.54	29.46
Operation of floating cranes.....	*3,886.60	3,932.94		46.24	
Damages to vessels in Canal.....	2,735.04	372.46	3,452.86	6,197.35	5,639.94
Maintenance of transportation tracks.....					
Total, operation and maintenance.....	367,682.17	339,559.92	205,116.35	1,326,399.80	568,820.01
Proportion of overhead expenses.....	179,077.66	159,505.72	134,041.23	735,190.61	365,415.28
Total.....	546,759.83	499,065.64	339,157.58	2,061,590.41	934,235.29
Revenues, tolls.....		348,730.30	366,786.48	1,439,634.07	728,387.48
Tolls earned in excess of expenses.....			27,628.90		
Expenses in excess of tolls earned.....	546,759.83	150,335.34		621,956.34	205,847.81

\*Credit.

## BUNKERING SHIPS AT DOCKS.

### Portable Conveyors to Be Swung from Booms on Face of Pier Shed.

Booms are being manufactured at Balboa shops for the suspension of 12 motor-driven coal conveyors from the sides of the sheds over Piers 8 and 9, and on barges, so that coal may be unloaded by them into the bunkers of vessels while the latter are discharging or receiving cargo.

Five of the conveyors have arrived on the Isthmus and are ready for erection. Four of the booms have been delivered and the others will probably be ready for erection within a short time.

Two of the conveyors are to be installed on each of the piers named, Nos. 8 and 9, and the placing of the accessory steel work on the sheds of the piers is now in progress. The general features of the arrangements are indicated by the drawing presented below. Along the face of the pier, outside of the shed, runs a 5-foot track, onto which gondolas of coal will be delivered. A conveyor, swung on a boom, affixed to a side column of the pier shed and handled through tackle attached to the unloader mast, will be lowered into a car, and used to lift the coal and discharge it through a telescopic pipe into the hatches of the ship. As each car, containing about 40 tons, is emptied, the unloader will be drawn up clear of it, to be lowered into the next car. The boom will be about 38½ feet in length, by 16 inches in diameter, of yellow pine, and capable of supporting a weight of 10 tons suspended from its outer end when in use. It will be fitted at top and bottom with tackle and a steel shoe attached to a joint which will allow its being swung in a vertical plane.

The four conveyors of this type which are now in use at Cristobal, two each on two 500-cubic yard barges, have been giving satisfactory service. Each barge can deliver from 35 to 50 tons an hour.

### Readjusting Quadrant for East Emergency Dams at Pedro Miguel and Miraflores Locks.

A slight settlement of the backfill behind the east walls at Pedro Miguel and Miraflores Locks has necessitated a readjustment of the rack quadrant by which the dam is turned into place. This quadrant, besides engaging the pinion for swinging the dam, carries a portion of the weight of the short arm, the greater part of the weight of the entire dam being carried on the center pivot. The center pivot is founded on a pedestal of concrete extending down to hard rock, and the quadrant is founded on a concrete cap. In settling, the quadrant has distorted from the true arc of a circle, and while this distortion was not sufficient to prevent operation of the dam, it was believed advisable to make the correction during the period when it would not be required for use. It is also believed that no further adjustments will be required, as the west dams at Pedro Miguel and Miraflores, which were adjusted about a year ago, have shown no signs of further settlement.

The work of readjustment requires the removal of the vanadium steel rack segments and the base plates bodily, as well as the layer of grout in which they were set. Stakes were set before the removal of the sections, by swinging the dam and taking measurements, which will permit the resetting to the correct arc on wedges, by which the proper level of the segment may be secured. After the sections have been lined up and leveled they will

be solidly grouted into place, together with the anchor bolts, which will be placed in new holes drilled for the purpose. As these segments of rack weigh about two tons each, their exact placing is difficult, as it must all be done with wedges and levers.

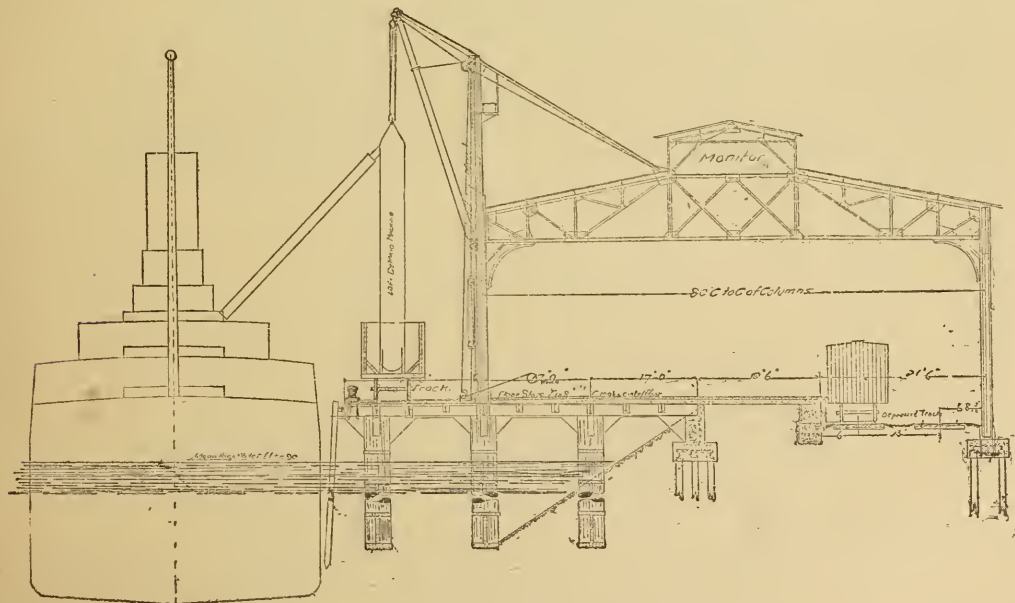
### Index of Current Volume of Canal Record.

Concurrently with the publication of THE CANAL RECORD the articles appearing in it are indexed on cards by the Record Bureau, and upon the completion of the volume the cards are used in the compilation of the comprehensive index which is published for binding with the complete volume. As the index is made up from week to week it is always available for use in finding articles in the current volume, and offices which keep files of THE CANAL RECORD may make use of this index on application to the Record Bureau. Inquiries may be made by telephone, calling No. 10 Executive Office.

### Post-offices to Be Closed on New Year's Day.

The Canal Zone post-offices will be closed all day on January 1, 1916, New Year's Day. No local despatches of mail will be made on that date, and there will be no ships leaving the Isthmus with mail. The usual Sunday and holiday hours will be observed at the post-offices on the following day, Sunday, January 2, and mail will be despatched in accordance with the regular Sunday schedule.

Fifty copies of the annual report of the Governor of The Panama Canal for the fiscal year 1915, with portfolio, and 100 clothbound copies without illustrations have arrived from Washington, for distribution to the higher officials on the Isthmus.



ARRANGEMENT OF BOOM FOR SUSPENSION OF COAL CONVEYOR.

## AMERICAN BIBLE SOCIETY.

Office Building and Apartment House to be Erected at Cristobal.

The building for the American Bible Society to be erected at Cristobal, bids for the construction of which were advertised for in THE CANAL RECORD of December 8, and opened on December 20, is to be built by contract at a cost of \$34,775, exclusive of grading, electrical work, certain interior furnishings, and the sign on the front elevation. It is to be a three-story structure of reinforced concrete, exclusive of a sheltered deck roof, and will serve as both office building and apartment house. It will be situated between Third and Fourth Streets, Cristobal, directly across the narrow street bordering the southwest end of the Canal hotel and on a plot diagonally across from the rear of the schoolhouse. The building will face toward the waterfront at the entrance to the new piers, and its upper floor and roof garden will overlook the surrounding buildings.

The front elevation of the building is presented herewith. It is to be built on simply proportioned lines, the fenestration being plain rectangles and the ornamental features being the stuccoed soffit of the main roof, a projecting tiled roof awning to shelter the entrances, extending across the front and sheltering the terrace, balconies beneath the end windows of the third floor, and a large sign on the front, bearing the words, "The American Bible Society." This sign will be 31 feet long by two feet 10 inches in height

and made of enamelled tile, with black letters on a white ground, bordered by a decorative green margin. The sign was prepared in New York and is to be furnished to the contractor for erection.

The building will be 75 feet long by 48 feet six inches deep, and 46 feet high to the level of the floor of the roof garden, or 60 feet to the ridge of the upper roof. This will be one of the highest buildings at the Atlantic terminal, and will be within four feet of the height of the Administration Building at Balboa Heights.

The main entrance at the front of the ground floor will give onto a public space or waiting room, eight feet 10 inches wide by 22 feet one inch in length, the lengthwise axis lying parallel to the front of the building. At the far side of this public space will be a sales counter, beyond which will lie a sales room, 22 feet one inch long by 16 feet 5½ inches wide. Doors will lead from the sales room to store rooms, extending back to the rear of the house, and to an office on the right as one enters from the front, and to a packing room on the left.

At the rear of the office will be a bedroom for a servant, and a laundry; and at the opposite end of the building will be two other bedrooms for employees. Verandas will extend along the front and rear of the upper floors of the building, and the rear of the first floor. They will be enclosed by the outer walls of the building, with large open spaces screened with copper mesh.

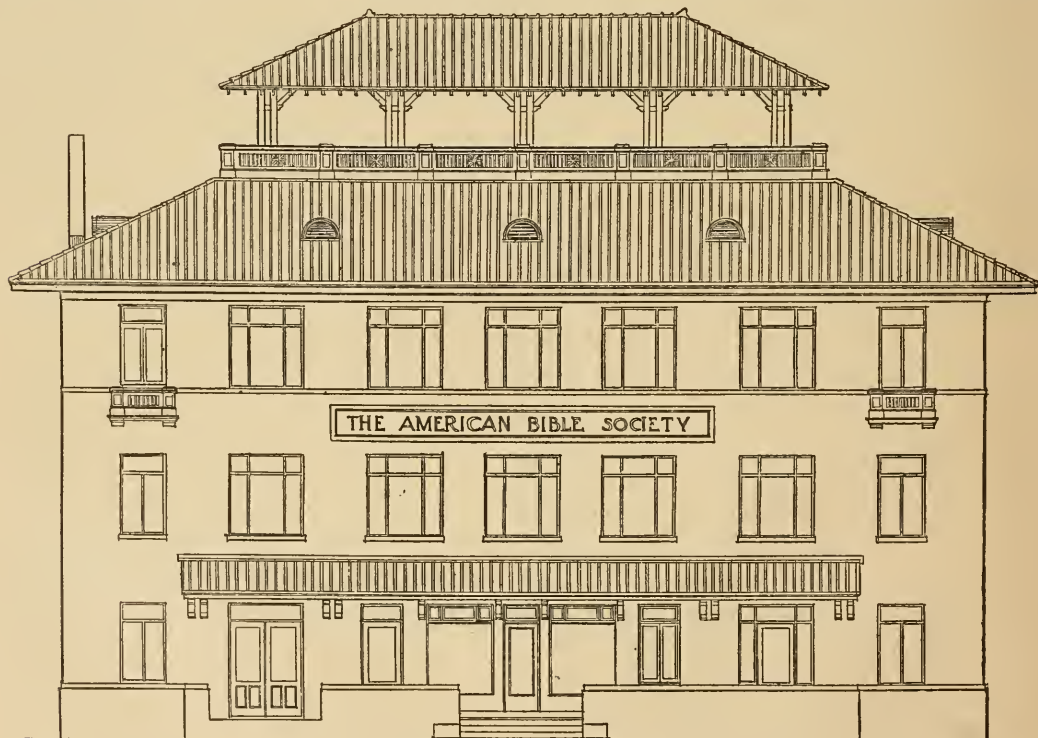
The second floor will be devoted to one large apartment for the agent of the society. It will have a living and dining room near the front center, flanked by five bedrooms, including two guest's rooms, and by kitchen and baths.

The third floor will be used for two apartments, one on each side of the central hall. Each apartment will have a living room, a dining room, three bedrooms, kitchen, and baths.

The roof of the building will be of red tile. The roof garden will be a flat space surmounting the roof, 49 by 22 feet in plan, surrounded by a wooden railing and covered with a tile roof. It will be used as a lookout for vessels coming into the harbor and as a cool place to rest in the evenings.

### Keeping Crawling Insects Out of Quarters.

In the erection of the frame quarters at the Darien radio station and of quarters transferred to Ancon, as well as some of the new buildings erected at Corozal for the Army forces, special care has been taken to insulate the interiors against the access of ants and other crawling insects so numerous on the Isthmus. The walls of the buildings were supported on short wooden columns, resting on concrete footings, into each of which was built a cup or gutter, two inches wide and 1½ inches deep, surrounding the entire block. The cups are to be kept filled with larvacide and those on the outside footings are protected by a small projection of con-



FRONT ELEVATION OF AMERICAN BIBLE SOCIETY'S BUILDING TO BE ERRECTED AT CRISTOBAL.



crete, like a pent roof, to keep out the heavy, driving rains which frequently occur. Small metallic cups were installed on the pipes and wires running into the house; these were brought into the house vertically from beneath, and the cups affixed in a horizontal plane.

The arrangement has so far proved fairly effective where the cups are kept filled with larvacide and vegetation not allowed to grow against the house. One company of wood ants gained entrance to one of the buildings at Darien, but it was found that they had come in by means of a clump of grass, which, waving back and forth in the breeze, touched intermittently against the lower edge of one of the walls. When the grass was cut down the ants already in the building, finding their line of communication broken, returned to the spot and dropped to the ground. Other wood ants, however, having gained entrance, have propagated inside, living in the wood. No other crawling insects give any trouble.

#### Water Rents.

Water rents for the quarter ending December 31, 1915, will be due and payable, January 1 to 16, 1916, at the water service office, Avenue B, Panama, and at the water service office, Eighth and Cash Streets, Colon. The discount period will end on January 16, 1916. All bills must be paid on or before February 16 to avoid forced collection and the shutting off of water.

In Colon the notices will not be delivered on the premises, but they may be obtained by the property owners at the office, where the water rents are payable.

#### Swimming Pool for Employees at Balboa.

A swimming pool for employees and their families living at Balboa and Ancon is to be constructed near the Canal clubhouse at Balboa. Fresh water may be used, from the system for the south end of the Canal, supplied from the Chagres River through the purification plant at Miraflores. The pool will be equipped with springboards and rings and illuminated for swimming at night. The plan dimensions of the pool are to be 50 by 160 feet, and the depth will vary from three to 12 feet. The pool at the Hotel Washington is 100 by 125 feet in plan and from three to nine feet deep. The estimated cost of the Balboa pool and accessory plant is approximately \$8,000.

#### Coasting in the Tropics.

Children at Gatun have found an equivalent for the northern sport of coasting on snowy hills by developing a slide on the grass covered slope of one of the steep hills in the town. They use a plank sled made of barrel staves, sliding on the convex surfaces, which are smoothed and greased beforehand.

Children on Colon Beach build at one time a timber toboggan slide, down which they coasted on sheets of corrugated iron, between guide planks built along the sides. The slide was demolished after one of the boys fell off it and broke his arm.

#### Departure of the "Columbia."

The cruiser *Columbia* of the United States Navy, which arrived at Cristobal from Guantanamo on Thursday, December 16, bringing Admiral Grant on a visit of inspection of the submarines stationed at the Canal, sailed for Philadelphia on Thursday, December 23.

## LAKE AT DRY SEASON LEVEL.

Surface at Approximately 86½ Feet above Sea-level.—Records of Last Season.

Orders were given on December 18 to raise the surface of Gatun Lake from 86 feet above sealevel, around which it had been maintained since the first of the month, to elevation 86.50. No spillway operations have been made since the 18th, and the surface reached 86.50 on Tuesday, December 28.

The last dry season was the first during which the Canal was in operation. On January 1, 1915, the lake was at elevation 87.0 feet above sealevel, which represented an increase in storage of 12,154 million cubic feet during the year (from the elevation of 84.32 feet on January 1, 1914), or a total storage of 192.24 billion cubic feet at the beginning of the dry season of 1915. During the preceding year 508 lockages had been made at Gatun and 502 at Pedro Miguel.

The total yield for the Gatun Lake watershed during the dry season of 1915 was 43,924 million cubic feet. The evaporation from the lake's surface for the same period was 9,427.5 million cubic feet. This gave a net yield of 34,496.5 million cubic feet. Of this amount, 23,263.5 million cubic feet were wasted at the spillway, 8,311.8 million cubic feet were used for hydroelectric power, 3,724.6 million cubic feet were used for lockages and tests, 182.2 million cubic feet for municipal water supply, 97.0 million cubic feet for suction dredges, and 174.4 million cubic feet were leakage. On May 1, 1915, the surface of the lake was at elevation 86.44 feet above sealevel. This represented a decrease of 1,257 million cubic feet in storage. During the dry season 492 lockages were made at Gatun and 491 at Pedro Miguel.

The 1915 dry season run-off was unusually large. The spillway discharges as the result of freshets on February and April, had they been stored, would have raised the surface from 87 to 89.95 feet. The direct rainfall on the surface of the lake practically equalled the loss by evaporation during the dry season, taken in its entirety.

During the month of March, the lake lost 0.4 foot by evaporation; throughout the other months of the dry season the run-off was sufficient to maintain the level at 87 feet, and occasionally to create a surplus, which was wasted through the spillway. For the entire dry season of 1915 the rainfall was 194 per cent of normal at Balboa Heights; 94 per cent of normal at Culebra; 126 per cent at Gamboa; 117 per cent at Alhajuela; 137 per cent at Gatun; and 153 per cent at Colon. The average for the Canal Zone was 122 per cent of normal.

## OFFICIAL CIRCULARS.

### Telephone Franks.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., December 20, 1915.

To all concerned.—With the expiration of the outstanding telephone franks on December 31, 1915, the practice of issuing telephone franks will be discontinued, except to those officials who reside permanently at the Hotels Tivoli or Washington.

GEO. W. GOETHALS,  
Governor.

### Burning Electric Lights during Daylight Hours.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., December 20, 1915.

To all concerned.—It is noticeable that sufficient care is not taken in turning off electric lights during daylight hours.

Employees are hereby cautioned to be more careful in this respect and heads of departments and divisions are directed to observe and correct failures to comply with this circular.

GEO. W. GOETHALS,  
Governor.

### Misdirected Letters.

BALBOA HEIGHTS, C. Z., December 28, 1915.

The following insufficiently addressed letters and packages have been received at the office of the Director of Posts and may be procured upon request of the addressee:

*Albern, Grover	Lassoff, Samuel
*Arbus, Miss Muriel	Luce, Percy E.
*Arthur, J. D.	Macbeth, John C.
*Baker, Henry	Mentz, Harry W.
*Bernal, Mrs. Eugenia	Moore, Irving H.
*Bordsley, Joseph	*Morrissey, Wm. J.
Bull, Freeman N.	Murphy, Michael
Buhr, G. H. de	Noble, Mrs. W. H.
Calwell, Geo. A.	Oller, Elgie
*Campbell, Mrs. Chas. R.	O'Neill, Mrs. James C.
*Cheney, Frank W.	Patterson, E.
Cleghorn, D.	*Perkins, Mrs. Robert
Chrzanoski, C.	*Pratt, Wm. V.
Cocini, Joseph	Price, R. R.
Coy, Virginia	Ramirez, Juan B.
Denny, Miss May	Roberts, A. C.
Eshon, Daniel	Rose, M. L.
*Gill, W. B.	Sheshan, Frank
Goodwin, Walton	*Shillenforth, Jos.
Grant, F. I.	Small, Mrs. Beresford
Grant, Ira N. (3)	*Stotzer, Mrs. Fred
Grates, Hubert	Strunz, Harry
*Grenfell, E. W.	Sutton, I. R.
Gregory, J. B.	Sweet, Lyle
Hunt, James	*Voetelman, Mrs. A.
*Isley, Mrs. Charles	*Walsh, Geo. S.
James, P. A.	*Walsh, Phillip
Johnson, Zac B.	Welsh, Phillip
Keith, F.	Williams, W. H.
Kellifer, Edwin	Wilson, Ralph Barker
Kopald, Chas.	*Yates, Anderson
*Card. †Package. ‡Catalog.	

## JOINT LAND COMMISSION.

### Notice of Award.

In the matter of the claim of Richard Welch for property located in or near La Seiba, award No. 104, docket No. 1182, November 24, 1915—An award is hereby made against the United States in favor of the person hereinafter named, in the sum of \$175 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 24th

### Deceased Employees.

Name	Check No.	Native of	Isthmian Residence	Employed by	Date of death
Clarke, George.....	121549	Barbados.....	Camp Bird.....	Supply Dept....	Dec. 21, 1915.
Elcock, Joseph.....	88592	Barbados.....	Folks River.....	Dec. 22, 1915.	
Godard, Joseph.....	46286	Barbados.....	Building Div....	Dec. 19, 1915.	
Henriquez, Alfred.....	87007	Colon.....	P. R. R.....	Dec. 20, 1915.	
Jules, Altanuse.....	89263	Guadeloupe.....	Colon.....	P. R. R.....	Dec. 22, 1915.
Terrelonge, Joseph, alias Fer- lonje.....	88865	Jamaica.....	Colon.....	P. R. R.....	Dec. 17, 1915.

The estates of the above-named deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

day of December, 1915, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

*Richard Welch, docket No. 1182*—For all right, title, and interest which the said Richard Welch may possess or may have possessed in and to crops, fruit trees, and any other improvements in or near La Seiba, the sum of \$175 United States currency.

RICARDO J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

#### Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 205, docket numbers as noted, October 26, 1915—With reference to the following claims, the evidence before the Commission is that settlement thereof has been made by the United States:

No.	Claimant	Tax	Date of Payment.
3215	Ruperto (Rupertia) Lopez	66	11-13
3217	Resa Vasquez	145	8-14
3220	Blas G. Perez	896	8-14
3241	Clemente Galvez	893	4-12-14
3233	Gabriela Cabeza (s)	897	8-14
3234	Salvador (E.) Cerezo	863	8-14
3235	Caferio (Sefierio) Nino	875	8-14
3236	Celestino	899	8-14
3239	Manuel Sierra	902	8-14
3220	Simone Galvez	25	11-14
3278	Germaine (Germaine) Devaux	1040	4-15
3287	Adella Betancourt (now Hyton)	566	5-15
3389	Peter Morgan	564	5-8-15
3394	James Gordon	2	15-15
3396	John Smith	7-11-14	
3421	Joseph Taylor	1-9-15	
3430	Silb (Blestra) Herrera	12-13	
3431	Vicente Ortega	1097	10-13
3432	Maria Gonzales	2055	1-14
3433	David Castillo	1060	8-14
3432	Felix Castillo	1772	8-13
3443	Eusebio Gomez	106	11-13
3445	Juan de la Cruz Cantillo (a)	2064	12-13
3446	Jaquinto Herrera	1881	10-13
3451	Juan Rivas	124	10-13
3455	Miguel A. Caicedo	366	12-13
3457	Miguel Bertram (Bertran)	10-13	
3459	Louis (Luis) Lopez	5-14	
3461	Louis Toussaint (Toussaint)	4-15	
3470	Miguel Barrio (Varia)	6-14	
3513	Thomas Pugh (Puch)	1-15	
3517	Augustina Cajar	2010	5-14
3522	Juan Gamero (Gamero)	786	1-15
3528	Joseph Alexander	352	9-13
3529	Joseph Alexander	236, 245	9-13
3531	Antonio Blanco	5-14	
3539	Rafael Ortega	7-14	
3562	Elizabeth Edwards-Dowridge	581	8-15-14
3564	Theodore Barnes	896	3-15
3575	Clarence T. Allen	1203	1-15
3578	Clavert Hayot	786	2-15

In view of the above settlements, no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

RICARDO J. ALFARO, RAMON ARIAS F., JR., NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of sundry claims, rule of dismissal No. 230, docket numbers as noted, November 18, 1915—With reference to the following claims, the evidence before the Commission is that settlement thereof has been made by the United States:

Docket No.	Claimant	Tax	Date of Payment.
1493	Thomas Brown	10-15	
1517	Jose N. Villaverde	10-30-15	
1828	Jose Ortega	10-13	
2540	Jose N. Villaverde	1872	10-30-15
2555	Jose N. Villaverde	10-30-15	
3041	Fred N. Carrington	940	10-15
3017	W. H. Carrington	434, 466, 494	5-8-15
3526	Fernando Gonzalez	12-14	
3574	Thomas Brown	10-15	

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

RICARDO J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of the claims of Victor Nira, for property located in the Trinidad Valley, rule of dismissal No. 234, docket Nos. 939, 2476, and 3400, November 27, 1915—The claims of Victor Nira, docket Nos. 939, 2476, and 3400, were taken up for hearing on November 18, 1915, are hereby disallowed, as the evidence presented to the Commission does not justify an award being made.

RICARDO J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

In the matter of the claims of Blas Mindieta (Mendieta), for property located at or near Escobar, rule of dismissal No. 235, docket Nos. 1043 and 1999, November 27, 1915—The claims of Blas Mindieta (Mendieta), docket Nos. 1043 and 1999, which came on for hearing on November 27, 1915, are hereby disallowed, as the evidence presented to the Commission does not justify an award being made.

RICARDO J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

## COMMISSARY DEPARTMENT.

### Quarterly Inventory at Commissary Stores.

For the purpose of taking the usual quarterly inventory, the following stores will be closed on Tuesday, January 4, the grocery and cold storage sections to be opened at 10 a. m. on the morning of Wednesday, January 5, and the other departments as soon thereafter as possible:

Cristobal, Gatun, Las Cascadas, Empire, Culebra, Paraiso, Pedro Miguel, Corozal, Ancon, Balboa, and La Boca.

The following stores will be closed on January 4 only, and will be opened for business at the usual hour on January 5:

Camp Bierd, Gamboa, and Toro Point.

### Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective December 30 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list gives retail prices of cold storage provisions which will be effective December 30, 1915. The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

	Price.
Beef, suet, special, per lb.	0.03
Beef suet, native, per lb.	0.07
Soup beef, special, per lb.	0.05
Soup beef, native, per lb.	0.03
Soup bone, special, per lb.	0.02
Soup bone, native, per lb.	0.11
Stew beef, special, per lb.	0.08
Stew beef, native, per lb.	0.08
Plate beef, special, per lb.	0.08
Plate beef, native, per lb.	0.08
Chuck roast (3 lbs. up), special, per lb.	0.12
Chuck roast (3 lbs. up), native, per lb.	0.08
Rib roast, 24 cut (3 lbs. up), special, per lb.	0.12
Rib roast, 24 cut (3 lbs. up), native, per lb.	0.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	0.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	0.11
Pot roast, special, per lb.	0.20
Pot roast, native, per lb.	0.12
Rump roast, special, per lb.	0.20
Rump roast, native, per lb.	0.12
Porterhouse roast, choice, per lb.	0.21
Porterhouse roast, special, per lb.	0.22
Porterhouse roast, native, per lb.	0.16
Chuck steak, special, per lb.	0.13
Chuck steak, choice cut, native, per lb.	0.09
Round steak, bottom, special, per lb.	0.13
Round steak, bottom, native, per lb.	0.09
Round steak, top, special, per lb.	0.15
Round steak, top, native, per lb.	0.12
Sirloin steak, special, per lb.	0.20
Sirloin steak, native, per lb.	0.12
Sirloin steak, choice cut, special, per lb.	0.23
Sirloin steak, choice cut, native, per lb.	0.20
Rump steak, special, per lb.	0.20
Rump steak, native, per lb.	0.17
Porterhouse steak (14 lbs. up), choice, per lb.	0.34
Porterhouse steak (14 lbs. up), special, per lb.	0.34
Porterhouse steak (14 lbs. up), native, per lb.	0.28
Porterhouse steak, short, choice, per lb.	0.27
Porterhouse steak, short, special, per lb.	0.20
Tenderloin steak, special, per lb.	0.35
Tenderloin steak, native, per lb.	0.25
Tenderloin steak, western, special, per lb.	0.27

### FRESH MEATS.

Lamb chops, per lb.	0.29
Lamb chops, shoulder, per lb.	0.20
Lamb, legs, 5 to 8 lbs., per lb.	0.20
Lamb, shoulder, trimmed, not less than 3 1/2 lbs.	0.15
Lamb, stewing, per lb.	0.12
Mutton chops, short cut, per lb.	0.23
Mutton chops, shoulder, per lb.	0.17
Mutton, leg, 8 to 10 lbs., per lb.	0.16
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	0.12

Mutton, stewing, per lb.	0.09
Pork hams, fresh (see footnote), per lb.	0.25
Pork loins, chops, or roast, per lb.	0.24
Pork, shoulders, fresh (see footnote), per lb.	0.20
Veal chops, per lb.	0.20
Veal chops, shoulder, per lb.	0.27
Veal cutlets, per lb.	0.45
Veal, loin for roasting, per lb.	0.47
Veal, shoulder for roasting, not under 4 lbs., per lb.	0.20
Veal, stewing, per lb.	0.16

### MISCELLANEOUS.

Brains, calves', per lb.	0.07
Calves' heads, ea.	0.08
Kidneys, beef, per lb.	0.09
Livers, beef, per lb.	0.08
Livers, calves', per lb.	0.22
Pates de foie gras, per lb.	0.31
Pigs' head, fresh, per lb.	0.05
Pigs' head, fresh, whole, ea.	0.83
Pigs' heads, fresh, 3 head, half	0.24
Sausage, Bologna, per lb.	0.19
Sausage, frankfurter, per lb.	0.10
Sausage, liederwurst, per lb.	0.19
Sausage, pork, per lb.	0.24
Sausage, pork, commingled, per lb.	0.24
Sausage, Salami, per lb.	0.38
Spare ribs, pork, per lb.	0.16
Steak, hamburger, pkg.	0.17
Steak, hamburger, 10-pound container, per lb.	0.20
Sweetbread, beef, per lb.	0.20
Tails, ox, per lb.	0.09
Tongue, beef, native, whole, per lb.	0.20
Tongue, per lb.	0.24
Yeast, cake	0.02

### CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	0.31
Bacon, breakfast, sliced, per lb.	0.32
Bacon, sliced, per lb.	0.28
Bacon, squares, whole square, per lb.	0.19
Bacon, strips, whole strip	0.20
Beef, corned—No. 1, per lb.	0.15
Beef, corned—No. 2, per lb.	0.14
Ham, genuine Westphalia, per lb.	0.50
Ham, minced, "Bologna style", per lb.	0.17
Ham, shoulders, boneless, sugar cured, whole	0.47
Ham, shoulder, per lb.	0.17
Ham, sugar cured (whole) per lb.	0.24
Ham, sugar cured (half) per lb.	0.27
Ham, sugar cured (sliced) per lb.	0.32
Ham, sugar cured, boiled, per lb.	0.31
Ham, sugar cured, boiled (half)	0.39
Ham, sugar cured, boiled (sliced)	0.39
Pigs' feet, pickled, per lb.	0.08
Pork, bellies, fancy roasting, milk fed, per lb.	0.24
Pork, clear, per lb.	0.11
Pork, standard mess, per lb.	0.11
Tongue, beef, corned native, whole, per lb.	0.20
Tongue, pigs', per lb.	0.22

### POULTRY AND GAME.

Broilers, corn fed, per lb.	0.31
Broilers, milk fed, per lb.	0.34
Capon, per lb.	0.37
Chickens, fancy roasting, corn fed, per lb.	0.27
Chickens, fancy roasting, milk fed, per lb.	0.28
Ducklings, per lb.	0.26
Fowls, light, per lb.	0.23
Fowls, western, dry picked, per lb.	0.25
Geese, per lb.	0.18
Grouse, ea.	0.45
Squabs, ea.	0.45
Turkeys, per lb.	0.32

### DAIRY PRODUCTS.

Butter, creamery, special, per lb.	0.49
Butter, creamery 60-62 lb. tub, whole, per lb.	0.48
Butter, Sheffield farms, extra fancy, per lb.	0.58
Cheese, Edam, ea.	1.50
Cheese, Edam, tin.	0.39
Cheese, Colby, per lb.	0.41
Cheese, Parmesan, per lb.	0.39
Cheese, Philadelphia cream, ea.	0.09
Cheese, Roquefort, per lb.	0.56
Cheese, snappy, per lb.	0.39
Cheese, Swiss, per lb.	0.43
Cheese, Young America, per lb.	0.23
Cream, 30 per cent, qt.	0.17
Cream, 30 per cent, qt.	0.29
Cream, 30 per cent, qt.	0.52
Eggs, fresh, per doz.	0.44
Eggs, fresh, 1/2 doz. (only).	0.27
Ice cream, per lb.	0.25
Ice cream, (see footnote) qt.	0.25
Ice cream, (see footnote) gal.	0.50
Milk, Sheffield farms, qt.	0.15
Oleomargarine, per lb. can	0.29

### FISH.

Bluefish, fresh, per lb.	0.19
Codfish, dried, per lb.	0.11
Haddock, smoked, per lb.	0.11
Halibut, fresh, per lb.	0.09
Herring, smoked, per lb.	0.11
Oysters, fresh, per qt.	0.40
Salmon, fresh, per lb.	0.12
Whitefish, smoked, per lb.	0.20

### VEGETABLES.

Beets, per lb.	0.02
Brussels sprouts, per lb.	0.17
Cabbage, per lb.	0.03
Carrots, per lb.	0.02
Cauliflower, per lb.	0.08
Celery, per bunch	0.19
Choco, each	0.02
Corn, green, per doz.	0.15



## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next six weeks are given in this table:

## DECEMBER.

DATE.	Time and height of high and low water.		
Wed., Dec. 29.....	2:49 8:35	15:03	21:04
Thurs., Dec. 30.....	2:8 12:4	2:8 13:3	
	3:42 9:31	15:56	21:59
Fri., Dec. 31.....	2:9 12:1	3:9 14:3	
	4:40 10:36	16:56	23:02
	2:7 12:1	3:2 13:2	

## JANUARY.

DATE.	Time and height of high and low water.		
Sat., Jan. 1.....	5:51 11:55	18:06	.....
	2:5 12:7	3:1	.....
Sun., Jan. 2.....	0:16 6:52	13:00	19:14
	5:1 1:9	13:5	.....
Mon., Jan. 3.....	1:19 7:57	14:00	20:17
	14:7 1:0	14:1	1:8
Tues., Jan. 4.....	2:17 8:55	14:58	21:15
	3:1 0:0	15:0	0:8
Wed., Jan. 5.....	3:16 9:57	15:54	22:08
	15:9 -0:9	15:8	0:1
Thurs., Jan. 6.....	4:11 10:56	16:48	22:57
	16:3 1:2	16:3	0:3
Fri., Jan. 7.....	5:05 11:22	17:41	23:46
	16:4 -1:5	16:6	-0:4
Sat., Jan. 8.....	5:58 12:09	18:30	.....
	16:2 1:2	16:6	.....
Sun., Jan. 9.....	0:35 6:48	12:50	19:17
	-0:1 15:4	-0:6	16:6
Mon., Jan. 10.....	1:27 7:35	13:35	20:03
	1:5 15:0	0:4	15:6
Tues., Jan. 11.....	2:15 8:24	14:36	20:49
	1:2 14:1	1:5	14:7
Wed., Jan. 12.....	3:08 9:14	15:29	21:39
	2:2 0:0	2:6	13:7
Thurs., Jan. 13.....	4:04 10:11	16:24	22:34
	2:8 12:2	3:6	12:9
Fri., Jan. 14.....	5:00 11:15	17:23	23:37
	3:1 11:6	4:2	12:4
Sat., Jan. 15.....	6:01 12:22	18:24	.....
	3:7 11:4	4:5	.....
Sun., Jan. 16.....	0:37 7:01	13:23	19:24
	12:2 3:6	11:5	4:4
Mon., Jan. 17.....	1:32 7:57	14:35	20:19
	12:4 3:3	11:9	4:0
Tues., Jan. 18.....	2:20 8:47	15:00	21:07
	12:7 4:2	12:4	3:5
Wed., Jan. 19.....	3:05 9:30	15:48	21:59
	13:1 2:1	12:9	2:9
Thurs., Jan. 20.....	3:45 10:09	16:22	22:27
	13:5 1:6	13:4	2:4
Fri., Jan. 21.....	4:26 10:45	16:59	23:02
	13:8 1:2	13:8	2:0
Sat., Jan. 22.....	5:03 11:19	17:34	23:40
	14:0 1:0	14:2	1:7
Sun., Jan. 23.....	5:41 11:53	18:03	.....
	14:1 1:0	14:4	.....
Mon., Jan. 24.....	0:16 6:17	12:28	18:40
	1:7 14:1	1:2	14:6
Tues., Jan. 25.....	1:06 7:04	13:00	19:14
	1:7 13:9	1:6	14:6
Wed., Jan. 26.....	1:34 7:32	13:35	19:51
	1:9 13:6	2:0	14:4
Thurs., Jan. 27.....	2:21 8:15	14:35	20:34
	2:2 13:3	2:5	14:1
Fri., Jan. 28.....	3:14 9:06	15:27	21:29
	2:5 12:8	3:0	13:8
Sat., Jan. 29.....	4:15 10:11	16:31	22:36
	2:7 12:3	3:3	13:5
Sun., Jan. 30.....	5:22 11:26	17:42	23:52
	2:7 12:5	3:4	13:6
Mon., Jan. 31.....	6:32 12:40	18:55	.....
	2:2 13:0	3:0	.....

## FEBRUARY.

DATE.	Time and height of high and low water.		
Tues., Feb. 1.....	1:15 7:39	13:46	20:03
	14:1 1:4	14:0	19:0
Wed., Feb. 2.....	2:06 8:38	14:45	21:02
	14:8 0:4	14:9	1:0
Thurs., Feb. 3.....	3:05 9:31	15:40	21:54
	15:0 -0:5	15:0	19:0
Fri., Feb. 4.....	3:58 10:19	16:31	22:41
	16:0 2:1	16:5	-0:5
Sat., Feb. 5.....	4:50 11:03	17:19	23:27
	16:1 -1:4	16:8	-0:7
Sun., Feb. 6.....	5:39 11:47	18:08	.....
	16:2 -1:1	16:8	.....
Mon., Feb. 7.....	0:11 6:25	12:29	18:47
	15:5 15:8	-0:4	16:3
Tues., Feb. 8.....	0:55 7:08	13:14	19:29
	0:1 15:0	0:6	15:5
Wed., Feb. 9.....	1:41 7:53	14:00	20:10
	1:0 14:1	1:7	14:5

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day. If it is high or low water, the heights, in feet and tenths, are reckoned from mean low water springs, which is the amount of soundings on the

Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sealevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Fuel and Water.

Cool is supplied by vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per month. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cranes alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 50 shillings per ton of seven barrels.

Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

All standard lubricants, light and heavy hardware, cordage, and miscellaneous ship chandlery supplies are sold from the storehouses at Cristobal and Balboa.

Ice may be obtained in any reasonable quantity. The price is 33 cents per 100 pounds at either Cristobal or Balboa.

Repairs to vessels may be made to any extent, except turning of the largest crank shafts or longest line shafts or work requiring dry docking of largest vessels.

The Government hospital service is fully equipped for the treatment of medical and surgical cases. The charge for consultation at the dispensaries is \$3; for hospital treatment for seamen in ward the charge is \$1.50 per day.

Subsistence supplies, including a large stock of fresh meats, vegetables, canned groceries, fruits, bakery products, etc., are available for quick delivery at either terminal. Prices are generally lower than the retail prices in the United States, and compare favorably with prices in any part of the world.

Laundry is handled quickly, and no advance notice is required. The following are representative charges for ship's laundry: Trousers and jackets, five cents each; aprons, caps, sheets, tablecloths, napkins, towels, one cent each.

Application for supplies, or for services, should be made to the Captain of the Port, Cristobal or Balboa. Mail, other than registered, and care letters for men on ships which will call at the terminal ports, or pass through the Canal, may be addressed in care of the captains of the ports, if desired; or may be addressed to Cristobal or Balboa, general delivery, with the name of the vessel written plainly; or, in case the vessel has a known representative on the Isthmus, in care of such representative.

Deposits to cover charges for the purchase of supplies may be made with any of the Assistant Treasurers of the United States, who are to be found at the larger seaports, or with the Assistant Auditor of The Panama Canal at Washington, D. C. As soon as these deposits are made, cable information is sent to The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Panacanal, Panama," in the United States, "Panacanal, Washington."

Shipping parties addressing The Panama Canal by mail, should address "The Panama Canal, Balboa Heights, Canal Zone," for delivery on the Isthmus, and "The Panama Canal, Washington, D. C.," for delivery in the United States.

## Taboga Launch Service.

Leave Balboa dredge landing—Daily, except Thursday, at 5:30 p. m.; Monday, Thursday, Saturday, and Sunday, at 9:40 a. m.

Leave Taboga—Daily, except Friday, at 7 a. m. (On Mondays and days following holidays, one hour earlier); Monday, Thursday, and Saturday at 1:30 p. m.; Sunday at 7:15 a. m. The 9:40 a. m. trip from Balboa await the arrival of Panama Railroad trains.

There will be no 5:30 p. m. trip from Balboa on Sundays and holidays, unless the number of guests desiring transportation from Taboga exceeds the number that the launch is able to take in one trip; in which case a trip will be started from the Asiatic landing at 3 p. m., reaching Balboa in time to leave again at 5:30.

In addition to the regular launch service, on December 31 the tug Cordoba will sail from Balboa at 5:30 p. m., returning from Taboga on Sunday at 7 p. m.

	Price.
Cucumbers, per lb.....	.09
Eggplant, per lb.....	.09
Lettuce, per lb.....	.17
Onions, per lb.....	.03
Parsnips, per lb.....	.02
Peppers, green, per lb.....	.12
Plantains, per doz.....	.12
Potatoes, white, per lb.....	.02
Squash, per lb.....	.03
Tomatoes, per lb.....	.09
Turnips, per lb.....	.02*
Yams, luca, per lb.....	.03

## FRUITS, DRIED.

Apples, evaporated, per lb.....	.12
Apricots, evaporated, per lb.....	.16
Currants, cleaned, pkg.....	.13
Figs, 5-oz pkg.....	.05
Figs, 11-oz pkg.....	.10
Peaches, evaporated, per lb.....	.18
Pears, evaporated, per lb.....	.18
Peel, citron, per lb.....	.22
Peel, lemon, per lb.....	.16
Peel, orange, per lb.....	.16
Prunes, stewing, per lb.....	.11*
Raisins, seeded, pkg.....	.11
Raisins, table cluster, per lb.....	.23

## FRUITS, FRESH.

Apples, fresh, per lb.....	.04
Apples, fresh, select, per lb.....	.06
Bananas, 8 hands and over, per bunch.....	.40
Bananas, 6 and 7 hands, per bunch.....	.28
Bananas, ea.....	.00
Cranberries, per lb.....	.11*
Grapes, Malaga and Tokay, per lb.....	.17
Grapefruit, select, ea.....	.07
Grapefruit, tropical, ea.....	.14
Lemons, per doz.....	.16
Limes, per 100.....	.60*
Oranges, select, ea.....	.05
Oranges, tropical, per doz.....	.12

\* Indicates advances from preceding list.

\*\* Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

† Sold only from commissaries, no orders taken for delivery.

† Not less than ½ ham or ½ shoulder of fresh pork will be sold.

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, December 30, 1915:

## FISH.

Corbina, per lb.....	.11
Mackerel, per lb.....	.11
Pan fish, per lb.....	.11
Red snapper, per lb.....	.11
Turtle (wt. 100 to 250 lbs.).....	.67

## FRUITS.

Coconuts, dry, ea.....	.05
Coconuts, water, ea.....	.07
Papaya, per lb.....	.02
Pineapples, ea.....	.15
Sugar cane, ea.....	.03
Limes, per 100.....	.60
Plantain, ea.....	.01

## VEGETABLES.

Beans, string, per lb.....	.12
Celery, soup, per bunch.....	.04
Chayotes, ea.....	.02
Corn, green, doz.....	.15
Cucumbers, per lb.....	.10
Egg plant, special, ea.....	.10
Ginger, per lb.....	.05
Lettuce, per lb.....	.17
Mint, per bunch.....	.04
Okra, ea.....	.00
Onions, green, per bunch.....	.04
Parsley, per bunch.....	.04
Peppers, hot, per doz.....	.05
Peppers, sweet, ea.....	.01
Radishes, per bunch.....	.04
Spinach, per bunch.....	.02
Roses (Hospital Farm), per doz.....	.50

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., December 26, 1915.)

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO			
						Nature	Tons	Gross	Net
Dec. 23....	*Newton.....	American....	New England Coal & Coke Co.	San Francisco.....	Stockholm.....	Barley and coconut cake	6,862	5,624	3,579

\*Vessel waiting at Pedro Miguel.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
Dec. 27.....	Relief.....	Merritt & Chapman.....	Kingston.....	Dec. 22.....	Scythian.....	Leyland Line.....	Gulfport.
Dec. 23.....	Fair Oaks.....	U. S. Navy.....	Corinto.....	Dec. 22.....	Orion.....	U. S. Navy.....	Norfolk.
Dec. 24.....	Cyclops.....	U. S. Navy.....	Port Limon.....	Dec. 22.....	Buford.....	U. S. Army.....	Norfolk.
Dec. 23.....	Cavina.....	Elders & Fyffes.....	Kingston.....	Dec. 23.....	Columbia.....	U. S. Navy.....	Philadelphia.

## \*DEPARTURES.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
Dec. 30.....	Cyclops.....	U. S. Navy.....	Norfolk.	Dec. 28.....	Relief.....	Leyland Line.....	Gulfport.
Jan. 1.....	Cavina.....	Elders & Fyffes.....	Port Limon.	Dec. 22.....	Orion.....	U. S. Navy.....	Norfolk.
Dec. 23.....	Cyclops.....	U. S. Navy.....	Norfolk.	Dec. 22.....	Buford.....	U. S. Army.....	Norfolk.
Jan. 1.....	Cavina.....	Elders & Fyffes.....	Port Limon.	Dec. 23.....	Columbia.....	U. S. Navy.....	Philadelphia.

## \*EXPECTED DEPARTURES.

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
Dec. 22.....	Urubamba.....	Peruvian Line.....	Callao.	Dec. 21.....	Jamaica.....	Pacific Steam Nav. Co.....	Tumaco.
Dec. 23.....	Fair Oaks.....	Slade Lumber Co.....	Aberdeen.	Dec. 24.....	Fair Oaks.....	Slade Lumber Co.....	Callao.
Dec. 24.....	Cleveland.....	Brussard Kiosterud.....	Iquique.	Dec. 24.....	Manoa.....	Pacific Steam Nav. Co.....	Guayaquil.
Dec. 24.....	Heracles.....	Brussard Kiosterud.....	Iquique.				

## DEPARTURES.

## EXPECTED ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
Dec. 27.....	Anyo Maru.....	Tayo Kisen Kaisha.....	Coronel.	Dec. 27.....	Heraules.....	Brussard Kiosterud.....	San Francisco.
Dec. 28.....	Tampico.....	Pacific Steamship Co.....	San Francisco.				
Dec. 29.....	Huasco.....	Chilean Line.....	Chilean ports.				
Dec. 31.....	Pennsylvania.....	Pacific Mail S. S. Co.....	San Francisco.				
Jan. 6.....	Acme.....	A. W. Headlee.....	San Francisco.				
Jan. 6.....	Coxier.....	C. H. Higgins.....	San Francisco.				
Jan. 6.....	O. M. Clark.....	C. H. Higgins.....	San Francisco.				
Jan. 6.....	Hattie Luckenbach.....	Luckenbach Line.....	San Francisco.				

## EXPECTED DEPARTURES.

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, December 25, 1915:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun Lake.	Miraflores Lake.	
Sun., Dec. 19.....	126.40	92.79	86.05	86.03	53.83
Mon., Dec. 20.....	126.35	92.74	86.11	86.06	53.73
Tues., Dec. 21.....	126.25	92.69	86.18	86.12	53.73
Wed., Dec. 22.....	126.25	92.69	86.20	86.19	53.75
Thurs., Dec. 23.....	126.60	92.95	86.22	86.22	53.83
Fri., Dec. 24.....	128.80	94.49	86.31	86.25	54.00
Sat., Dec. 25.....	127.95	94.32	86.40	86.34	53.96

Heights of low water to nearest foot.....

125.0 91.0

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the Advance the voyage requires seven days.†

†Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, January 10 and February 7, will not land mail at New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

†NOTE—When the vessel sailing Thursday is the Advance, mail for Louisiana, Mississippi, Arkansas,

and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Rainfall from December 1 to 25, 1915, Inclusive.

STATIONS.	Maximum one day.	Date.	Total for period.	Ins.	Ins.
Pacific Section—					
Balboa.....	1.67	2	4.45		
Balboa Heights.....	1.40	2	3.59		
Miraflores.....	2.15	2	5.03		
Pedro Miguel.....	1.10	3	3.60		
Rio Grande.....	1.80	2	6.09		
Central Section—					
Culebra.....	1.86	7	5.11		
*Camacho.....	2.05	7	4.43		
Empire.....	1.84	7	4.58		
Gatun.....	3.72	7	6.81		
*Juan Mina.....	2.09	6	7.20		
Alhajuela.....	1.94	7	5.87		
*Vigia.....	1.05	7	3.42		
Frijoles.....	1.57	2	6.52		
*Monte Lirio.....	2.20	1	10.16		
Atlantic Section—					
Gatun.....	2.74	3	6.88		
*Brazos Brook.....	2.45	3	8.51		
Colon.....	3.48	2	9.09		

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values, midnight to midnight.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.			
Vessel.	Line.	Sails.	Arrives.
Santa Marta.....	U. F. C.	Dec. 22.....	Dec. 29
Advance.....	P. R. R.	Dec. 23.....	Dec. 30
Metapan.....	U. F. C.	Dec. 25.....	Jan. 3
Almirante.....	U. F. C.	Dec. 29.....	Jan. 5
Panama.....	P. R. R.	Dec. 30.....	Jan. 5
Pastores.....	U. F. C.	Jan. 1.....	Jan. 9
Zacapa.....	U. F. C.	Jan. 5.....	Jan. 12

Alfama.....	P. R. R.	Jan. 6.....	Jan. 11
Calamares.....	U. F. C.	Jan. 8.....	Jan. 16
Carriño.....	U. F. C.	Jan. 12.....	Jan. 19
Colon.....	P. R. R.	Jan. 13.....	Jan. 18
Tenadores.....	U. F. C.	Jan. 15.....	Jan. 23
Santa Marta.....	U. F. C.	Jan. 19.....	Jan. 26
Advance.....	P. R. R.	Jan. 20.....	Jan. 27
Metapan.....	U. F. C.	Jan. 22.....	Jan. 31
Almirante.....	U. F. C.	Jan. 26.....	Feb. 2

## CRISTOBAL-COLON TO NEW YORK.

Colon.....	P. R. R.	Dec. 30.....	Jan. 5
Carriño.....	U. F. C.	Dec. 30.....	Jan. 6
Tenadores.....	U. F. C.	Jan. 3.....	Jan. 10
Advance.....	P. R. R.	Jan. 6.....	Jan. 13
Santa Marta.....	U. F. C.	Jan. 6.....	Jan. 13
Metapan.....	U. F. C.	Jan. 10.....	Jan. 18
Panama.....	P. R. R.	Jan. 13.....	Jan. 19
Almirante.....	U. F. C.	Jan. 13.....	Jan. 20
Pastores.....	U. F. C.	Jan. 17.....	Jan. 24
Alfama.....	P. R. R.	Jan. 20.....	Jan. 26
Zacapa.....	U. F. C.	Jan. 20.....	Jan. 27
Calamares.....	U. F. C.	Jan. 24.....	Jan. 31
Colon.....	U. F. C.	Jan. 27.....	Feb. 2

## NEW ORLEANS TO CRISTOBAL-COLON.

Atenas.....	U. F. C.	Dec. 25.....	Jan. 1
Parismina.....	U. F. C.	Dec. 29.....	Jan. 3
Turrialba.....	U. F. C.	Jan. 1.....	Jan. 8
Cartago.....	U. F. C.	Jan. 5.....	Jan. 10
Abangarez.....	U. F. C.	Jan. 8.....	Jan. 15
Heredia.....	U. F. C.	Jan. 12.....	Jan. 17
Atenas.....	U. F. C.	Jan. 15.....	Jan. 19
Parismina.....	U. F. C.	Jan. 19.....	Jan. 24
Turrialba.....	U. F. C.	Jan. 22.....	Jan. 29
Cartago.....	U. F. C.	Jan. 26.....	Jan. 31
Abangarez.....	U. F. C.	Jan. 29.....	Feb. 5

## CRISTOBAL-COLON TO NEW ORLEANS.

Heredia.....	U. F. C.	Jan. 2.....	Jan. 7
Atenas.....	U. F. C.	Jan. 2.....	Jan. 9
Parismina.....	U. F. C.	Jan. 9.....	Jan. 14
Turrialba.....	U. F. C.	Jan. 9.....	Jan. 16
Cartago.....	U. F. C.	Jan. 16.....	Jan. 21
Abangarez.....	U. F. C.	Jan. 16.....	Jan. 23
Parismina.....	U. F. C.	Jan. 23.....	Jan. 28
Turrialba.....	U. F. C.	Jan. 23.....	Jan. 30
Cartago.....	U. F. C.	Jan. 30.....	Feb. 3
Abangarez.....	U. F. C.	Jan. 30.....	Feb. 6

# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, JANUARY 5, 1916.

No. 20.

## The Canal Record

Official publication of The Panama Canal.  
The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, on this basis:

Subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,  
**THE CANAL RECORD,**  
Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### More Barges Ordered.

An order has been placed in the United States for early delivery of four additional dump barges, each of 600 cubic yards capacity, to be used in the dredging operations in Gaillard Cut. The need of more barges has become imperative since the new 15-yard dipper dredge *Cascadas* has been added to the dredging fleet.

### Excavation in the Cut during the Past Week.

Excavation from the bases of the slides which have caused the suspension of traffic through the Canal amounted to 211,300 cubic yards during the week ending at midnight of Monday, January 3. Other excavation in the Cut during the same period amounted to 19,384 cubic yards, making a total for the week of 230,684 cubic yards.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
<i>Cascadas</i> .....	15-yard dipper.....	68,865
<i>Gambao</i> .....	15-yard dipper.....	39,415
<i>Paraiso</i> .....	15-yard dipper.....	84,140
<i>Corozal</i> .....	Ladder.....	3,615
<i>Culebra</i> .....	Seagoing suction.....	19,384
No. 88.....	Pipeline suction.....	13,673
<i>Marmot</i> .....	Belgian ladder.....	12,975
<i>Cardenas</i> .....	5-yard dipper.....	2,290

The ladder dredge *Corozal* was out of commission six days of the week, undergoing repairs; and the *Gambao* was out of service two days for repairs. The old 5-yard dipper dredge *Cardenas*, which had been removed from the slides to make room for the newer equipment of greater capacity, was returned to work, following the absence of the large dredges, and, in the one day in which she was operated, excavated 2,290 cubic yards of material.

The average aggregate output from the Cut during the 10 weeks preceding that ending at midnight of Monday, January 3, not including rehandled spoil, was 267,681 cubic yards, the total amount of primary excavation during that time having been 2,676,808 cubic yards.

### "Newton" Has Not Passed through the Cut.

The steamship *Newton*, the last of the vessels which was held up at the Canal by the suspension of traffic by the slides, is still waiting at Pedro Miguel Lock for transit. This ship, arriving at Balboa on October 15, entered the Canal for transit on December 23, going as far as Pedro Miguel; on the same day, lighter draft vessels went past the slides, but there has not been sufficient channel for the *Newton*, which is drawing 23½ feet.

### Progress on Empire-Gambao Highway.

The construction of the last concrete bridge for the Empire-Gambao highway is in progress. The completion of this bridge will mean the completion of the subgrade work through to Gambao, and approximately 80 per cent of entire completion of the road, as some surfacing will have to be done before the road can be opened to traffic, connecting Panama and Gambao. The bridge now under construction contains two 25-foot spans and crosses the Sardanilla River, a small stream formerly tributary to the Obispo River and now emptying into the Obispo diversion. The Sardanilla has its sources in the range of hills near the Las Cascadas Plantation.

Another bridge for the road is across the diversion, and contains two 18-foot spans. A highway bridge across the Chagres River has been in service since February, 1914. It consists of a 10-foot timber roadway supported on steel brackets affixed to the supports for the Panama Railroad bridge. The width of the Empire-Gambao roadway, outside of bridges, is 16 feet.

The slides on the east bank of the Canal have broken back to the old road leading to the Empire suspension bridge from Paraiso, and portions of the road will probably be relocated nearer the line of the Panama Railroad before communication between Panama and Gambao is established. Convict labor is used on the roads, and as the force fluctuates in numbers and efficiency the date of completion of the highway can hardly be predicted.

### Transfer of the "Acajutta."

Shortly after the steamship *Acajutta*, which lay in Gatun Lake from September 20 to December 20, 1915, awaiting passage through the Canal, had completed the transit, her transfer from the Salvador Railway Company to the Pacific Steam Navigation Company was consummated. Similar transfer of the *Salvador* between the two companies had been made some time before, and the steamship *Cauca*, which came out from Great Britain last July for the Salvador Railway Company, was taken

over when new by the Pacific Steam Navigation Company, and was never in the active service of her original owners. The three vessels are to be used in coasting along the Pacific side of Central and South America, and when the Canal is reopened they will make Colon their terminal port.

### Arrival of the "Ortega" at Liverpool.

The steamship *Ortega*, of the fleet of the Pacific Steam Navigation Company, which was one of the vessels held up at the Pacific entrance to the Canal by the suspension of traffic in September, arrived at Liverpool on November 30. She sailed from Balboa for Liverpool, via the Strait of Magellan, a distance of 11,500 miles, on October 15 at 8 p. m. The *Ortega* is reported to have been the first of the Pacific Steam Navigation Company's vessels to have reached home by the long route, following the suspension of traffic through the Canal.

### Progress on Construction of New Colon Hospital.

The construction of the walls of the concrete group of buildings, connected by arcades, to house the permanent Colon Hospital, was practically completed on January 3, with the pouring of the top sections of the arcade connecting the central building with the kitchen and general service building situated directly in its rear. The roof has been laid over all of the buildings of the group, other than the arcade for which the walls have just been completed. The work of completing the soffits and plastering the structures inside and out is well under way. It is expected that the buildings will be occupied in April.

The group building is situated on the site of the old frame buildings Nos. 17 and 19, and opposite former Wards A to I, which were built over the water. These wards, lying to the west of the kitchen, have been vacated for hospital uses, though laborers employed on the construction of the new hospital are allowed to use them as quarters, and the building is to be torn down shortly. After its removal the view from the new hospital will be through palm trees to the sea, and its situation will be one of the most pleasant on the Isthmus.

Colon Hospital consists now of three wards and three private rooms. These wards and the dispensary employ the services of four physicians, not including the superintendent, and six nurses. The patients in the hospital average between 40 and 50, and the dispensary service averages 6,000 cases per month.

### The "Panama" to Arrive Thursday.

Advice has been received by cable from the New York office of the Panama Railroad Company that the steamship *Panama*, which should have sailed from New York on Thursday, December 30, was delayed, sailing on December 31. This makes the vessel due at Cristobal on January 6. The delay was attributed to "holidays, labor shortage, and weather conditions."

## TOWING LOCOMOTIVE SPEED.

Reduced from Two Miles to One Mile Per Hour by Concatenation of Motors.

In order to control vessels passing through the locks, the Isthmian Canal Commission designed a towing locomotive, or "mule," which it intended to operate on two tracks along each side of the lock chambers, these machines being propelled by alternating current motors and driven through the agency of a rack pinion quill which engages with the steel rack track, driving the locomotives at a maximum speed of two miles per hour.

The original machine was of the two-truck type, but this was later abandoned for the manufacturer's design of a single-truck towing locomotive operated in the same manner as the original machine, the towing being accomplished by steel lines which are carried from each towing locomotive on the side wall and fastened at the bow, amidships, or at the stern of the vessel, according to the location of the locomotive. The tow lines are so arranged that their position may be controlled with respect to the locomotive and may be coiled either in or out as may be required in order to center the vessel in the locks.

The locomotives are controlled by means of a system of signals transmitted by the Canal pilot on the vessel, who has complete control of all lockage operations so far as the handling of the vessel is concerned. Each towing locomotive has an operator, whose duties require him to follow implicitly the signals given by the pilot.

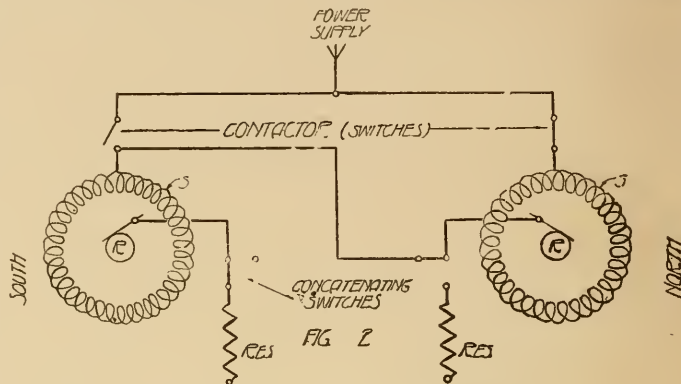
When the locomotives were first installed it was thought by some of the pilots that a speed of two miles per hour was somewhat excessive, especially in handling heavy vessels, and investigations were made to endeavor to determine some feasible method of decreasing the speed of towing, which was practically confined to a two-mile-per-hour speed. Some thought was given to changing certain of the gears of the towing locomotive, but all schemes of this nature were later abandoned when it was found feasible to concatenate the two main traction motors of each of the locomotives, allowing a speed of one mile per hour to be used when desired.

supply is fed to both the north and south main traction motors of each of the locomotives and that speed control is obtained by the means of resistance inserted in the rotor, or secondary, of each of the machines, in this way adjusting the pull of the towing locomotive to the amount required. Inasmuch as the synchronous speed of all towing locomotives is two miles per hour, it is very difficult to keep the speed of the tow below this point after the vessel has been accelerated and brought to approximately a two-mile-per-hour speed. This is due to the characteristics of the induction motors, which always tend to reach synchronous speed regardless of the

stator, of the south main traction motor, the secondary of the south motor being connected in as before in order to obtain the required adjustment of speed and torque. When the north and south motors are connected in this manner, they are connected in cascade, or concatenation, and will operate at approximately one-half the speed for which the machines were designed.

The halving of speed by concatenation of two induction motors is explained by Steinmetz, as follows:

"If of two induction motors the secondary of the first motor is connected to the primary of the second motor, the second machine



amount of resistance used in the secondary.

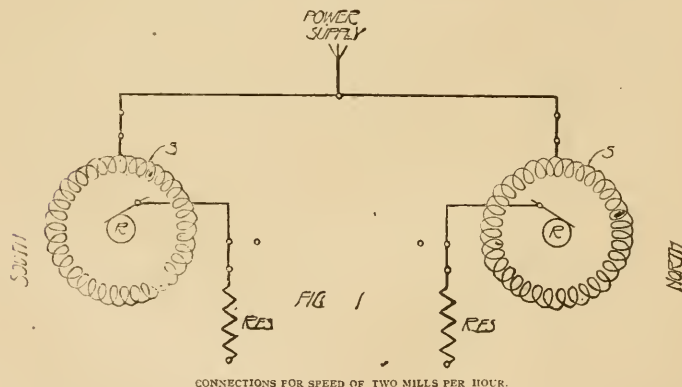
With a 10,000-ton vessel six towing locomotives can attain a two-mile-per-hour speed in a distance equal to approximately one-half the length of the vessel and after this speed has been attained, two machines can easily maintain its speed at two miles per hour for the distance required in towing.

The reconnection of the towing locomotives was accomplished by connecting the machines up approximately as shown in Figure 2; that is, a knife switch is inserted in

operates as a motor with the e-m-f and frequency impressed upon it by the secondary of the first machine, which acts as a general alternating-current transformer, converting a part of the primary impressed power into secondary electrical power for the supply of the second machine, and a part into mechanical work.

"The frequency of the secondary e-m-f of the first motor, and thus the frequency impressed upon the second motor, is the frequency of slip below complete synchronism,  $s$ . The frequency of the secondary generated e-m-f of the second motor is the difference between its impressed frequency,  $s$ , and its speed; thus, if both motors are connected together mechanically to turn at the same speed,  $1-s$ , the secondary frequency of the motor, is  $2s-1$ , hence equal to zero at  $s$  equals 0.5. That is, the second motor reaches its synchronism at half speed. At this speed its torque becomes equal to zero, the power component of the current in it, and consequently the power component of the secondary current of the first motor, and thus the torque of the first motor becomes equal to zero also, when neglecting the hysteresis power current of the second motor. That is, a system of concatenated motors with short-circuited secondary of the second motor approaches half synchronism, in the same manner as the ordinary induction motor approaches synchronism. With increasing load, its slip below half synchronism increases.

"More generally, any pair of induction motors connected in concatenation divide the speed so that the sum of their two respective speeds approaches synchronism at no-load; or, still more generally, any number of concatenated motors run at such speeds that the sum of



Under ordinary operating conditions the connections of the towing locomotives are to be as indicated in Figure 1, this diagram being made out in single line form for the sake of simplicity. It will be noted that the power

the main cable connections in such a manner that when the one-mile-per-hour speed is desired this switch may be thrown, allowing the rotor, or secondary, current of the north motor to pass directly to the primary, or



the speeds approaches synchronism at no-load.

"With mechanical connection between the two motors, concatenation thus offers a means to operate a pair of induction motors at full efficiency at half speed in tandem, as well as at full speed in parallel, and thus gives the same advantage as the series-parallel control of the continuous-current motor.

"Since, with increasing speed, the frequency impressed upon the second motor decreases proportionally to the decrease of voltage, when neglecting internal losses in the first motor, the magnetic density of the second motor remains practically constant, and thus its torque the same as when operated at full voltage and full frequency under the same conditions.

"At half synchronism the torque of the concatenated couple becomes zero, and above half-synchronism the second motor runs beyond its impressed frequency; that is, it becomes a generator. In this case, due to the reversal of current in the secondary of the first motor, its torque becomes negative also, that is, the concatenated couple becomes an induction generator above half-synchronism. At about two-thirds synchronism, with low-resistance armature, the torque of the couple becomes zero again, and once more positive between about two-thirds synchronism and full synchronism, and negative once more beyond full synchronism. With high resistance in the secondary of the second motor, the second range of positive torque, below full synchronism, disappears, more or less."

A slightly better idea can be obtained of the reconnection of the towing locomotives by referring to figure No. 3, which indicates the

principal connections of the locomotive when operated at either a two-mile or one-mile-per-hour speed. Reference to this diagram will show that the power supply originates in transformer rooms, which are located along the lock walls, these transformer rooms feeding two conductor rails ("third rails") which are located immediately adjacent to the tow and return tracks and supported by porcelain insulators in what are called the conductor slots. Two contact shoes or "plows" are supported by the towing locomotive and run along in the conductor slot, collecting the necessary current for the operation of the towing locomotives.

The current leaves the transformer rooms in delta connection, "B" phase being grounded and connected to the rails upon which the towing locomotives run. The two other phases are carried to the conductor slot, where the current eventually reaches the towing locomotive at a pressure of approximately 230 volts, and after passing through the usual protective devices of fuses and main line switches, the current reaches the main buses or supply leads of the motors.

In order to control this current the operator manipulates a main traction controller in the cab. Only one controller handle is supplied, this handle being attached to the controller in the cab in which the operator is located and manipulated in either forward or reverse direction. The controller is equipped with various operating points which are connected to electrically operated switches which are called "contactors," and which are supported by slate panels in each cab of the locomotive. These contactors are connected in multiple with the controllers in each of the cabs so that

whenever a contactor in the north cab receives its operating current through the manipulation of the controller, a similar contactor in the south cab is also operated, and in this manner both the north and south main traction motors are operated in unison. Upon the diagram, Figure 3, the forward contactor in the north cab has been indicated as "H", that in the south cab as "I". The contactors are two-pole devices; that is, they carry two phases (the third one being grounded). There are six contactors located in each of the cabs, although their connections have been omitted from the diagram for the sake of simplicity.

One main line contactor in each cab is used for the "forward" operation of the locomotive, another for the "reverse" operation, while the four remaining contactors in each cab are used for cutting out resistances in the secondaries of the main traction motors, giving a resultant variation in the driving torque of the towing locomotives and also giving a better control of the amount of current drawn by the machine when operating under a heavy load. When the locomotives were first received upon the Isthmus, small control wires were carried from the main traction controllers to each of the contactors and connected to small operating coils which were then connected to ground or "B" phase. Whenever the controller was moved to a certain position it would supply current to a definite contactor coil and the coil, being energized, would close the circuit and give the required connections for the operation of the machine.

In order to obtain the connections which were required, the engineers disconnected the ground or "B" phase side of each of the for-

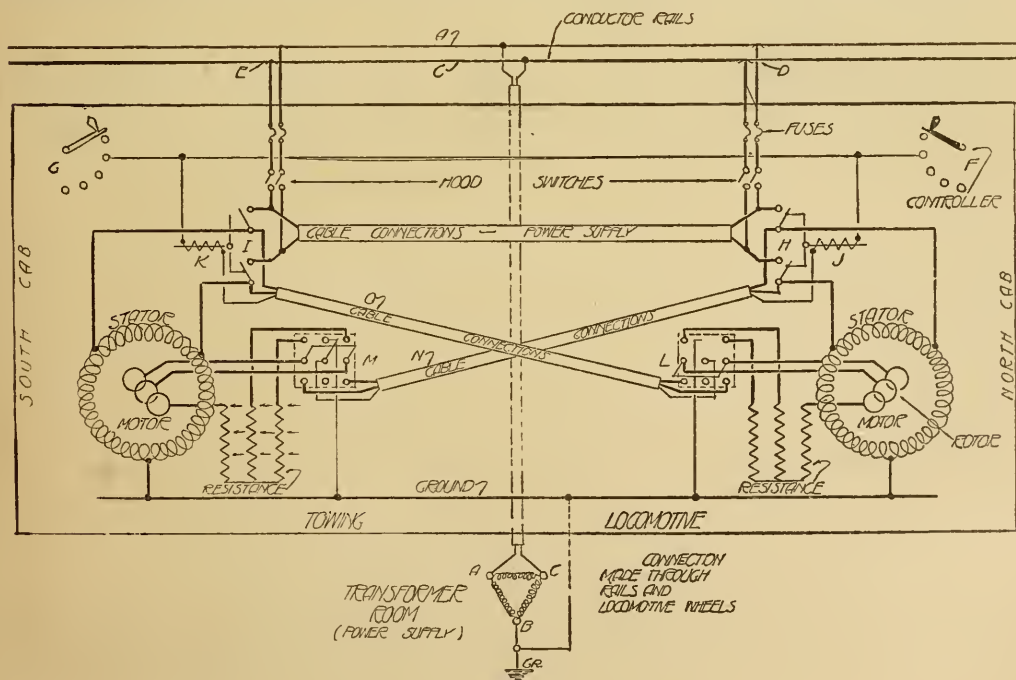


FIGURE NO. 3—WIRING DIAGRAM OF ELECTRIC TOWING LOCOMOTIVE.

ward and reverse main line contactor coils, and carried the leads thus disconnected to a three-pole knife switch located in each of the locomotive cabs, the connection being carried to the middle stud of each of the respective switches at the opposite ends of the locomotive. The upper middle stud of each of the respective knife switches is connected to the ground or "B" phase of the locomotive, while the lower stud connections are omitted entirely. Therefore, if both of the knife switches in both the north and south cabs are thrown up, the connections of the towing locomotive, so far as the control of the contactors is concerned, would remain as originally designed for the two-mile-per-hour speed. If the operator were located in the north cab and threw the knife switch down he would disconnect the forward and reverse contactors of the south cab of the locomotive, the remaining contactors in that cab continuing in their original form of connection.

The middle outside studs of each of the knife switches are connected to the rotors of the north and south main traction motors, respectively. The lower outside studs of the knife switches of each cab are connected to the stator side of the forward and reverse contactors at the opposite end of the towing locomotive. The upper outside studs of each concatenating switch are connected to the grid resistances at both the north and south ends of the locomotive, respectively.

disconnected from the forward and reverse contactors of the south cab, these contactors will not operate when the controller handle is turned. The ground connections of the forward and reverse contactor coils of the north cab remain in connection, and therefore, when the controller handle is turned, current is supplied to the main traction motor at the north end only. The current passes through the stator, or primary, of the north main traction motor and is induced in the secondary of this machine, the induced current flowing through the three-pole knife switch and into the stator of the south main traction motor, thus supplying current for the south machine, the secondary of the south machine being connected to the resistance and operated as usual.

Experiments were made with the towing locomotives connected in both cascade and in multiple to determine whether there would be excessive heating of the machines if the motors were operated in concatenation. It was found that the heating was not at all unusual or excessive, owing to the fact that when the towing locomotive was driven northward the north motor was used as a primary and the south motor as a secondary, while in operating the machine in the southward direction the motors were reversed; that is, the operator being in the south cab would use the south motor as the primary and the north motor as the secondary. So far as

N.Y.; Williams, Dimond & Company, general agents for the Pacific coast, 310 Sansome Street, San Francisco. Luckenbach Steamship Company, 42 Whitehall Street, New York, N. Y.; Merchants' Exchange, San Francisco.

W. R. Grace & Company, Hanover Square, New York, N. Y.; 332 Pine Street, San Francisco. Pacific Coast Steamship Company, 653 Market Street, San Francisco.

Sudden & Christensen, San Francisco. Robert Dollar Company, 230 California Street, San Francisco.

Olson & Mahony, Fire Building, San Francisco. Lindeman Steamship Company, San Francisco. New York & South America Line, 11 Broadway, New York, N. Y.

John S. Emery & Company, 114 State Street, Boston. Crowell & Turlow, 33 Broad Street, Boston, Mass. United States Steel Products Company, 11 Broadway, New York, N. Y.

Swayne & Hoyt, 430 Sansome Street, San Francisco. American Asiatic Steamship Company, 10-12 Broadway, New York, N. Y.

Barber & Company, Whitehall Building, 17 Battery Place, New York, N. Y. Bennett & Boyeson, Shipping Agents, New York City.

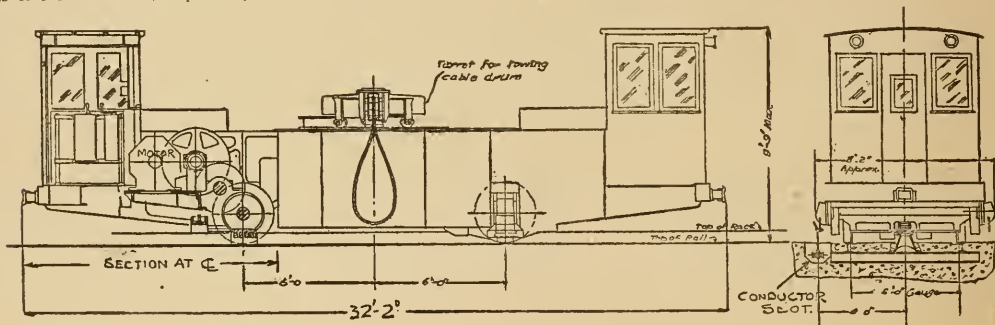
Blue Star Line, 10 Broadway, New York, N. Y. Bowring & Company, 17 State Street, New York, N. Y.

Brown Brothers & Company, Shipping Agents, New York, N. Y. A. H. Bull Steamship Company, New York, N. Y.

E. C. Evans & Sons, 203 California Street, San Francisco, Cal. Joseph R. Fox & Company, Baltimore, Md.

Funch, Edye & Company, 8-10 Bridge Street, New York, N. Y. Furness, Withy & Company, Ltd., Newport News, Va.

Paul F. Gerhard & Company, 10 Bridge Street, New York, N. Y.



SIDE AND END VIEWS OF TOWING LOCOMOTIVE.

With the connections arranged in the manner outlined above, and with both concatenating or three-pole knife switches thrown upward, the resulting connections would give a two-mile-per-hour speed for the towing locomotive as it was originally designed. If the operator were in the north cab and desired to operate the locomotive at a one-mile-per-hour speed it would be necessary for him to throw his controller handle to the "off" position where no power is supplied to any portion of the driving mechanism. Then he would throw the knife switch down, in this way disconnecting the forward and reverse contactors of the south cab and connecting the rotor of the north main traction motor to the stator of the south main traction motor, the rotor of the south main traction motor remaining in connection with the grid resistances which are required for the control of the locomotive when operating at either a two-mile or a one-mile speed.

After throwing the knife switch down the controller handle is operated as usual, but inasmuch as the ground connection has been

tractive effort of the towing locomotives is concerned, it has been found that the motors operated entirely satisfactorily on all low inclines and in towing, but that in going up and down the steep inclines it is necessary to use the two-mile-per-hour speed in order to have the machine operate satisfactorily. With the towing locomotive connected in cascade it is possible to get approximately 30,000 pounds tractive effort, which is more than sufficient to cause the cable drum to slip, as it is set to slip with a 25,000-pound pull on the tow line.

#### Addresses of Canal Lines.

Inquiry has been made of THE CANAL RECORD concerning the addresses in the United States of steamship lines which were using the Canal, prior to the suspension of traffic. The following are, as accurately as means are at hand to determine them, the addresses of the principal offices in the United States of companies which have been the more prominent and regular users of the Canal: American-Hawaiian Steamship Company, Dearborn & Lapham, general agents, 8 Bridge Street, New York,

George Hellieson, 10 Bridge Street, New York, N. Y. Houlder, Weir & Boyd, New York, N. Y. John Layton & Company, Shipping Agents, New York, N. Y.

Mallory Steamship Company, New York, N. Y. New York & Porto Rico Steamship Company, 11 Broadway, New York, N. Y.

Norton, Lilly & Company, Produce Exchange Building, New York, N. Y. Pacific-Alaska Navigation Company, New York, N. Y.

C. B. Richard & Company, 31 Broadway, New York, N. Y. C. P. Sumner & Company, 18 Broadway, New York, N. Y.

Trinidad Shipping & Trading Company, New York, N. Y. Wm. H. Twaddell & Company, 68 Broad Street, New York, N. Y.

U. S. Shipping Company, New York, N. Y. D. T. Warden, Shipping Agents, New York, N. Y. Wessel, Duval & Company, 25-33 Broad Street, New York, N. Y.

J. F. Whitney & Company, Shipping Agents, New York, N. Y. J. H. Winchester & Company, 354 Produce Exchange, New York, N. Y.

E. J. Dodge Company, 16 California Street, San Francisco, Cal. International Mercantile Marine Company, 9 Broadway, New York, N. Y.

Nehalem Steamship Company, Astoria, Oreg.



## PRESIDENT'S PROCLAMATION.

### Appointing a Day for Making Contributions for Aid of Stricken Polish People.

The President issued, under date of December 18, a proclamation designating January 1 as a day for making contributions to assist the people of Poland. Copy of the proclamation was received on the Isthmus too late for publication prior to January 1, but contributions will be equally acceptable if made now. Persons on the Isthmus may send them to the national headquarters of the American Red Cross, as indicated in the proclamation, or to the treasurer of the Canal Zone chapter, Mr. John H. McLean, Balboa Heights. The proclamation follows:

*By the President of the United States of America. A Proclamation:*

Whereas, I have received from the Senate of the United States a Resolution, passed December 17, 1915, reading as follows:

"Whereas, the attention of the people of the United States has been from time to time directed to the appalling situation in Poland, where practically the entire population to-day is homeless, and where men, women, and children are perishing by the thousands for lack of shelter, clothing, and food,

And whereas, the people of the United States have demonstrated their sympathy for the suffering people on all sides in the great European war by their splendid and successful charitable work in Belgium, Serbia, and other places; and feeling that the American people would quickly respond to an appeal for help in Poland, once the tragedy of the situation there is brought home to them,

Be it Resolved, That appreciating the suffering of that stricken people, it is suggested that the President of the United States set aside a day in the forthcoming holiday season upon which day a direct appeal to the sympathy of all American citizens shall be made, and an opportunity shall be given for all to contribute to a much needed holiday fund for relief in Poland."

And whereas, I feel confident that the people of the United States, during this holiday season, will be moved to aid a people stricken by war, famine and disease;

Now, therefore, I, Woodrow Wilson, President of the United States, in compliance with the suggestion of the Senate thereof, do appoint and proclaim January 1, 1916, as a day upon which the people of the United States may make such contributions as they feel disposed for the aid of the stricken Polish people.

Contributions may be addressed to the American Red Cross, Washington, D. C., which will care for their proper distribution.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington this eighteenth day of December, in the year of our Lord one thousand nine hundred and fifteen, and of the independence of the United States the one hundred and fortieth.

[SEAL]

WOODROW WILSON.

By the President:

ROBERT LANSING,  
Secretary of State.  
[No. 1319.]

### Government Exhibits to Be Transferred to Exposition at San Diego.

Following the close of the Panama-Pacific International Exposition at San Francisco last month, the exhibit of the Panama Canal may be transferred to the Panama-California International Exposition at San Diego, in accordance with this Public Resolution, No. 1, of the Sixty-fourth Congress:

*Joint Resolution To transfer the Government exhibit from the Panama-Pacific International Exposition to the Panama-California Exposition, and for other purposes.*

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That all laws and parts of laws relating to foreign exhibits at the Panama-Pacific International Exposition, including importations of the same, and of material necessary for buildings, or otherwise, for their proper exhibit are made applicable to the Panama-California International Exposition now in operation at San Diego, California, during the remainder of the year nineteen hundred and sixteen or during the continuance of the latter exposition during said period.

SEC. 2. That the Government exhibit at the Panama-Pacific International Exposition, or such portion thereof as may be determined by the President is advisable, is transferred to the Panama-California International Exposition during its continuance at San Diego, California, and until not later than December thirty-first, nineteen hundred and sixteen. And any unexpended balance of the appropriation of \$500,000 made in the sundry civil appropriation Act for the fiscal year nineteen hundred and fourteen is reappropriated and made available for expenses attending the transfer and maintenance of said Government exhibit during said period ending not later than the close of the year nineteen hundred and sixteen; and all laws or parts of laws relating

to said Government exhibit and constituting a Government exhibit board and authorizing the detail of civilians and Army and Navy officers of the United States in connection with said Government exhibit at the Panama-Pacific International Exposition are continued and made applicable so far as the same may be applicable to the Panama-California International Exposition at San Diego, California, during its said continuance.

SEC. 3. That in the passage of this Act the United States does not assume any liability of any kind whatever, and does not become responsible in any manner for any bond, debt, contract, expenditure, expense, or liability of the said Panama-California International Exposition, its officers, agents, servants, or employees, or incident to or growing out of the said exposition beyond the reappropriation of the unexpended balance of the appropriation heretofore made in connection with the said Government exhibit.

Approved, December 17, 1915.

### Taboga Launch Service Rates.

Effective Tuesday, January 4, 1916, the following will be the fares for the trip, one way, between Balboa and the Hotel Aspinwall at Taboga, for employees of The Panama Canal and the Panama Railroad and members of employees' families:

For adults, 30 cents; for children (six to 12 years of age), 20 cents. Children under six years of age will be carried free.

The fares for nonemployees will be double those for employees; that is, 60 cents, one way, for adults and 40 cents for children.

Under ordinary conditions the launch goes alongside the landing pier at Taboga. Whenever this is not practicable on account of the roughness of the water or an extreme low tide, the management of the Hotel Aspinwall will furnish panga service, for which no extra charge will be made to the passengers on the launch.

### Christmas Parcels at Panama Passenger Station of Panama Railroad.

The station agent of the Panama Railroad at Panama advises that about 20 boxes of Christmas presents, arriving on the steamship *Colon* on December 22 and consigned to Canal employees at Panama, were shipped across the Isthmus by passenger service and delivered at the passenger station in Panama in order that they might be received by the consignees before Christmas, but about six have never been called for and are held at the passenger station for disposal. As freight parcels for Panama, Ancon, Balboa, and Balboa Heights are all delivered at Panama, advices of arrival can not be delivered to the consignees with surety through the mail, if the post-office address is not indicated separately on the parcel. The agent suggests that it would be well for employees located in any of the four places named to make this clear to persons or firms in the United States who make shipments to them by freight.

The steamship *Finland*, formerly engaged with the *Kronland* in the service of the Panama Pacific Line, operating between New York and San Francisco, with a sailing every three weeks in each direction, is in use in a service between New York and Liverpool during the time that the Canal is closed to traffic.

### Deceased Employees.

Name	Check No.	Natite of	Isthmian Residence	Employed by	Date of death
Cacedonne (Cassidy), Dennis.....	49186	Guadeloupe.....	Panama.....	Term. Const.....	Dec. 24, 1915.
Johnson, J.....	52718	Jamaica.....	Panama.....	Capt. of Port.....	Dec. 24, 1915.
Minto, Theodore.....	89981	Jamaica.....	Colon.....	P. R. R.....	Dec. 27, 1915.
Williams, Ebenezer.....	64694	Jamaica.....	Panama.....	Building Div.....	Dec. 26, 1915.
Turner, Arthur.....	100114	Jamaica.....	Panama.....	Ancon com'y.....	Sept. 14, 1915.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other monies due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## OFFICIAL CIRCULARS.

## Acting Engineer of Maintenance.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 30, 1915.

To all concerned—Effective December 30, 1915, and during the absence of Lieut. Col. Chester Harding on leave, Lieut. Col. Jay J. Morrow will be Acting Engineer of Maintenance.

GEO. W. GOETHALS,  
Governor.

## Acting Engineer of Docks.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT.

BALBOA HEIGHTS, C. Z., December 27, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

Effective December 29, 1915, and during the absence on leave of Mr. T. B. Mönchne, Engineer of Docks, Mr. Starr Truscott is designated as Acting Engineer of Docks.

C. H. MOTSETT,  
Superintendent.

## Approved:

GEO. W. GOETHALS,  
President.

## Colon-Gatun Labor Train to Be Discontinued.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT.

BALBOA HEIGHTS, C. Z., December 31, 1915.

## CIRCULAR NO. 256:

To all concerned—Effective Sunday, January 16, 1916, we will discontinue the operation of labor train now running between Colon and Gatun daily. Please inform all employees of your department who use this train that on and after that date they must make other arrangements.

C. H. MOTSETT,  
Superintendent.

## Bound Copies of Annual Report.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., December 29, 1915.

## HEADS OF DEPARTMENTS AND DIVISIONS:

There is attached heret, for desk use, one cloth-bound copy of the text of the Annual Report for the fiscal year ended June 30, 1915, without illustrations. The supply of this edition is limited, and no further copies are available for distribution.

A few advance copies of the paper-bound edition of the report, with illustrations and portfolios, have been received, and are being distributed, for official use, to a limited number of heads of departments and divisions and a further distribution will be made as soon as the regular supply is received.

C. A. MCILVAINE,  
Executive Secretary.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, January 12, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeur's licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same. The demonstration test for applicants for chauffeur's licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, January 14, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

GEO. J. VANDERSLICE, Recorder.

## Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective January 6 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions will be effective January 6, 1916.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.	
Beef suet, special, per lb.	\$.03 1/2
Beef suet, native, per lb.	.03 1/2
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.07
Soup bone, special, per lb.	.02 1/2
Soup bone, native, per lb.	.02 1/2
Stew beef, special, per lb.	.11
Stew beef, native, per lb.	.08
Plate beef, special, per lb.	.08
Plate beef, native, per lb.	.08
Chuck roast (3 lbs. up), special, per lb.	.12
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (3 1/2 lbs. up), special, per lb.	.16
Rib roast, 2d cut (3 1/2 lbs. up), native, per lb.	.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Pot roast, special, per lb.	.12
Pot roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse roast, choice, per lb.	.22
Porterhouse roast, special, per lb.	.22
Porterhouse roast, native, per lb.	.16
Chuck steak, special, per lb.	.13
Chuck steak, native, per lb.	.13
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.15
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.19 1/2
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.12
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	.34
Porterhouse steak (1 1/2 lbs. up), special, per lb.	.22
Porterhouse steak (1 1/2 lbs. up), native, per lb.	.17
Porterhouse steak, short, choice, per lb.	.28
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25
Tenderloin steak, western, special, per lb.	.27

## FRESH MEATS.

Lamb, chops, per lb.	.29
Lamb, chops, short cut, per lb.	.24
Lamb, legs, 3 to 8 lbs., per lb.	.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.15
Lamb, stewing, per lb.	.19 1/2
Mutton chops, short cut, per lb.	.23
Mutton chops, shoulder, per lb.	.17
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.09
Pork, hams, fresh (see footnote), per lb.	\$.25
Pork, legs, chops, or roasts, per lb.	.19 1/2
Pork, shoulders, fresh (see footnote), per lb.	\$.20
Veal, chops, per lb.	.40
Veal, chops, shoulder, per lb.	.27
Veal, chops, per lb.	.45
Veal, loin for roasting, per lb.	.40
Veal, shoulder for roasting not under 4 lbs., per lb.	.16
Veal, stewing, per lb.	.16

## MISCELLANEOUS.

Brains, calves, per lb.	.07
Calves heads, ca.	.86 1/2
Kidneys, beef, per lb.	.09
Livers, beef, per lb.	.08
Livers, calves, per lb.	.29 1/2
Pates de foie gras, jar.	.69
Pigs feet, fresh, per lb.	.12
Pigs head, fresh, whole, ca.	.83
Pigs heads, fresh, 1/2 head, half.	.42
Sausage, Bologna, per lb.	.19
Sausage, frankfurter, per lb.	.19

Sausage, liverwurst, per lb.	Price, .19
Sausage, pork, per lb.	.23
Sausage, pork, homemade, per lb.	.24
Sausage, Salami, per lb.	.38
Spare ribs, pork, per lb.	.16
Steak, hamburger, pkg.	.17
Steak, hamburger, 20-pound container, per lb.	.14
Sweetbread, beef, per lb.	.21 1/2
Stuffed ox, per lb.	.09
Tongue, beef, native, whole, per lb.	.20
Yeast, per lb.	.31
Yeast, cake.	.02

## CURED AND PICKLED MEATS

Bacon, breakfast, whole piece, per lb.	.30 1/2
Bacon, breakfast, sliced, per lb.	.31 1/2
Bacon, sliced, jar.	.30
Bacon, sliced, tin.	.28
Bacon, squares, whole square, per lb.	.19
Bacon, strip, whole	.20
Beef, corned—No. 1, per lb.	.15
Beef, corned—No. 2, per lb.	.12
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.21 1/2
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	.17
1. Ham, sugar cured (whole) per lb.	.24
2. Ham, sugar cured (half) per lb.	.22
2. Ham, sugar cured (sliced) per lb.	.27
1. Ham, sugar cured, boiled (whole) per lb.	.33 1/2
2. Ham, sugar cured, boiled (half) per lb.	.36 1/2
3. Ham, sugar cured, boiled (sliced) per lb.	.41
Pigs feet, pickled, per lb.	.08
Pork, bellies, per lb.	.20
Pork, clear, per lb.	.11
Pork, standard mess, per lb.	.11
Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs', per lb.	.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	.31
Broilers, milk fed, per lb.	.34
Capon, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.27
Chickens, fancy roasting, milk fed, per lb.	.32
Ducklings, per lb.	.26
Geese, light, per lb.	.22 1/2
Fowls, western, dry picked, per lb.	.23 1/2
Geese, per lb.	.18
Grouse, ca.	.60
Quails, ca.	.45
Turkeys, per lb.	.22

## DAIRY PRODUCTS.

Butter, creamery, special, per lb.	.51 1/2
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.50
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, per lb.	.39
Cheese, Edam, tin.	.1
Cheese, gouda, per lb.	.32
Cheese, parmesan, per lb.	.39
Cheese, Philadelphia cream, cake.	.09
Cheese, Roquefort, per lb.	.56
Cheese, snappy, cake.	.09
Cheese, Swiss, per lb.	.43
Cheese, young America, per lb.	.44
Cream, 30 per cent, 1 pt.	.17 1/2
Cream, 30 per cent, pt.	.29 1/2
Cream, 30 per cent, qt.	.52 1/2
Chops, fresh, per doz.	.44
Eggs, fresh, 1/2 doz. only.	.22
For-mil-lac, bottle.	.25 1/2
Ice cream, (see footnote) qt.	.25 1/2
Ice cream, (see footnote) 1/2 gal.	.50
Milk, Sheffield farms, qt.	.15 1/2
Oleomargarine, per lb. ctn.	.29

## FISH.

Bluefish, fresh, per lb.	.19
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.16
Halibut, fresh, per lb.	.09
Oysters, fresh, per qt.	.45 1/2
Salmon, fresh, per lb.	.11 1/2
Whitefish, smoked, per lb.	.20

## VEGETABLES.

Beans, shelled, fresh, per lb.	.08
Beans, string, per lb.	.12
Beets, per lb.	.02 1/2
Brussels sprouts, per qt.	.19 1/2
Cauliflower, per lb.	.01 1/2
Carrots, per lb.	.02
Cauliflower, per lb.	.19
Celery, per head.	.08
Chico, each.	.02
Corn, green, per doz.	.15
Cucumbers, per lb.	.10
Egg plant, per lb.	.09
Peas, green, per lb.	.14 1/2
Onions, per lb.	.03 1/2
Parsnips, per lb.	.02 1/2
Peppers, green, per lb.	.09 1/2
Peas, green, per doz.	.12
Potatoes, white, per lb.	.02 1/2
Squash, per lb.	.03
Tomatoes, per lb.	.09
Turps, per lb.	.02
Yams, yuca, per lb.	.03

## FRUITS, DRIED.

Apples, evaporated, per lb.	.12
Apples, evaporated, per lb.	.16
Currants, cleaned, pkg.	.15 1/2
Pigs, 5-oz. pkg.	.38
Pigs, dried, 1-lb. pkg.	.14
Peaches, evaporated, per lb.	.08
Pears, evaporated, per lb.	.18
Peach, citron, per lb.	.22
Pect, lemon, per lb.	.16

Peel, orange, per lb.	.16
Prunes, stewing, per lb.	.08†
Raisins, seeded, pkg.	.11
Raisins, table cluster, per lb.	.15†

## FRUITS, FRESH.

Apples, fresh, per lb.	.04
Apples, fresh, select, per lb.	.06
Bananas, 8 hands and over, per bunch.	.40
Bananas, 6 and 7 hands, per bunch.	.28
Bananas, ea.	.004
Cranberries, per lb.	.11
Grapes, Malaga and Tokay, per lb.	.17
Grapefruit, select, per lb.	.07
Grapefruit, tropical, ea.	.034
Lemons, per doz.	.16
Oranges, select, ea.	.04†
Oranges, tropical, doz.	.12

\* Indicates advance from preceding list.

\*\*Indicates five cents allowed for return of bottle.

† Indicates reaction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham of 1/2 shoulder or fresh pork will be sold.

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, January 6, 1916:

## FISH.

Corbina, per lb.	.11
Mackerel, per lb.	.11
Pan fish, per lb.	.11
Red snapper, per lb.	.07
Turtle (wt. 100 to 200 lbs.) per lb.	.07

## FRUITS.

Coconuts, dry, ea.	.05
Coconuts, water, ea.	.06
Papaya, per lb.	.024
Pineapples, ea.	.15
Sugar cane, ea.	.03
Limes, per 100.	.60
Plantain, ea.	.01

## VEGETABLES.

Beans, string, per lb.	.12
Celery, soup, per bunch.	.04
Chayotes, ea.	.02
Corn, green, doz.	.15
Cucumbers, per lb.	.10
Egg plant, special, ea.	.04
Ginger, per lb.	.05
Lettuce, per lb.	.14
Mint, per bunch.	.04
Okra, ea.	.004
Onions, green, per bunch.	.04
Parley, per bunch.	.04
Peppers, hot, per doz.	.05
Peppers, sweet, each.	.01
Radishes, per bunch.	.04
Spinach, per bunch.	.02
Roses (Hospital Farm), per doz.	.50

## Commissary Hours.

The open hours of the various commissaries are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## Wholesale Prices of Fresh Meats.

The following is the wholesale price list No. 207, effective November 11, 1915, and in force until further notice. This list will govern, whether meat is sold from commissaries or from cold storage. The following prices will be increased by 10 per cent in cases of sales to commercial ships and foreign naval vessels, and by 20 per cent in cases of sales to yachts:

1. Beef hinds, No. 1.	per lb.	\$0.194
2. Beef hinds, No. 2.	per lb.	.17
3. Beef hinds, native.	per lb.	.094
4. Beef fores, No. 2.	per lb.	.12
5. Beef fores, native.	per lb.	.084
6. Beef, whole round or leg, No. 1.	per lb.	.144
7. Beef, whole round or leg, No. 2.	per lb.	.11
8. Beef, whole round or leg, native.	per lb.	.07
9. Beef ribs, No. 1.	per lb.	.24
10. Beef ribs, No. 2.	per lb.	.16
11. Beef ribs, native.	per lb.	.10
12. Beef, short loins, No. 1.	per lb.	.25
13. Beef, short loins, No. 2.	per lb.	.20*
14. Beef, short loins, native.	per lb.	.15

15. Beef, rumps, No. 1.	per lb.	.201
16. Beef, rumps, No. 2.	per lb.	.17
17. Beef, rumps, native.	per lb.	.12
18. Lamb carcasses.	per lb.	.18
19. Mutton carcasses.	per lb.	.14
20. Pig carcasses.	per lb.	.14†
21. Pork, entire loins.	per lb.	.06†
22. Veal carcasses.	per lb.	.23*
23. Veal leg.	per lb.	.31*

\* Indicates increase from last list.

† Indicates decrease from last list.

Above prices do not include cost of special trimming required by United States Army or United States Navy.

The prices quoted in current retail cold storage list will govern for all other items, not included in above.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective December 27:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Laces, shoe, pr.	\$0.05	\$0.03
Purses, pigskin, ea.	.20	.22
Slippers, men's, pr.	1.1	1.85
Slippers, men's, pr.	1.65	1.85
Brush sets, Shinola, set	.29	.26
Leggins, pr.	3.65	4.05
Polish, Blanco, tin.	.12	.07
Buckles, pr.	.25	.18
Knives, cook, ea.	.57	.44
Mattresses, ea.	3.30	4.00
Oilers, machine, ea.	.05	.03
Pots, floor, ea.	.06	.03
Pots, azalea, ea.	.60	.41
Racks, towel, ea.	.30	.42
Racks, towel, ea.	.70	.76
Rugs, Crex, 27' x 54', ea.	.85	.75
Rugs, Crex, 30' x 60', ea.	.85	.10
Rugs, Crex, 36' x 72', ea.	1.15	1.30

## Additions to Stock.

Balboa Havana cigars:		\$0.09
Reina Victoria, ea.		.07
Conchas Bouquet, ea.		.07
Reinitas, ea.		.07
Duquesas, 10.		.08
Sandres Imperiales, ea.		.09
Bruvas Extra, ea.		.09
Coffee, roasted, Tivoli, unground, lb.		.25
Sausage, frankfurter, 4 in tin, tin.		.20
P. C. carbonated beverages:		
Limki, bot.		.04
Root beer, bot.		.04
Ginger ale, bot.		.04
Strawberry soda, bot.		.04
Cream soda, bot.		.04
Lemon soda, bot.		.04
Champagne cider, bot.		.04
Club soda, bot.		.10
Bowls, slop, blue Watteau, ea.		.10
Chains, key, with ring, No. 20, ea.		.06
Chains, key, with ring, No. 22, ea.		.04
Cups, egg, blue Watteau, ea.		.03
Cups and saucers, blue Watteau, ea.		.10
Dishes, fruit stand, blue Watteau, ea.		1.40
Dishes, oatmeal, blue Watteau, ea.		.08
Dishes, oil, blue Watteau, ea.		.09
Dishes, sauce, conquest, ea.		.03
Griddles, oblong, ea.		.40
Griddles, round, ea.		.50
Jugs, cream, 36s, blue Watteau, ea.		.13
Knives, table, Windsor, ea.		.25
Knives, butter, Windsor, ea.		.34
Plates, breakfast, blue Watteau, 8", ea.		.10
Plates, bread and butter, blue Watteau, 6", ea.		.08
Platters, meat, conquest, 10", ea.		.09
Platters, meat, conquest, 14", ea.		.22
Pots, tea, blue Watteau, ea.		.60
Pots, tea, blue Watteau, ea.		.52
Trays, sandwich, blue Watteau, ea.		.90

## Supplies for Vessels.

All standard lubricals, light and heavy hardware, cordage, and miscellaneous ship chandlery supplies are sold from the storehouses at Cristobal and Balboa.

Ice may be obtained in any reasonable quantity. The price is 33 cents per 100 pounds at either Cristobal or Balboa.

The Government hospital service is fully equipped for the treatment of medical and surgical cases. The charge for consultation at the dispensaries is \$3. for hospital treatment for seamen in ward the charge is \$1.50 per day.

Subsistence supplies, including a large stock of fresh meats, vegetables, canned groceries, fruits, bakery products, etc., are available for quick delivery at either terminal. Prices are generally lower than the retail prices in the United States, and compare favorably with prices in any port on the world.

Laundry is handled quickly, and no advance notice is required. The following are representative charges for ship's laundry: Trousers and jackets, five cents each; aprons, caps, sheets, tablecloths, napkins, towels, one cent each.

Application for supplies, or for services, should be made to the Captain of the Port, Cristobal or Balboa.

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next six weeks are given in this table:

## JANUARY.

DATE.	Time and height of high and low water.			
Wed., Jan. 5.	3:16	9:47	15:54	22:08
	15:9	-0.9	15.8	0.1
Thurs., Jan. 6.	4:11	10:36	16:48	22:57
	16.3	-1.4	16.4	-0.3
Fri., Jan. 7.	5:05	11:22	17:41	23:46
	16.4	-1.5	16.6	-0.4
Sat., Jan. 8.	5:58	12:09	18:30	24:36
	0.3	15.0	0.4	1.6
Sun., Jan. 9.	0:35	6:48	12:56	19:17
	-0.1	15.4	-0.6	16.6
Mon., Jan. 10.	1:27	7:35	13:45	20:03
	0.2	14.1	0.6	13.7
Tues., Jan. 11.	2:15	8:24	14:36	20:49
	1.2	14.1	1.5	14.7
Wed., Jan. 12.	3:08	9:14	15:29	21:39
	2.1	13.0	2.6	13.7
Thurs., Jan. 13.	4:04	10:11	16:24	22:34
	2.8	12.2	3.6	12.9
Fri., Jan. 14.	5:00	11:15	17:23	23:37
	3.4	11.6	4.2	12.4
Sat., Jan. 15.	6:01	12:22	18:24	24:36
	3.7	11.4	4.5	11.7
Sun., Jan. 16.	0:37	7:01	13:23	19:24
	12.2	11.2	13.0	14.4
Mon., Jan. 17.	1:32	7:57	14:15	20:19
	12.4	3.3	11.9	4.0
Tues., Jan. 18.	2:20	8:47	15:00	21:07
	12.9	11.0	12.4	11.7
Wed., Jan. 19.	3:05	9:30	15:41	21:49
	13.1	2.1	12.9	2.9
Thurs., Jan. 20.	3:45	10:09	16:22	22:27
	13.4	1.5	13.4	1.8
Fri., Jan. 21.	4:26	10:45	16:59	23:02
	13.8	1.2	13.8	2.0
Sat., Jan. 22.	5:03	11:19	17:34	23:40
	14.0	1.0	14.2	1.7
Sun., Jan. 23.	5:41	11:53	18:05	24:15
	14.1	1.0	14.4	1.4
Mon., Jan. 24.	6:16	12:28	18:40	24:56
	1.7	14.1	1.6	14.4
Tues., Jan. 25.	0:54	6:54	13:04	19:14
	1.7	13.9	1.6	14.6
Wed., Jan. 26.	1:34	7:32	13:45	19:51
	1.8	13.8	1.7	14.4
Thurs., Jan. 27.	2:21	8:15	14:31	20:34
	2.2	13.3	2.5	14.1
Fri., Jan. 28.	3:14	9:06	15:27	21:29
	2.5	13.1	2.8	13.8
Sat., Jan. 29.	4:15	10:11	16:31	22:36
	2.7	12.3	3.1	13.5
Sun., Jan. 30.	5:22	11:26	17:42	23:52
	2.7	12.5	3.4	13.6
Mon., Jan. 31.	6:32	12:40	18:55	25:00
	2.2	13.0	3.0	13.0

## FEBRUARY.

DATE.	Time and height of high and low water.			
Tues., Feb. 1.	1:15	7:39	13:46	20:03
	14.1	1.4	13.9	2.1
Wed., Feb. 2.	2:06	8:38	14:45	21:02
	14.8	0.4	14.9	1.0
Thurs., Feb. 3.	3:03	9:31	15:40	22:00
	15.5	-0.5	15.9	0.1
Fri., Feb. 4.	3:58	10:19	16:31	22:41
	16.0	2.1	16.5	-0.5
Sat., Feb. 5.	4:50	11:03	17:19	23:27
	16.3	-1.4	16.8	0.7
Sun., Feb. 6.	5:39	11:47	18:05	24:10
	16.2	-1.1	16.8	0.1
Mon., Feb. 7.	6:26	12:31	18:47	24:54
	-0.5	15.8	-0.4	16.3
Tues., Feb. 8.	0:55	7:08	13:14	19:29
	0.1	15.0	0.6	15.5
Wed., Feb. 9.	1:41	7:53	14:06	20:10
	1.0	14.1	1.7	14.5
Thurs., Feb. 10.	2:28	8:35	14:48	20:54
	2.1	13.0	3.0	13.4
Fri., Feb. 11.	3:20	9:23	15:42	21:44
	3.1	12.0	4.0	12.4
Sat., Feb. 12.	4:17	10:24	16:42	22:39
	3.9	11.2	4.8	11.7
Sun., Feb. 13.	5:23	11:40	17:49	23:39
	4.3	10.9	5.1	10.9
Mon., Feb. 14.	0:03	6:27	12:53	18:55
	11.5	4.5	11.0	5.0
Tues., Feb. 15.	1:00	7:23	13:52	19:44
	11.8	3.9	11.6	4.4
Wed., Feb. 16.	1:59	8:21	14:36	20:44
	12.3	3.1	12.3	3.6

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., January 2, 1916.)

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Dec. 27.	Relief (tug)	Merrit & Chapman	Kingston, Ja.	Dec. 28.	Relief (tug)	Merrit & Chapman	Jacksonville, Fla.
Jan. 1.	Chares.	Elders & Fyffes.	Port Limon.	Jan. 1.	Chares.	Elders & Fyffes.	Bristol via Kingston.
Jan. 2.	Cyclops.	U. S. Navy.	Norfolk.				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

					Cyclops	U. S. Navy	Norfolk.
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## PORT OF BALBOA.

ARRIVALS.				DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Dec. 27.	Edna.	Sudden & Christenson.	San Francisco.	Dec. 27.	Acojula.	Pacific Steam Nav. Co.	Salina Cruz.
Dec. 27.	Anyo Maru.	Toyoi Kisen Kaisha.	Valparaiso.	Dec. 27.	Urubamba.	Peruvian Line.	Chilean ports.
Dec. 28.	Tampico.	Pacific Coast S. S. Co.	Valparaiso.	Dec. 28.	Adrea.	L. J. Shoemaker.	San Francisco.
Dec. 28.	Huasco.	Chilean Line.	Talcahuano.	Dec. 28.	Herakles.	Brugsard Kiosterud.	San Francisco.
Dec. 29.	La Primera.	Standard Oil Co.	San Francisco.	Dec. 29.	Tampico.	Pacific Coast S. S. Co.	Honolulu.
Dec. 29.	Cauca.	Pacific Steam Nav. Co.	Guayaquil.	Dec. 29.	Anyo Maru.	Toyoi Kisen Kaisha.	Hong kong.
Jan. 1.	Jamaica.	Royal Mail Steam Packet Co.	Buenaventura.	Dec. 30.	Edna.	Sudden & Christenson.	Callao.
Jan. 1.	A. J. West.	Manila Import Co.	Manila.	Dec. 31.	La Primera.	Standard Oil Co.	San Francisco.
Jan. 2.	Pennsylvania.	Pacific Mail S. S. Co.	San Francisco.	Jan. 2.	Cleveland.	U. S. Navy.	Corinto.
Jan. 2.	Acme.	A. W. Beadle Co.	San Francisco.				
Jan. 2.	Harry Luckenbach.	Luckenbach Line.	San Francisco.				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Jan. 4.	Logan.	U. S. Army.	San Francisco.	Jan. 3.	Huasco.	Chilean Line.	Valparaiso.
Jan. 6.	Coaster.	C. H. Higgins.	San Francisco.	Jan. 10.	Cauca.	Pacific Steam Nav. Co.	Guayaquil.
Jan. 6.	O. M. Clark.	C. H. Higgins.	San Francisco.	Jan. 10.	Jamaica.	Royal Mail Steam Packet Co.	Buenaventura.
Jan. 6.	Scio Maru.	Toyoi Kisen Kaisha.	Hongkong.	Jan. 12.	Pennsylvania.	Pacific Mail S. S. Co.	San Francisco.
Jan. 12.	Hesperos.	Brugsard Kiosterud.	Tecapilla.				

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Fuel.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of the Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 50 shillings per ton of seven barrels.

## Midwinter Letters.

BALBOA HEIGHTS, C. Z., January 5, 1916.

The following insufficiently addressed letters, cards, and packages have been received in the office of the Director of Posts and may be procured upon application of the addressees:

Battenfeld, C.	Macy, Capt. F. S.
Consaves, Agostin	Mason, R. G.
*Conway, Jos. H.	*O'Brien, R. E.
†Dale, Mrs. Nicholas	*Oliver, Roy I.
*Deany, H. J.	*Perrott, Mrs. Iona
*DeJan, Mrs. Clara	Payne, Pvt. Wm. E.
Donahue, Arthur	*Peterson, Carl P. R.
Ehner, F.	*Reese, Mrs. P. T.
Fernandez, José Ramon	Robinson, Robin
Fitzpatrick, Wm.	Sedgwick, L. M.
Gauvin, Mrs. Albert	Sharpe, Fred B.
*Gerndt, Pvt. A.	*Sibbly, Percy H.
†Goodrich, Mrs. C. M.	Stapinsky, John
*Hardt, Sergeant	Stevenson, Harold
*Hayford, John F.	Stuart, Sgt. Fred E.
*Heady, Burr	Stewart, Oscar
*Hill, Mrs. Roy A.	*Thomson, Mrs. A.
*Hunt, James E.	*Turner, W. C.
Jackson, Joseph	Walker, K. Frank
Knight, Bradley G.	*West, Fred
*Lyons, J. D.	Wiggins, Roy
MacAulay, James	Williams, Geo. Fred
*Card, †Paper, †Package.	

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, January 10 and February 7, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

†NOTE—When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, January 1, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun	Gatun	Miraflores
			Lake	Lake	Lake
Sun., Dec. 26.	126.40	92.81	86.44	86.44	53.95
Mon., Dec. 27.	126.40	92.80	86.51	86.44	53.93
Tues., Dec. 28.	126.40	92.80	86.52	86.50	53.78
Wed., Dec. 29.	126.03	92.50	86.50	86.52	53.70
Thurs., Dec. 30.	126.01	92.44	86.54	86.54	53.64
Fri., Dec. 31.	125.98	92.40	86.51	86.45	53.65
Sat., Jan. 1.	126.00	92.40	86.57	86.52	53.61
Heights of low water to nearest foot.	125.0	91.0			

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.				
Vessel	Line	Sails.	Arrives.	
Almirante.	U. F. C. Line.	29	Jan. 5	
Panama.	P. R. R. Dec.	31	Jan. 6	
Pastores.	U. F. C. Jan.	1	Jan. 9	
Zacapa.	U. F. C. Jan.	5	Jan. 12	
Allianca.	P. R. R. Jan.	6	Jan. 11	

Calamares.	U. F. C. Jan.	8	Jan. 16
Corrillo.	U. F. C. Jan.	12	Jan. 18
Metapan.	U. F. C. Jan.	13	Jan. 18
Tenadores.	U. F. C. Jan.	15	Jan. 23
Santa Marta.	U. F. C. Jan.	19	Jan. 26
Advance.	P. R. R. Jan.	20	Jan. 27
Metapan.	U. F. C. Jan.	22	Jan. 31
Almirante.	U. F. C. Jan.	26	Feb. 2
Panama.	P. R. R. Jan.	27	Feb. 2
Pastores.	U. F. C. Jan.	29	Feb. 6
Calamares.	U. F. C. Feb.	2	Feb. 9
Allianca.	P. R. R. Feb.	3	Feb. 9

## CRISTOBAL-COLON TO NEW YORK.

Advance.	P. R. R. Jan.	6	Jan. 13
Santa Marta.	U. F. C. Jan.	6	Jan. 13
Metapan.	U. F. C. Jan.	10	Jan. 18
Panama.	P. R. R. Jan.	13	Jan. 19
Almirante.	U. F. C. Jan.	13	Jan. 20
Pastores.	U. F. C. Jan.	17	Jan. 24
Allianca.	P. R. R. Jan.	20	Jan. 26
Zacapa.	U. F. C. Jan.	20	Jan. 27
Calamares.	U. F. C. Jan.	24	Jan. 31
Colon.	P. R. R. Jan.	27	Feb. 2
Corrillo.	U. F. C. Jan.	27	Feb. 3
Tenadores.	U. F. C. Jan.	31	Feb. 7
Advance.	P. R. R. Feb.	3	Feb. 10
Santa Marta.	U. F. C. Feb.	3	Feb. 10
Metapan.	U. F. C. Feb.	7	Feb. 15

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba.	U. F. C. Jan.	1	Jan. 8
Cartago.	U. F. C. Jan.	5	Jan. 10
Abangarez.	U. F. C. Jan.	8	Jan. 15
Heredia.	U. F. C. Jan.	12	Jan. 17
Atenas.	U. F. C. Jan.	15	Jan. 22
Parismina.	U. F. C. Jan.	19	Jan. 24
Turrialba.	U. F. C. Jan.	27	Jan. 29
Cartago.	U. F. C. Jan.	26	Jan. 31
Abangarez.	U. F. C. Jan.	29	Feb. 5
Heredia.	U. F. C. Feb.	2	Feb. 7
Atenas.	U. F. C. Feb.	5	Feb. 12
Parismina.	U. F. C. Feb.	9	Feb. 14
Turrialba.	U. F. C. Feb.	12	Feb. 19

## CRISTOBAL-COLON TO NEW-ORLEANS.

Parismina.	U. F. C. Jan.	9	Jan. 14
Turrialba.	U. F. C. Jan.	9	Jan. 16
Cartago.	U. F. C. Jan.	16	Jan. 21
Abangarez.	U. F. C. Jan.	16	Jan. 23
Parismina.	U. F. C. Jan.	23	Jan. 28
Turrialba.	U. F. C. Jan.	23	Jan. 30
Cartago.	U. F. C. Jan.	30	Feb. 3
Abangarez.	U. F. C. Jan.	30	Feb. 6
Parismina.	U. F. C. Feb.	6	Feb. 11
Turrialba.	U. F. C. Feb.	6	Feb. 13
Cartago.	U. F. C. Feb.	13	Feb. 18
Abangarez.	U. F. C. Feb.	13	Feb. 20



# CANAL



# RECORD

## SLIDES AT PANAMA.

By Maj. Gen. GEORGE W. GOETHALS, United States Army, Governor of The Panama Canal.

In building up a pile of sand on the natural surface of the ground which is practically level or horizontal, the sand being in no way confined, a movement of the sides will be noticed at each successive dumping of material, which movement will continue until certain defined slopes are reached, after which the particles will remain at rest. The

cut be increased. The same results obtain with other materials.

In a similar way, if the ground instead of being practically horizontal is inclined, the material piled upon it will adjust itself to the conditions which the inclination imposes, and when a cutting is made through material which rests on an inclined surface along which sliding can take place, the mass above this surface will slide down into the trench or prism if the bottom reaches or goes below the underlying or inclined surface.

The weight of an embankment of material is transmitted downward from the surface of the ground, and if the top surface, hard in itself, is underlaid with soft or relatively weak material, conditions may arise in which the load transmitted to the underlying material is greater than it can bear, in which case rupture of the weaker strata results, the upper portion of the ground settles, carrying with it the superimposed embankment, and the ground adjacent to and outside of the embankment



NATURAL SLOPE OF MATERIAL EXCAVATED FROM CANAL PRISM.

angle that the slope which the sand finally assumes makes with the horizontal is called the angle of repose, and the slope is designated the natural slope. What is true of sand is true of all other materials; each has its particular slope at which it will remain at rest.

If instead of piling up sand a trench is cut through a deposit of such material, unless care be taken to excavate so that the sides of the trench are left at their natural slopes, the sand will slide down until the natural slopes are reached. This movement in the sides will occur again if the depth of the

If the material is piled on ground that is soft and unable to bear the weight which the pile may bring upon it, the side slopes will adjust themselves to this condition. In the general case the soft material when no longer able to bear the weight will be squeezed out, and the movement will drag with it a portion of the slope, which is thereby flattened; the squeezed-out material piles up in a hump or mound outside the toe of the slope, sometimes at a considerable distance, and finally counterbalances the material in the embankments; the movement ceases when equilibrium is established.

or pile is forced up until equilibrium is secured.

Under those conditions spreading the base of the embankment sufficiently to insure a load on the weaker strata less than that required to rupture it will prevent this action. If it be necessary to increase the height of the embankment after troubles of this kind have started, they are cured by extending the base of the superimposed mass sufficiently to establish equilibrium. The extent to which this blanket should be carried is determined experimentally.



SOFT GROUND "A" PUSHED UP BY WEIGHT OF EMBANKMENT.



WEAK UNDERLYING STRATA PUSHED UP "A" BY WEIGHT OF EMBANKMENTS "B"; SPREAD "C" NOT SUFFICIENT TO PRODUCE EQUILIBRIUM.



If instead of building up an embankment on ground so constituted a trench be cut through it, the removal of the material from the cutting will change the distribution of the load of the adjacent banks, and if the excavation be carried deep enough, results will be produced similar to those in the foregoing case of the embankment, i. e., either the soft or underlying strata will be forced into the excavated area, or the bottom of the latter will be pushed up, when rupture is caused before the bottom of the excavation reaches the weaker layer. In either case the bank above the broken strata is ruptured, and there will be a movement of a portion of the bank into the trench, the motion continuing until equilibrium is reached. The trench is filled or partially filled by the material that moves in, and when this is taken out additional material may break away, and so the operation continues until final equilibrium and ultimate

pile which formed the southern toe of the portion of the Gatun Dam near the edge of the old French Canal, and which brought forth such adverse criticism of the project at the time, was caused by dumping rock on a comparatively soft and slippery material.

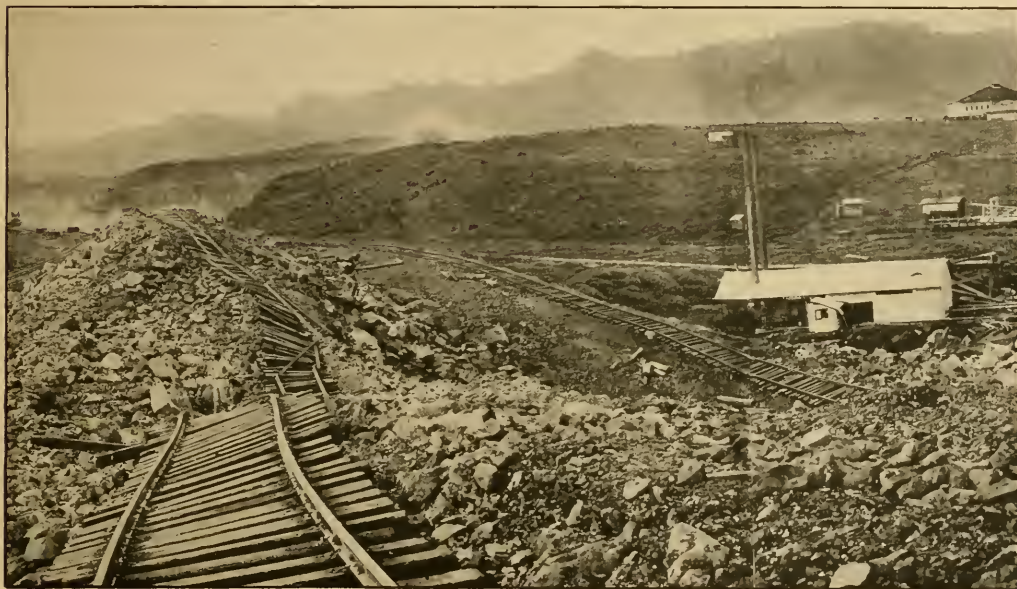
On the relocation of the Panama Railroad, high embankments were built on ground underlying which were relatively soft strata that could not bear the pressure transmitted to them by the superimposed masses.

Depending upon the causes, the slides which were encountered while excavating for the locks and the canal prism, were of three distinct classes. First, those caused by the material assuming its natural slope, in cases where the banks were left steeper than the angle of repose for the particular material through which the excavation was carried.

Second, those due to the fact that material more or less permeable reposed on relatively

material suddenly, at times burying or overturning steam shovels and tracks, interrupting drainage, and causing considerable delay and additional expense. In these cases when the material reached the angle of repose which the conditions imposed, there was no further trouble.

The third class or breaks were the most serious and difficult slides encountered, and our present difficulties are due to breaks, two in number, on opposite sides of the Canal in the vicinity of Culebra, north of Gold Hill. While breaks occurred at various places along the line of the canal, those in Gaillard Cut, or the excavation through the continental divide, were the most serious, because of the heterogeneous masses of material which composed it, and the depth of the cutting, which affected the territory adjacent to the cut for a considerable distance, and therefore brought down large quantities of material.



SLIP OF ROCK PILE AT GATUN DAM.

stability is secured unless, as in the case of the embankments, some means can be adopted to reduce the load of the adjacent banks other than allowing all the material to enter the prism for removal. The results which follow in the foregoing cases are modified through extraneous causes, such as alternate freezing and thawing and excessive moisture due to rains or snow.

The foregoing behavior of various materials under varying conditions explains the causes of the slides that have been encountered in the construction of the canal. They occurred at points all along the line, from the lower end of Gatun Locks to the sea-level section south of Miraflores Locks, both in building embankments and in the various excavations that were made. They were encountered early in the construction of the Sosa-Corozal and Gatun Dams. In the former, due to the weak strata underlying the surface, there was caused a bulging up outside of the embankment, with a consequent settlement and displacement of the pile. The slip which occurred in the rock

harder strata, which inclined toward the cutting. When the excavation reached a level near or below the intersection of the harder plane with the sides of the prism, the superimposed mass moved into the excavated area.

Third, those which resulted from the breaking of weak strata underlying the banks, rupture being produced by the concentration of the weights of the banks due to the removal of the material from the prism.

The first two classes were designated "slides." With the third class the cause was the breaking up structurally of the natural material, and they were called "breaks" in contradistinction to the slides, although after the break occurred the movement of the mass above the fractured strata into the excavated area, produced the same general effect as a slide of the other classes.

The first class gave relatively little trouble and ceased entirely when the natural slope of the material was reached. The second class usually brought in quantities of ma-

The French company experienced difficulties with a slide at Cucaracha as early as 1884, but all the indications pointed to a surface movement only, and this opinion was supported by geologists who examined into the matter. With the possible exception of the French member, who is said to have been somewhat apprehensive on the subject, the international board of engineers anticipated no difficulties from landslides, as their report clearly indicates, and as does also the testimony of those members of that board who appeared before the committees of Congress dealing with the canal. The slides that were regarded as probable were surface movements of the clay covering the rocks, resulting from the heavy rains, and these were provided for by arranging the slopes in a series of steps on a general inclination of 45°, the angle of repose of ordinary earth.

After the United States forces began work, sliding at Cucaracha continued, and in 1906 a geologist was employed who, after spending some months making personal examination of the geological formation of the country





SLIDE OF THE SECOND CLASS.



UPHEAVING OF BOTTOM AND EFFECT OF A BREAK IN THE PRISM DURING DRY EXCAVATION.

traversed by the canal, made a report on the subject, which was published in full in the Annual Report of the Isthmian Canal Commission for 1907. In this report he states:

"The relation of the isthmian geology to the varied problems of canal construction is, in all cases, intimate. One of the problems that is closely connected with the geology is that of the excavation of the cut in the central area. Actual work has advanced so far in this region, however, that geology can add little to the practical information acquired in the course of the excavation that has already been made. A less evident, but perhaps closer, relationship exists between the geology and the problems attendant upon the construction of the locks and dams, while the necessity of obtaining large quantities of building material near the points where locks and regulating works are to be constructed, calls for a special study."

of rock are improbable, while slopes of suitable angles will do away with the danger of minor slips.

"Gold Hill is bounded on the north and south by faults, the mass of the hill having sunk with respect to the rocks on the other side of the faults. During the process of faulting the strata were twisted to the eastward and now have steep dips in that direction. This structure is also complicated by large masses of intrusive basalt, which were included in the Culebra beds prior to the faulting. The induration resulting from these intrusions has been so extensive that all the rocks in Gold Hill are now very hard and firm, and with the sedimentary beds dipping into the hill the conditions are such that landslides are most unlikely to occur.

"In Contractors Hill a heavy breccia member of the Culebra beds dips in the

have taken place frequently in the rainy season. The materials involved in these slides are purely superficial. In some cases French spoil banks have slipped. The cause in all cases seems to be the saturation of the unconsolidated surface material and its movement on layers of slippery clays either in the Culebra beds or residual clays upon which spoil was dumped. The basin south and east of Gold Hill collects large quantities of water during the rainy season, and this escapes through no well-defined drainage, but in springs along the edge of the cut. In some cases surface soils or even the rock of the Culebra formation may take place in these landslips. They are not serious, however, and, although they may continue in a minor degree for a number of years, the removal of the material before it reaches the edge of the cut and the gradual reduction of the slopes



ROCK DIKE AT CUCARACHA UNCOVERED IN 1910.

From this it would appear that the excavation in the cut would be attended with few difficulties other than those which are usually encountered in work of such character and magnitude, and that the services of a geologist in connection with the canal would be of value with respect to the locks and the construction materials required therefor, rather than the excavation through the Continental Divide. However, he discusses subsequently, in the same report, the conditions of the cut in the vicinity of our present difficulties, in a manner still more explicit, as follows:

"The physical character of the Culebra beds, consisting as they do of alternating layers of sandstone and shale, is peculiarly favorable to landslides. Structurally, however, the strata are so nearly horizontal, or have such low southerly dips north of Gold Hill, that movements involving large masses

direction of the cut. It is believed that the soft Culebra beds will be encountered below the breccias. If these beds are found to have strong northeasterly dips—that is, if they are inclined in the direction of the cut, as the surface indications suggest—it will be necessary to make comparatively low slopes on the southwest side of the canal at Contractors Hill in order to avoid any possibility of landslides. This is the only point along the canal where such movements are at all possible. In my opinion the danger is not serious, but ordinary prudence requires that, if the soft Culebra beds are found beneath the breccias to dip at angles of more than 15° in the direction of the cut, the angle of slope be so reduced as to do away with all danger of slipping.

"Between Gold Hill and Cucaracha, on the northeast side of the cut, landslides

back of the cut will stop this trouble. The French attempted an elaborate system of drainage to overcome the difficulty, but this has been proven entirely inadequate, and it is improbable that any system of this sort would be practical or economical."

"So far, then, as the geologist could foresee, difficulties north of Gold Hill were improbable, and if any occurred they could be easily overcome and prevented by suitably sloping back the sides of the excavation. The weak place along the line, the locality to expect landslides, was on the southwest side of the canal at Contractors Hill, provided the beds below the breccias dipped at greater angles than 15°. This locality was carefully watched, but the slides that occurred there were small and caused but little trouble.

The geologist's report gives correctly the conditions at Cucaracha as he found them,



but the predictions in other respects regarding it were not realized, for except the breaks that now close the canal it was the most difficult of all the slides to handle. As described, it was a typical slide of class 2, and continued so, giving more or less serious trouble until a rock dike was uncovered in 1910.

This dike seemed to possess ample strength to hold back the great mass of clay remaining on the levels above it, and the movement that continued after the rock mass was uncovered, was well defined, flowing on either side of it; after motion ceased, the heavy rains washed down clay from above, but this caused no particular trouble. In this vicinity the clay movement resembled that of a glacier, and in the fall of 1907 so effectually blocked the prism that steam shovels could make no headway and recourse was had to sluicing a passage through for the tracks. Subsequent movements interrupted transportation, but the troubles gradually lessened until the dry season of 1910-11, when they ceased entirely.

Unfortunately these expectations were not realized. When the rock mass forming Gold Hill, at the original continental divide, was pushed up through the formation existing at the time, its molten mass overflowed the adjacent beds so that it has the shape of a mushroom. The movement at Cucaracha had pulled out the support of part of the overflow, which to some extent scared and unsupported, broke off, causing a rock slide south of the hill in the middle of January, 1913. This was followed on January 29, by a typical "break" at Cucaracha, by which the rock bluff which was holding back the upper mass of clay broke at or below the bottom level of the canal, completely filling the prism with clay and rock, reaching to 69 feet above sea level on the opposite or west side of the cut.

The length of the prism so filled was 1,600 feet. Steam shovels were scarcely able to keep pace with the movement, tracks were covered and disarranged, shovels overturned, and the difficulties of transportation increased, since only tail tracks sufficient

advantage; it was estimated that the removal of 2,000,000 cubic yards would clear the prism, and that the bottom grade would be reached by June. During February, 8 steam shovels removed 168,677 cubic yards; 6 shovels working during March and April removed 203,630 and 204,308 cubic yards, respectively, but these were dry season months. The rainy season set in and reduced the output of the same number of shovels during May to 148,000 cubic yards, and during June to 124,844 cubic yards. The expectation of reaching the bottom at this time was not realized. The cost of excavating material from the slide was not segregated from that of the balance of the cut; the cost of removing 921,000 and 808,000 cubic yards from the entire length of the cut, including Cucaracha, during May and June, was 62 and 66 cents per cubic yard, respectively. Difficulty was experienced in maintaining tracks, not only at the slide, but on the dumps, and with the months of heaviest rainfall still ahead, the difficulties and the cost would be increased.



CUCARACHA SLIDE AFTER RUPTURE OF SUPPORTING ROCK MASS.

The difficulties encountered elsewhere because of slides increased and they became so troublesome that in the latter part of 1910, at the suggestion of Dr. C. W. Hayes, chief geologist of the Geological Survey, who examined the various localities on the Isthmus where movements had occurred or were in progress, a geologist recommended by him as having had the necessary experience for such work was employed to assist in the excavation. It seemed possible that through this expert advice some of the movements at least might be avoided. Mr. Donald F. MacDonald, the geologist so employed, was connected with the work for nearly three years, made a careful study of the formations and materials as the excavation progressed, and was helpful with his advice and suggestions. He was convinced from a study of the situation that our difficulties at Cucaracha were at an end, and that while some of the clay on the upper levels might move into the cut, the amount would be so small relatively that it could be handled easily and without material interference with the other operations, for the dike which had been uncovered would hold.

for two or three cars could be maintained. Furthermore, the soft material increased the difficulties on the dumps. As the movement continued, the clay broke farther and farther up the hillside.

There was still a large quantity of material near the tops of the hills forming the basin from which the material was moving; there was a sluicing plant that had done the work for which originally purchased; the configuration of the ground on the reverse side of the hills lent itself admirably to sluicing operations; and this method of removing the upper portions was adopted. Upwards of 1,000,000 cubic yards, which in all probability would have moved down into the prism, were removed by sluicing at a cost of 20 cents a cubic yard.

In the meantime, the remainder of the cut was nearing completion, ready for the admission of the water, and the question of continuing the removal of the balance of the slide by steam shovels, or by substitution of the dredges which were available, was considered. The slide had occurred in January; as many steam shovels were concentrated on the slide as could be worked to

The available dredging fleet was capable of handling larger quantities of material than this number of steam shovels; the dredges could work 24 hours per day, while the shovels could work not to exceed 12 hours. There would be no tracks to maintain, for the waterway itself furnished the transportation route, and there could be no trouble at the dumps, which would be various indentations in the lake. All indications pointed to dredging as the best means of removing the balance of the slide.

Another factor was taken into consideration. It was the belief that the effect of the water would tend to retard the slides, through the counteracting effect of the weight of the volume of water, and this belief seemed justified from the experience gained with the slide below Gatun Locks. On the other hand, the geologist held the opinion that the water might to some extent develop the slides; if this were to be the case, then the sooner this fact was developed the better. Mr. MacDonald's views are expressed in his report incorporated in the Annual Report of the Isthmian Canal Commission of 1912, as follows:



"The turning of the water into the canal will remedy the slides in so far as it will provide cheaper methods of excavation and removal of them by dredging. The counterbalancing effect of the water against the slopes of the canal will be very small so far as the slides are concerned, for the following reasons: The maximum depth of water in Culebra Cut will be 45 feet, and the height of the slopes where sliding might occur is from 75 to 300 feet. The sliding material has an average specific gravity of about 2.5, hence 45 feet of water will balance about 18 feet of slide if the pressures were evenly distributed. Considering the more or less wedge-shaped fronts and the back pressures of many of the slides, it is estimated that the 45 feet of water would be equivalent to only about 10 feet of side pressure. Other considerations are that, though the water will protect the lower part of the canal from oxidation and weathering, thus removing a

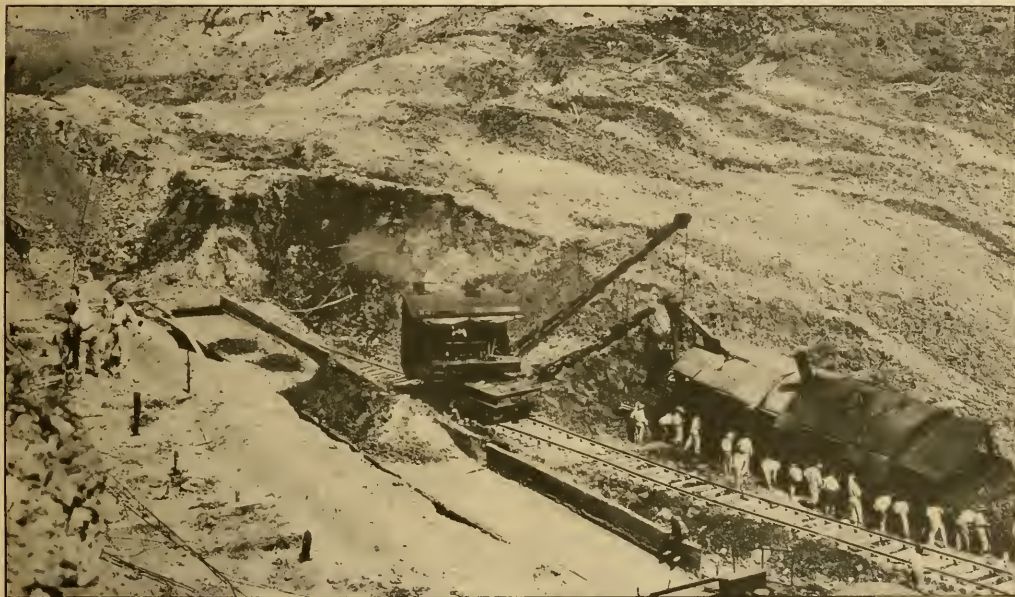
cost of the steam shovel operations for a total of 8,225,989 cubic yards removed from the entire length of the cut during the period considered, including Cucaracha, was 65 cents per cubic yard.

The third class of slides, or "breaks," began in 1907, at the village of Culebra, and those in this vicinity have been the most serious and troublesome. The first one manifested itself, when the excavation had reached a depth of approximately 100 feet below, near the old Panama Railroad station, by a crack in the surface of the ground, extending from one point on the prism slope to another. Subsequent to the appearance of the crack, there was a subsidence of the surface on the side of the crack farthest from the prism, accompanied by an upward movement of the bottom of the excavated area, and followed by the settlement of the mass between the crack and the cut, with ultimately a sliding in of this mass into the

lowing the material that broke off to move into the cut, the minimum amount would be handled, resulting in reduced costs, and the material left to itself would assume the natural slope that would result in rest under the conditions that existed.

The difficulty was that each break overturned the tracks at the bottom of the excavation, interrupted drainage, thus seriously interfering with and delaying operations in the prism, not only in the vicinity of the break, but at the localities where the shovels were drowned out through the stoppage of drainage, or where the train service to and from shovels depended upon the overturned or broken tracks. The expense involved by this condition would more than offset the cost of any excess of material, if any, that might be moved from the upper levels.

Two breaks occurred in rather rapid succession at Culebra in the latter part of 1910. The usual interruption of work occurred.



DIFFICULTIES OF STEAM SHOVEL WORK ON SLIDE.

small source of weakness, it will cause water to permeate under pressure the cracks and interstices at the foot of the slope and thus be an added source of weakness—though not a serious one—to the slides. On the whole, the water in the canal will slightly increase the tendency to slide, but this will be much more than offset by the cheaper methods of excavation and transportation which can then be used."

Water was admitted to the cut on October 10, 1913. The dredges reached Cucaracha slide on October 23, 1913, and up to August 3, 1914, on which date the first ship went through the canal, they removed 2,767,080 cubic yards, or an average of 286,239.75 cubic yards per month. The steam shovels working from January 20, 1913, to September 11, 1913, when steam shovel operations ceased, removed a total of 1,139,708 cubic yards from the slide, or an average of 142,463.4 cubic yards per month. The cost of the dredging for the period mentioned averaged 44 cents per cubic yard, while the

excavated area. In some of the subsequent movements of this kind, the upheaval of the bottom was sufficient to lift a steam shovel standing on the portion pushed up. The first break affected but a few hundred feet, but as the depth of the excavation increased, the breaks became more extensive both in length and quantities of material involved; furthermore, they occurred on both the east and west banks, until the upward movement along the bottom of the excavated area affected a length of 2,000 feet north of Gold Hill. The borings of record failed to disclose any weak underlying strata. The cause undoubtedly was the unequal distribution of the pressure exerted by the adjacent banks. Such being the case, it followed that if the height of these banks were reduced, the movement would be lessened, and if reduced sufficiently would cease entirely. Opposition developed to this method on the grounds that more material would in all probability be removed than was necessary; that by al-

The later one of the two determined the change in plan, and in January, 1911, the reduction in the height of the adjacent banks on both sides of Gaillard Cut in the vicinity of Culebra, was directed and begun. Had the adoption of the method been delayed, there would have been other difficulties attending the lightening process, for the outlet to the main line would have been cut off and there would have been a very material increase in cost to arrange for the transportation of the spoil.

The geologist, after examining into the situation, strongly indorsed the lightening of the banks, not alone because of upsetting and delaying operations within the prism, but because "each slide of this type deforms and weakens the rocks down below the limits of the material which actually goes into the cut at the time, and this sheared and weakened rock requires much flatter slopes to maintain itself than would have been necessary had it not been strained by pressure and deformation."



THE DREDGING FLEET AT CUCARACHA.



CUCARACHA SLIDE REMOVED.





ARRANGEMENT OF BENCHES ON THE WEST BANK NORTH OF CULEBRA (AREA OF PRESENT BREAK INDICATED).



BENCHING ON EAST BANK OPPOSITE CULEBRA (AREA OF BREAK INDICATED).





SHOVELS REMOVING FINAL BENCHES IN VICINITY OF CULEBRA; HAGAN'S SLIDE AT "A."



SECTION OF CANAL NOW BROKEN DOWN, AS STEAM SHOVELS WERE COMPLETING EXCAVATION OF PRISM; HAGAN'S SLIDE IN DISTANCE, SUBSEQUENTLY REMOVED BY DREDGES.

The work of lightening both the east and west banks was carried on until December, 1913, at which time 6,533,924 cubic yards had been removed from the east bank, and 8,797,990 cubic yards from the west bank, resulting in slopes of from 1 on 1.5 to 1 on 6.5 for the east side, and from 1 to 2.46 to 1 on 4.35 for the west side; the slopes were arranged in a series of benches.

The result of this method of procedure was that when the operations in the cut in the vicinity of Culebra were completed, prior to the admission of water, the breaks in the banks and the upward movement of the bottom had ceased entirely.

When the surface of the ground is exposed to the sun, cracks appear during the months of no rain after the sun and winds have dried out the surface. Unless the cracks are of some size, caused by prolonged exposure, they close and disappear after the ground is saturated by the rains. During the dry sea-

crease and there was no movement. The geologist has marked out the minimum and maximum limits to which in his opinion the breaks might extend, and the excavation on the two banks was extended to practically the maximum limits outlined, in some portions exceeding these limits. Such were the conditions in this section of the canal when water was admitted.

In the dry season of 1914 slight cracks appeared on some of the intermediate benches on the two sides in the vicinity of Culebra; whether they were ordinary dry-season cracks or the first indications of possible breaks could not be determined, though they resembled the former. To guard against contingencies, however, the shovels were returned, and worked on the east bank, reducing the slope still more, until April 1, 1914, and on the west bank they continued work until June 14, 1914, by which dates the cracks had been entirely dug out. When

into it from the east and two from the west, draining the basin on either side. It was necessary to construct new channels in order to keep the waters of the adjacent country from the area which was being excavated, so the Obispo diversion was constructed along the east side and the Comacho diversion along the west. The former skirted the La Pita Ridge, and the waters of the diversion seeping through crevices in the rock undoubtedly weakened some of the seams, which, combined with the pressure that was exerted, pushed a portion of the rock away from the bluff, the broken portion settling down and throwing a mass of rock into the prism. Through each break the waters of the diversion were turned into the cut, and new channels for them had to be provided.

The various slides began without any warning, and there were no means of determining the extent to which they would proceed. Various attempts were made to check



BREAK AT LA PITA POINT.

son of 1913 a crack appeared on the east side opposite Culebra, about 1,300 feet from the prism, in an old French dump; it was parallel to the canal, did not join the banks, there was no breaking up of the bank between it and the cut, nor any subsidence—in short, there were none of the indications that accompanied breaks. The geologist suggested lightening up the banks, which was done by sluicing and steam shovels; and as no movement could be detected, there was every reason to believe that it was not a break, especially as subsequent to this the prism below this section was completed to full width and depth without any indications appearing anywhere in the bottom or sides. A crack had existed for some years at the foot of Zion Hill, southeast of Culebra; the hill was pronounced geologically secure against any movement, and when the material was dug away from the upper portions of this bank and the slopes of the final bench reached the crack, it apparently did not in-

crease and there was no movement. The geologist has marked out the minimum and maximum limits to which in his opinion the breaks might extend, and the excavation on the two banks was extended to practically the maximum limits outlined, in some portions exceeding these limits. Such were the conditions in this section of the canal when water was admitted.

Within the 8.75 miles which constitute Gaillard Cut 22 slides and breaks developed. Cucaracha resumed its activity after the United States took charge, when operations were resumed in its vicinity, in July, 1905. In January, 1907, a slide occurred on the east side opposite Culebra, and the first break on the west bank at Culebra in October, 1907. The others developed at various times, the last one, a small slide, occurring at Pedro Miguel in January, 1913.

The causes of all of them were as already noted, except the "breaks" near La Pita Point on the east side between Empire and Cascadas; the first of these occurred in May, 1910, and the second in September, 1912. The line of the canal after leaving the Chagres followed the valley of the Obispo River, which had two tributaries emptying

them, but all without success. There is no question that the excessive rains were responsible in a great measure for most of them and for the difficulties that resulted because of them; yet some of the most troublesome ones occurred during the dry season. Drainage proved ineffective. The rains, which cover a period averaging nine months of the year, so thoroughly saturate the ground, that, though the surface may be dried out by the wind and sun during the remaining three months, the ground water remains. Because of the great depth of the cutting, subsurface drainage could not reach the ground water sufficiently deep to be effective, even if the excessive cost involved warranted such a procedure. It has been suggested that artificial heat be applied through pipes, but the cost precluded such a method of relieving the situation; furthermore, the relief would be temporary.

Planting the slopes with grasses and vegetation prevents, to a certain extent, the



erosion that follows some of the heavy down-pours, but even in places where this has been done the results anticipated were not secured. The trees that have been standing on the banks for years slide down, standing erect in their normal positions, with slides of the second class and in the movements that take place subsequent to the "breaks." Piling was tried with the hope that with the ends of the piles in firm ground the loose or moving portion might be retained in place; this also proved a failure, and along some portions of the banks are now seen piles projecting at various angles and at different elevations, though originally the piles were driven vertically and they were properly aligned. Where the moving mass was clayey material loosened up by the movement and by the rains, a covering of heavy riprap was resorted to with the hope that their weight would carry the pieces of stone through the mass to the solid ground below and thus check, if not stop, the movement;

yet been evolved to secure the results desired.

The construction of retaining walls to withhold the moving masses was not possible, for access to the sides of the prism where the walls belonged could not be had. When access was possible, the movement had ceased, there was no evidence of any further movement, and the desirability of or necessity for walls no longer existed.

Some of the sandstones and shales in the cut when exposed to the air disintegrate, but harden when kept constantly wet. Where disintegration occurred, the resulting soil would grow grasses and vegetation, and steps were taken to protect the slopes and the underlying material in this way, assisting nature to some extent in a country where vegetable growth springs up and expands rapidly.

Experiments were made with cement covering to the banks by the cement gun and by concrete held in place by rods embedded

there has been no movement of any kind in any of them after all the material that was in motion had been removed or come naturally to rest. This was true of slides and breaks alike along the entire length of the canal. With breaks of the La Pita Point type, since these were due to the waters of the diversion, the remedy lay in removing the cause, by turning the waters of the channel into the cut.

When the water was turned into the cut from Gatun Lake, the only obstructions existing were the dike at Gamboa, Hagan's slide, and Cucaracha slide. There remained in addition, to complete the excavation of the prism, a portion of the Lirio slide extending beyond the chord at the angle in the line of the canal at this point; a bench that was left along the east face, between points opposite Empire and Lirio, until the lightening work on the upper levels was completed, because the geologist feared the bank might break, as a break had



HAGAN'S SLIDE ENTIRELY REMOVED.

much of this riprap was subsequently removed from the prism by the shovels.

It was believed that blasting was in some measure responsible for the slides, on the theory that the shaking up of the banks caused by the blast destroyed the cohesion of the particles in the banks, resulting in their breaking down, so that steps were taken to reduce the depth of the holes and the amount of explosive used in order to lessen, if not remove, any source of trouble on this account.

It was learned that in experimenting with clays for the manufacture of pottery the Bureau of Standards had discovered a means of removing the slipperiness from the clays by inoculating the soils with a simple and inexpensive solution. With the hope that some such method of preventing the slides might prove effective with the soils on the Isthmus, samples were sent for experimental purposes along these lines, but it appears that these clays are of an entirely different character, and no method of treatment has

in the rock; neither proved successful, and they were abandoned. When the use of concrete proved a failure, the geologist thought that experiment might develop a solution which, applied to the face of the sandstones and shales, would combine chemically with the substances in these rocks, so as to form a coating of glass. Experiments were made, but no satisfactory solution obtained.

With the breaks, except those which occurred in the vicinity of La Pita Point, lightening the banks, where this could be done, secured good results, as did also the sluicing of the upper portions of the hills around Cucaracha slide into the valley on the opposite side of the hills from the prism; but in all other cases the only effectual method found was to allow the material to enter the cut and remove it by the steam shovels. This procedure has resulted in bringing all the slides to a state of rest, and with the exception of those now active none of them has given any trouble since, for

occurred in similar material to the north of the locality, and the inclines at the extremities of the cut over which spoil, shovels, track material, etc., were handled. The bench and the inclines were blasted prior to being covered by water. For the remainder of the 8.75 miles the prism was full width and depth. Subsequent to the admission of the water, Hagan's slide was cleared up and the channel at Lirio cut to the full width along the chord at the angle; no further trouble has been experienced at either of these places.

An hydraulic grader was constructed and used for washing down the slopes which seemed steeper than the natural slope; the resulting surface was planted with Bermuda grass; also new drains were cut or old ones opened up so as to keep the surface free from standing water, particularly from the benches that had been formed in places where banks were lightened. A break occurred in the vicinity of La Pita Point due to the same causes as in the other breaks



that had taken place at this locality, but affected only a small portion of the channel. Steps were at once taken and waters of the diversion were turned into the canal through five separate openings, thus draining all the pools which existed along the line of the

when, on October 14, 1914, without any warning, a section of the east bank north of Gold Hill settled vertically 20 feet. This section measured 2,000 feet along the prism face and extended back about 1,000 feet from the axis of the canal, generally along

feet to 9 inches at one point. Until August, 1915, the dredges were able for the most part to keep up with the movement as it came down, and probably would have been able to maintain this condition had not a movement occurred on the west bank,



SMALL SLIDES, CLASS ONE, NORTH OF GOLD HILL: "A" EAST BANK, "B" WEST BANK.

channel. Two small slides occurred, one on the east and the other on the west bank north of Gold Hill, but they were typical of class one slides, were easily handled by the dredges, and they were removed entirely before the passage of ships through the canal.

an irregular curved line. The top of the bank was from 300 to 350 feet above sea-level, and the extension of the ground eastward was relatively flat country. In the settlement, the upper portion that broke away remained practically parallel to its

necessitating work on this side to the detriment of the east side.

A crack was found on the slope of Zion Hill in June, 1914, but observations made upon it showed no movement and the solidity of the hill was never doubted. Subse-



CHANNEL NORTH OF GOLD HILL CLEAR OF SLIDES.

Ships were passed through the canal when a channel of sufficient width and depth was dredged through Cucaracha slide, and when there was every reasonable hope of maintaining it. In this respect there was no subsequent disappointment, and the dredges were completing their work in this locality

original position, and the benches which formed the upper part of the slide had not changed their relative positions, though they were badly broken up, while the lower strata were squeezed out across the canal. Subsequently, the broken mass moved into the cut, reducing the depth of water from 45

quent to the break on the east side, a gradual but general breaking up of the west bank followed, and the crack on the slope increased in size and new ones developed farther up the hill, until finally one extended to elevation 480, the limit of the present break. The movement into the cut

from the west bank occurred early in August, 1915, when a section of Zion Hill broke away and settled down. The edge of the break on this side is also a curve.

The movements from the two sides are toward the central portion of the inclosed

withdraw and begin again their approaches on it. These successive movements are due in large measure to the rains, which were above the average through October. The amount of material blocking the canal at this locality could be easily removed in 10 days

of obstruction. This sluicing, however, will not decrease the amount of material to be handled by the dredges. In the meantime the dredges not employed on the obstruction are working to the north of it digging the channel to full depth and as much wider than



SECTION OF ZION HILL THAT BROKE AWAY: "A" WAS ORIGINALLY AT "B."

area, and at this central portion is the obstruction to the channel. It first appeared as an island forced up from the bottom, then as a peninsula projecting from the east bank, and finally, was pushed

but for the recurring movements. When a cut is secured through this mass and it can be held, some idea can be formed of when the passage of ships can be resumed, but until this is accomplished it is impossible

the prism as is necessary to remove those portions of the slide.

In moving toward the cut the material on the east side is forming into a succession of waves, which move gradually into the



THE OBSTRUCTION IN THE CHANNEL TOWARD WHICH THE MOVEMENT IS CONCENTRATING.

entirely across the channel completely closing it.

The dredges in attacking the closure have made little headway thus far, for any gain was offset by a movement in the vicinity or in the rear of the dredges, forcing them to

to make any predictions. Sluicing the obstruction is producing some results, and the nozzles are being increased and streams with greater pressure are to be put at work to force the material to the dredges and to draw down the material which is the cause

prism. The one that occupied part of the channel in October is being dug away, except at the obstruction, another has formed in its rear, and still another is forming up the slope of the hill. This material in moving down has at the same time taken away





COMPLETE CLOSURE OF CANAL: WAVES THAT ARE MOVING DOWN SHOWN AT "A."



DEPRESSION BETWEEN ZION HILL AND CANAL.





BROKEN-UP CONDITION OF EAST BANK PRECLUDING USE OF STEAM SHOVELS.



BROKEN-UP CONDITION OF WEST BANK PRECLUDING STEAM-SHOVEL OPERATIONS.

the support of the overlying rock on the north side of Gold Hill, which, being seamed, becomes overbalanced and breaks away, producing the same results as occurred on the south face of Gold Hill during the removal of Cucaracha slide.

On the west bank the wave effect is also evident. Here the bank was pushed forward horizontally into the channel, followed by a settlement of the mass; the benches in some portions still maintain their relative position with respect to each other, but the ground in their rear settled, forming sink holes on the side away from the prism. There is some movement northward along the axis of these depressions into the prism. The southern portion of this west bank has come to rest, but projects into the channel.

As stated previously, the breaks in the vicinity of Culebra were handled by excavations in the prism and by steam shovels lightening the banks above; at Cucaracha a great deal of material was diverted from the prism by sluicing. When the break of October 14, 1914, occurred, an examination was made to ascertain if relief could be afforded by either of these methods, but neither was practicable for the east bank. The configuration of the ground made it impossible to sluice any material away from the prism. Steam shovels and trains could not operate on any portion of the broken mass, which was incapable of giving them necessary support, and so far as concerned the stretch of ground between the break and the limiting crack, it was in such condition that before preparations could be completed for beginning work it would be broken up so that steam shovels could effect nothing. Subsequent developments have verified this. No further cracks or indications of a further extension eastward have occurred, and judging from past experience the existing limits are definitely marked, the farthest section being 1,300 feet from the east water line of the canal.

Similar investigations were made with regard to the use of steam shovels and sluicing operations on the west bank. The configuration of the ground is such that all the material in the present movement will be taken away long before the area involved

could be reached. Like the east side, sluicing away from the direction of the prism is impracticable.

The conclusion reached, therefore, was that the only method of hauling the slides on the two banks is to remove the material from the prism by dredges as it comes in. The breaks on the two banks are clearly defined, and judging from experience with other slides and breaks the limits of the movement have been reached.

Mr. MacDonald, the geologist formerly employed, passed through here on his way to Costa Rica three weeks ago, and after going thoroughly over the slides reached the same conclusions as to the limits to which the sliding would take place and the methods employed for handling the material. His profession, his intimate knowledge of the formation of the locality, and his experience with the various slides and breaks make his opinions on the subject of value. He also expressed the belief that the troubles due to slides would end with the removal of the material from those in progress.

When the break occurred in October, 1914, and the subsequent breaking up of the west bank became evident, it was decided to augment the dredging fleet by another 15-yard dipper dredge and three 1,000-cubic-yard barges, all of which are now in service, and the dredges are handling at the slide nearly 1,000,000 cubic yards per month at a cost less than 30 cents per cubic yard.

As to the amounts involved, it is difficult to make any reliable estimate. As already stated, when the break occurred at Cucaracha in 1913 it was estimated that 2,000,000 cubic yards were involved, but before the movement ceased 4,679,238 cubic yards were taken out by steam shovels and dredges, in addition to upwards of 1,000,000 cubic yards of material which would have entered the prism had it not been removed by sluicing.

The length of the slides, which are directly opposite each other, is approximately 2,200 feet (the channel through which is navigable with the exception of 600 feet); the banks are 300 to 350 feet above sea level on the east and extend up to 480 feet above sea level on the west. The area of the territory affected on the east side covers 81 acres and on the west side 78.5 acres.

Assuming that all material lying above planes extending from the outside limits of the bottom of the prism, reference 40, up to the limits of the breaks, will move into the cut, 7,000,000 cubic yards will have to be removed before the slides are entirely stopped. Mr. Comber, resident engineer of the dredging division, assumed a surface parallel to the surface existing on October 14, the date of the last complete survey, and 45 feet below it, on which basis 13,000,000 cubic yards would be the quantity to be handled. He thinks, however, that a mean between the two amounts may be more nearly correct, which was the method of arriving at the 10,000,000 cubic yard figure which has appeared in the press. It is at best only a guess. It must not be inferred from this that the canal will be closed until this amount is dredged, for such is not the case; on the contrary, it is the intention to pass ships as soon as a channel is secured through the remaining 600 feet, and there are reasonable grounds for assuming that a channel through the obstructed area can be maintained.

It is certain that the troubles are due to the failure of underlying strata, because these were unable to bear the weight that the banks brought upon them. Under the circumstances it is difficult to understand the impression that has gained credence in some quarters that a sea-level canal would have avoided the difficulties encountered, since the cutting would have been through the same material, but at least 80 feet deeper.

It is also certain that nothing can stop the movements now in progress until the angle of repose is reached for the materials under the conditions that exist, and that this can be reached only by removing the excess amount of material. If experience counts for aught, then that gained in the handling of the slides and the breaks that have occurred along the line of the canal leaves no doubt that the means adopted and now in use will effect a cure in the slides that now close the canal; furthermore, that when cured no further troubles need be anticipated from slides in this locality.

NOVEMBER 15, 1915.









# CANAL



# RECORD

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## NOTES OF PROGRESS.

Passage of the Last of the Ships Waiting at Canal Entrances.

The steamship *Newton*, which was held at Balboa since October 15, 1915, and at Pedro Miguel Lock since December 23, made her way past the slides in the Cut on Thursday, January 6, and completed the transit of the Canal the following morning, clearing for Stockholm.

The transit of the *Newton* clears up the shipping which had waited at the ends of the Canal for passage. The four-masted American schooner *A. J. West*, a vessel 161 feet in length, with beam of 40 feet and draft of 17 feet, which arrived at Balboa on January 1, over three months out from Manila, was towed through the Canal at the time the *Newton* was handled past the slides. The *West* has been leaking badly, and she was taken through to Cristobal so that she might discharge cargo and go into dry dock. As the transit of shipping interferes with the dredging operations and a stable channel can not be maintained at present The Panama Canal will not undertake to handle any other vessels through the Canal until notice of readiness is given, and operators are warned not to send vessels to the Canal for transit at this time.

Excavation in the Cut during the Past Week.

Excavation from the bases of the Culebra slides, obstructing traffic through the Canal, amounted to 210,425 cubic yards during the week ending at midnight of Monday, January 10. Other excavation in the Cut during the same period amounted to 21,867 cubic yards, making a total for the week of 232,292 cubic yards. In addition, 13,319 cubic yards were rehanded.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	75,365
Gamboa.....	15-yard dipper.....	12,590
Paraíso.....	15-yard dipper.....	47,215
Corozal.....	Ladder.....	43,165
Culebra.....	Scooping suction.....	21,867
No. 86.....	Pipeline suction.....	13,319
Marmot.....	Belgian ladder.....	13,520
Cardenas.....	5-yard dipper.....	18,570

The Gamboa worked only 1½ days, as during the remainder of the week the dredge was undergoing general repairs, alongside the repair wharf at Paraíso. The Cardenas worked 6½ days.

The average aggregate output from the Cut during the 11 weeks preceding that ending at midnight of Monday, January 10, not including rehanded spoil, was 264,317 cubic yards, the total amount of primary excavation during that period having been 2,907,492 cubic yards.

## Oil for Storage at Balboa.

The oil tank steamship *Capt. A. F. Lucas* and the Standard Oil Company's barge *No. 93* arrived at Balboa at 3 and 3.30 a. m., respectively, Monday, January 10, with a total of 64,000 barrels of fuel oil for The Panama Canal.

Trestle to Connect the Pacific Terminal Oil Crib with Shore.

A pile trestle is being constructed to carry the oil and water pipelines connecting the oil crib at Balboa with the handling plant on shore. The placing of the pipes on the trestle has been found advisable by reason of the high cost of maintenance which has been experienced with the pipes under water, on account of the severe currents set up by the great range of tide on the Pacific side. The trestle will carry a line each for crude oil, Diesel oil, gasoline, and water, and will also support a footwalk. A gate will be installed at the shore end of the walk to prevent unauthorized traffic.

The "Cyclops" Delivers Oil for Atlantic Storage Plant.

The collier *Cyclops* of the United States Navy, which discharged a cargo of coal at Cristobal last week, delivered also 2,400 barrels of fuel oil to the storage of The Panama Canal at the Atlantic terminal. Following the closing of the Canal there has been some difficulty in keeping the tanks at the Atlantic entrance supplied, and tenders removed from retired locomotives have been used as tank cars for hauling oil from the storage tanks at Balboa. A reserve of about 5,000 barrels is kept in storage at the Atlantic end, the stock being maintained by transfers from Balboa. Very little oil is sold to ships at the Atlantic entrance at this time. The principal use is for the floating equipment of the Dredging Division and at the roundhouse.

## STANDARD TIME FOR SHIPS.

Chromometers in Port Captains' Offices Are Regulated by Radio from Washington.

The chronometers in the offices of the Port Captains at Cristobal and Balboa are being calibrated by checking against the time sent out every day at noon from the chronometer in the United States Naval Observatory at Washington. The time is flashed to the radio station at Darien from that at Key West, which sends it direct from a telegraph wire from the observatory in Washington. The current on the wire from Washington works through a relay and operates the radio sending key. The Darien station transmits the signal by telegraph wire to the Port Captains' offices, as well as to the headquarters of the troops on the Canal Zone, at Ancon.

The time signal is sent from Key West in a series of dots, transmitted at precise intervals. Five minutes before the hour of 12 noon the sending operator begins to count off the seconds by sending a dot at the beginning of each second. After the twenty-eighth dot there is a pause, the twenty-ninth dot being omitted. The count is resumed on the thirtieth second, at the exact half minute, and continued by seconds until the fifty-fourth has been struck. There is then a pause of five seconds, the count being resumed on the sixtieth second. This procedure of counting is kept up for four minutes and 50 seconds, or until 10 seconds before noon. By the time the tenth second preceding 12 o'clock is reached the receiving operator will have his chronometer practically synchronized, but a pause of 10 seconds is made to give clarity and emphasis to the signal for the exact hour. At the exact hour the signal is given by one long dash.

The aerial transmission is recorded at Darien by a current too slight to permit of ordinary electrical relaying. Relay connections can not, therefore, be made to transmit the original signals direct to the offices of the Port Captains. This is handled by having the receiving operator at Darien transmit through an ordinary telegraphic key the signals as he hears them come through his receiver from the antennæ. With practice he can strike the dots on his sending key in almost perfect synchronism with the dots received, this being almost mechanical. The principal difficulty is in sending the dash indicating exact noon, as after the pause of 10 seconds it takes a slight interval of time for the operator's brain to interpret the signal and respond in the pressing of the key. This causes a slight lag, which has been measured and found to vary between two-tenths and three-tenths of a second. It can hardly be eliminated, because if the operator tries to anticipate the receipt of the dash he is likely to strike the key too soon. However, even with these mechanical defects in the system, it is possible to give slightly more accurate time than can be done over a long cable, in which the capacity causes some re-



tardation. With allowance at the Port Captain's offices for the lag of approximately two-tenths of a second in the sending of the final dash, it is possible to rectify the chronometers to within one-tenth of a second of absolute accuracy. The lag is observed each day at the Darien station and telephoned to the Port Captains' offices, but it cannot be measured exactly. Arrangements are being made for the installation of a transmitting clock at Darien, which will transmit the signals exactly as they come from Key West.

The importance of exact time at the Canal lies principally in its being given to the ships coming to the Canal ports. In making observations of heavenly bodies to determine longitude at sea a variation of a second of time from accuracy means an error of one-fourth of a nautical mile in location. Accordingly, if a ship's chronometer were five minutes off from the true time an observation of longitude might result in an error amounting to 75 miles. The time element is of less importance in the calculations of latitude.

The service which is received at the Darien station is part of that furnished to ships at sea through the Key West and other radio stations. It is described in a circular, No. 6, published by the Hydrographic Office.

#### Fund for Amusement of Lepers at Palo Seco.

The following is a financial statement, covering the receipt of contributions to the Palo Seco amusement fund, and the expenditures made from the fund to December 31, 1915. The fund has been made up of voluntary contributions from persons on the Isthmus moved by pity for the lepers isolated in the colony at Palo Seco. The work was begun by the superintendent of the asylum. He is the custodian of the fund, and submits the following statement:

##### RECEIPTS.

Lieut. R. Goetz (subscriptions).....	\$231.00
Ladies of Balboa (subscriptions).....	30.00
Post exchange, Empire, C. Z.....	38.00
Star and Herald (subscriptions).....	18.00
Names withheld.....	4.00
Mr. E. Cassel.....	5.00
Miss F. B. Bradshaw.....	2.00
Mrs. Witmer.....	1.00
<b>Total.....</b>	<b>\$329.00</b>

##### EXPENDITURES.

Motion picture machine and accessories.....	\$139.30
Curtain, complete.....	8.80
Repairs to machine.....	10.00
5,000 needles for Victrolas.....	5.00
Sound boxes for Victrolas.....	10.00
Ice cream, cigars, and bunting.....	9.00
Rewinder for films.....	4.00
Film cement.....	4.00
Slide ink.....	.25
10 stereopticon slides.....	.50
10 gallons ice cream.....	6.00
Film repairer.....	4.00
Lever for automatic shutter.....	.50
Intermittent roller bracket.....	1.00
Upper film shield for machine.....	.50
Lower film shield for machine.....	1.50
Film cement.....	.50
Parts Nos. 604, 619, 704 for machine and slides.....	9.00
Friction case core for shutter.....	2.00
Link for automatic shutter.....	.50
Counterweight for shutter.....	.15
Four springs for governor.....	.60
5,000 needles for Victrolas.....	5.00
Roller bracket.....	1.00
Screws for fire shield.....	.10
Part No. 707 for machine.....	.10
Part No. 708 for machine.....	1.50
Decorations for Christmas tree.....	1.75
Refreshments for New Year's.....	2.00
Coach and car fare for exchange of reels.....	7.15
<b>Total.....</b>	<b>\$233.20</b>

Balance on hand, January 1, 1916..... \$ 95.80

Jos. N. PARROTT,  
Superintendent.

## WEATHER CONDITIONS, CANAL ZONE, DECEMBER, 1915.

The rainfall for the month of December, 1915, was generally deficient, only a few stations having a rainfall in excess of the station averages. Totals ranged from 2.81 inches at the Indio station on the upper Chagres, to 10.16 inches at Monte Lirio. The maximum amount of rainfall recorded on any one day was 3.72 inches, at Gamboa on December 7. Heavy showers occurred at a number of stations on the 1st, 2nd, 3rd, and 7th of the month.

The estimated rainfall over the Gatun Lake watershed was 27 per cent below the normal, and over the Chagres River basin above Alhajuela, 46 per cent below normal, the normal in each case being for a period of 15 years.

The air temperature at Balboa Heights was approximately normal, while at Colon it was over one degree Fahrenheit above the average. The atmospheric pressure and temperature of the sea water were above normal on both coasts, while the relative humidity and daytime cloudiness were above normal on the Pacific side, and approximately normal on the Atlantic coast. The wind movement was near the average, and the evaporation exceeded the station averages on both coasts, but was slightly deficient over the lake surface at Gatun.

No fogs were observed during the month on either coast, but several fogs occurred at interior stations, 61 per cent of which were dissipated by 6.30 a. m., 94 per cent by 7.30 a. m., and all lifted or were dissipated by 8 a. m.

Elevations of Gatun Lake, in feet above mean sealevel, were as follows: Mean for the month, 86.12; maximum, on the 30th, 86.54; minimum, on the 1st, 85.69; evaporation from the lake surface, 4.656 inches.

Following is a summary of the climatological conditions at the Atlantic and Pacific coast stations during December:

STATIONS.	Pressure (reduced to mean of 24 hours).	Temperature.						Precipitation.				Wind.			
		Mean.	Maximum.	Date.	Minimum.	Date.	Mean relative humidity.	Total inches.	Station average.	Days of 01 inch or more.	Total movement (miles).	Prevailing direction.	Max. velocity in miles.	Direction.	Date.
Colon.....	29.860	80.8	87	Dec. 21	73	Dec. 3	86	9.45	12.04	18	8,382	N.	31	N. E.	Dec. 31
*Balboa Heights...	29.849	80.1	90	Dec. 30	70	Dec. 8	91	3.59	4.40	15	5,328	N. W.	24	N. W.	Dec. 22

\*Formerly Ancon.

#### Rainfall from December 1 to 31, 1915, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>	<b>Ins.</b>		<b>Ins.</b>
Balboa.....	1.67	2	4.48
Balboa Heights.....	1.40	2	3.59
Miraflores.....	2.15	2	5.13
Pedro Miguel.....	1.10	2	3.62
Rio Grande.....	1.80	7	6.14
<b>Central Section—</b>			
Culebra.....	1.86	7	5.14
*Camacho.....	2.05	7	4.51
Empire.....	1.84	7	4.67
Gamboa.....	3.72	7	7.00
*Juan Mina.....	2.09	8	7.42
Alhajuela.....	1.94	7	5.87
*Vigia.....	1.05	7	3.44
Frijoles.....	1.57	2	6.68
Trinidad.....	1.97	3	8.12
Colon.....	2.20	1	10.16
<b>Atlantic Section—</b>			
Gatun.....	2.74	3	7.23
*Brazos Brook.....	2.45	3	8.84
Colon.....	3.48	2	9.45
*Bocas del Toro.....	1.26	14	5.92

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values, midnight to midnight

\*Standard rain gage—readings at 8 a. m. daily.

#### December Rainfall for Three Years.

STATIONS.	1913	1914	1915	Station average.	Years of record.	Rainy days, 1915.
<b>Pacific Section—</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>	<b>Ins.</b>		
Balboa.....	3.72	7.41	4.48	5.84	17	14
Balboa Heights.....	4.84	8.28	3.59	4.40	19	15
Miraflores.....	4.35	7.42	5.13	7.22	8	17
Pedro Miguel.....	2.14	6.26	3.62	6.12	8	14
Rio Grande.....	1.59	5.87	6.14	5.53	11	9
<b>Central Section—</b>						
Culebra.....	1.50	4.25	5.14	7.24	26	19
*Camacho.....	1.98	5.38	4.51	5.84	10	14
Empire.....	2.03	4.44	4.67	5.11	12	20
Gamboa.....	1.82	6.15	7.00	6.79	33	17
*Juan Mina.....	1.62	2.90	7.42	5.20	6	18
Alhajuela.....	1.59	2.25	5.87	6.40	17	13
*Vigia.....	1.03	8.53	3.44	5.32	8	14
Frijoles.....	4.7	6.94	6.68	6.00	4	*19
Trinidad.....	4.12	5.61	8.42	9.28	8	19
*Monte Lirio.....	7.19	5.02	10.16	9.88	9	10
<b>Atlantic Section—</b>						
Gatun.....	8.06	4.62	7.23	11.54	11	19
*Brazos Brook.....	12.52	5.17	8.84	12.58	10	19
Colon.....	6.55	8.88	9.45	12.04	45	18

\*Believed to be correct; exact records not available.

#### Deceased Employees.

Name.	Check No.	Native of	Isthmian Residence.	Employed by	Date of death
Daly, Antonio.....	22140	Jamaica.....	Panama.....	Health Dept.....	Jan. 4, 1916.
Jones, Geo.....	26669	Barbados.....	Panama.....	Mechanical Div.....	Jan. 8, 1916
Randal (Randen), Carlos.....	21615	Panama.....	Panama.....	Dredging Div.....	Jan. 5, 1916.

The estates of the abovementioned deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## RECEIPTS AND EXPENSES.

## Continued Closure of Canal Increases Fiscal Year Deficit to \$1,285,879.62.

As the Canal continued closed throughout the month of November, as through October, there were no collections of tolls on vessels making use of the waterway and the month was a dead loss as far as revenues from this source are concerned. This was the second month since May, 1914, in which no tolls were collected. The tolls levied on barge traffic prior to the opening of the Canal on August 15, 1914, amounted to \$11,610.69, in the months of May, June, July, and the first half of August. Tolls collected from August 15, 1914, to October 1, 1915, amounted to \$5,754,673.29.

The tolls earned during the present fiscal year have been, as follows: July, \$573,365.67; August, \$496,792.03; September, \$349,498.30, a total of \$1,419,656.00. During the current fiscal year, to December 1, the expenditures charged to operation and maintenance amounted to \$2,705,535.62, making a deficit for the fiscal year in this account of \$1,285,879.62. Up to September the aggregate revenues from tolls exceeded the cost of operation and maintenance, though there was a loss in August, July being the only month of the current fiscal year to have shown a profit, which amounted to \$117,570.09. August, September, October, and November showed steadily increasing losses. Tolls diminished, and finally vanished, while the cost of operation and maintenance has risen.

The increasing cost of operation and maintenance has been due primarily to the dredging operations in Gaillard Cut. All of the work at the bases of the Culebra slides, which have been obstructing traffic, is charged to operation and maintenance because there was once a clear channel there. Such work as has been done at Cucaracha slide has not been charged to operation and maintenance, but to construction, because the channel was not finished there at the time ships were allowed to begin using the Canal. The dredging costs in Gaillard Cut amounted to \$334,656.53 in November, as compared with \$273,999.23 in October, \$259,604.07 in September, and \$256,593.47 in August. A summary of the costs during the month follows:

ITEMS.	November	October.	November 1914.	Fiscal Year to Date.	
				This year.	Last year.
<b>Marine Division:</b>					
Admeasurement of vessels.....	\$407.48	\$853.16	\$1,169.10	\$4,260.49	\$3,869.47
Local inspection.....	537.57	303.28	315.71	1,642.91	1,478.54
Aids to navigation.....	7,440.30	4,135.86	2,795.11	23,106.43	18,280.97
Flotage.....	.....	554.00	6,199.37	20,267.32	15,885.70
Operation of harbor tugs, balance.....	3,292.75	3,631.70	.....	16,248.06	.....
Total, Marine Division.....	11,678.20	9,478.00	10,479.29	65,525.21	39,514.68
<b>Lock operation and maintenance:</b>					
<b>Gatun Locks—</b>					
Superintendence.....	1,302.37	928.23	1,526.63	5,696.17	7,392.18
Operation.....	6,074.99	8,500.25	7,795.59	43,975.36	40,929.93
Maintenance of machinery and equipment.....	7,796.61	32,573.72	5,292.16	100,079.06	25,341.98
Maintenance of structures.....	1,413.91	1,386.22	2,807.36	4,550.71	9,761.73
Miscellaneous supplies and expenses.....	154.84	212.30	191.75	1,086.45	1,334.86
Total, Gatun Locks.....	16,742.72	43,600.72	17,613.49	155,387.75	84,760.68
<b>Gatun Spillway—</b>					
Operation.....	115.19	170.14	62.67	565.59	581.82
Maintenance of machinery and equipment.....	229.40	795.22	57.82	1,190.99	1,715.71
Maintenance of structures.....	.....	19.44	184.09	104.52	614.94
Total, Gatun Spillway.....	344.59	984.80	304.58	1,861.10	2,912.47
<b>Pedro Miguel Lock—</b>					
Superintendence.....	1,404.53	1,302.97	1,210.21	7,182.63	5,180.60
Operation.....	2,732.92	3,403.60	6,003.91	24,851.32	37,299.79
Maintenance of machinery and equipment.....	6,042.13	6,879.23	4,876.54	27,054.45	14,945.40
Maintenance of structures.....	1,542.11	1,959.16	2,435.37	8,288.13	4,562.10
Miscellaneous supplies and expenses.....	174.31	176.66	135.49	1,017.43	706.10
Total, Pedro Miguel Lock.....	11,897.00	13,721.62	14,661.52	68,393.96	62,686.99
<b>Pedro Miguel Dam, maintenance.....</b>	.....	.....	42.00	.....	42.00
<b>Miraflores Locks—</b>					
Superintendence.....	1,320.65	1,104.93	1,396.06	6,888.03	6,392.97
Operation.....	3,345.41	4,665.48	9,464.93	31,081.69	46,349.90
Maintenance of machinery and equipment.....	5,166.71	7,584.93	2,493.74	25,351.91	18,030.59
Maintenance of structures.....	1,160.77	720.04	2,193.38	5,213.86	6,416.65
Miscellaneous supplies and expenses.....	209.76	222.30	214.68	1,218.20	1,283.71
Total, Miraflores Locks.....	11,263.30	14,297.68	15,762.79	69,753.69	78,473.82
<b>Miraflores Spillway and East Dam—</b>					
Operation.....	6.97	.....	.....	53.06	634.95
Maintenance of machinery and equipment.....	325.08	93.97	37.01	602.41	6,940.18
Maintenance of structures.....	184.05	43.18	20.60	319.33	147.90
Total, Miraflores Spillway and East Dam.....	516.10	137.15	57.61	974.80	7,723.03
<b>Miraflores West Dam, maintenance.....</b>	30.80	31.17	279.29	269.95	377.17
Total, lock operation and maintenance.....	40,794.51	72,773.14	48,721.28	296,641.25	236,976.16
<b>Dredging:</b>					
Atlantic entrance.....	624.22	547.88	4,641.93	5,404.66	39,594.40
Gatun Lake.....	334,656.53	273,999.23	177,410.16	1,306,722.87	454,270.37
Gaillard Cut.....	.....	.....	3,727.14	9,286.43	4,973.05
Miraflores Lake.....	.....	.....	.....	.....	.....
Pacific entrance.....	.....	.....	.....	.....	.....
Total, dredging.....	335,280.75	274,547.11	185,779.23	1,321,413.96	498,837.82
<b>Gatun Dam, maintenance.....</b>	1,723.05	1,948.49	1,326.61	10,083.71	7,381.01
Removal of floating obstructions.....	1,683.91	2,017.95	878.58	8,613.04	5,136.55
Gatun-Mirindi Lake, maintenance.....	237.98	.....	161.23	237.98	22,200.73
West Breakwater, Colon, maintenance.....	17,495.78	7,594.51	.....	25,273.15	.....
East Breakwater, Colon, maintenance.....	.....	.....	.....	.....	.....
Naos Island Breakwater, maintenance.....	.....	29.20	6.39	88.45	456.27
Damages to vessels in locks.....	125.10	445.33	43.70	1,328.64	73.16
Damages to vessels in Canal.....	.....	.....	.....	.....	.....
Operation of floating cranes.....	4,178.62	*3,886.60	.....	4,224.96	.....
Maintenance of transportation tracks.....	1,778.89	2,735.04	2,707.55	7,976.24	8,347.49
Total, operation and maintenance.....	414,976.79	367,682.17	250,103.86	1,741,376.59	818,923.87
<b>Proportion of overhead expenses.....</b>	228,968.42	179,077.66	126,337.09	964,159.03	491,752.37
Total.....	643,945.21	546,759.83	376,440.95	2,705,535.62	1,310,676.24
<b>Revenues, tolls.....</b>	.....	.....	369,161.28	1,419,656.00	1,097,548.76
<b>Tolls earned in excess of expenses.....</b>	.....	.....	.....	.....	.....
<b>Expenses in excess of tolls earned.....</b>	643,945.21	546,759.83	7,279.67	1,285,879.62	215,127.48

\*Credit.



## CRISTOBAL COALING PLANT.

Progress of Erection of Coal Handling Machinery.—End Wharf Completed.

Following the preliminary tests on the first of the four unloader towers of the permanent coaling plant at Cristobal, the contractor is making the adjustments and alterations on the three other towers which the operating tests have showed to be desirable. These adjustments, though rather extensive, are such as are to be expected in the assembly of a machine as large and complicated as the unloaders, which are also capable of reloading coal into vessels from the stock pile. The principal cause of delay in the completion of the towers has been trouble with the valves. As soon as the contractor shall have finished the unloaders, the final tests will be made. If these are satisfactory the plant can be placed in partial service, prior to the completion of the regular reloader towers.

The main frames of all four reloader towers, on the opposite side of the plant from the unloaders, have been erected and the erection of the booms and machinery is in progress.

The erection of the two stocking and reclaiming bridges, spanning the storage spaces, is practically completed. One of the bridges, No. 1, was moved under its own power on Wednesday, January 5. On account of interferences it could not be moved very far, but the operation was generally satisfactory. The bridge weighs 1,200 tons and is propelled by electric motors. It has a span of 315 feet between the parallel tracks on which its trucks move, and an extreme height of 63.7 feet.

Forty-six of the 88 hopper cars which will carry the coal on the overhead viaduct have been practically completed. A preliminary test on one of the cars was made on December 27. The car was not loaded with coal, but the action of its propelling motors, dumping and braking mechanisms, etc., was satisfactory for an empty car.

The troubles in sinking the final caissons for the foundation for the end wharf, at the north end of the plant, have been overcome and the last section of floor for the wharf was poured on Saturday, January 8. The concrete was supplied from a mixing plant installed on a barge and brought alongside the face of the wharf. The completion of the end wharf will allow the completion of the viaduct, and the erection of the wharf bunkers. The erection of steel in these projects at the end wharf was begun on Monday, January 10.

The surplus coal in the supply brought to the Isthmus for the Panama Railroad is being stored in the dry storage space. The wet storage is reserved for the United States Navy.

### Temporary Connections for Oil Delivery at Cristobal Coaling Plant.

Connections have been completed to a temporary 8-inch oil line on the French canal side of the new permanent coaling plant at Cristobal so that ships may be supplied with oil there as well as with coal. This is in addition to the pipe line with six outlets along the face of Dock 13, which has been the point of transfer of oil up to the present. The permanent installation on the coaling plant contemplates a pipeline running the length of the unloader, end, and reloader wharves, and equipped with 14 outlets. The 10-inch main for supplying this line has been laid across the French canal. It was sunk in a trench excavated across the channel by dredges.

## INSTRUCTION IN FIRST AID.

Canal Zone Chapter of Red Cross Is Interested in Formation of Classes.

Preparation for instruction in first aid and accident prevention in the Canal Zone are being made by the local chapter of the American Red Cross, and it is expected that the work will be more extensive this year than last, which was the first time that the chapter had conducted classes on the Isthmus. It is hoped that classes will be formed among the police and the firemen, the railway and shop employees, the women in the various communities, the Boy Scouts, and the Camp Fire girls. The work is wholly voluntary. Classes will be conducted in the regular manner prescribed by the Red Cross, and a first aid certificate will be given to all who complete the course successfully. Details regarding the formation of classes are given in the following excerpts from a circular issued by the first aid department of the Red Cross:

Persons desiring to organize a class should secure a sufficient number of members—not less than four or more than 25—electing one to act as class president. Upon application a roll will be sent from the first aid department, Bureau of Medical Service, American Red Cross, Washington, D. C. All instructors must be duly qualified medical practitioners and their names must be submitted to the first aid department, American Red Cross, for approval, which, when the credentials of the physicians have been found to be satisfactory, will be given in the form of an authorization card. First aid classes must be examined by a physician other than the one who gave the instruction to the class.

In order that there may be no delay, as soon as practicable the class president should forward the name of the examiner to the first aid department, for approval, as in the case of the instructor, when a card of authorization will be issued.

### COURSE OF INSTRUCTION.

No course of instruction will consist of less than 10 meetings of about one and a half hours each. No person will be eligible for examination unless he has attended 80 per cent of the lectures and demonstrations. As soon as an instructor is appointed he will be supplied with a complimentary copy of the Red Cross first aid text book. This he will be expected to follow. It is also urged that each instructor dwell on the prevention of accidents and, whenever practicable, an expert should be secured to demonstrate prevention of the accidents most apt to occur to the members of the class under instruction by reason of their occupation or living conditions in the community. At least one period of the course should always be devoted to this subject.

### MATERIALS NEEDED.

The class president, or secretary, acting for the class, should supply pens, ink, pencils, and paper for the examination when it takes place, and for use in the instruction a good supply of bandages, splints, stretchers, and charts, etc. Stretchers are not required for women's classes.

While it is not obligatory, it is recommended that each member of a class obtain a copy of the Red Cross first aid text book. There are different editions to meet the requirements of class members according to occupation. However, the industrial edition is the most generally useful book for workmen, and the general edition for the public at large. In addition, the class should own a set of anatomical charts (set of five) and a Red Cross first aid "instruction outfit." These materials are listed in the catalogue of first aid supplies kept on hand in this department. Where several classes are in the same locality or are organized under a Red Cross chapter, of course the charts, instruction outfits, etc., may be used in common by the several classes at different hours. A meeting place for the class must also be provided.

### EXAMINATIONS, CERTIFICATES, AND FEES.

When the class president is informed by the instructor that the class is ready for examination, the first aid department should be notified to that effect and the examination form with full instructions will be sent to the physician who has been authorized to examine the class. The fee for the examination will be 50 cents per person examined. This sum is used to cover the cost of certificates, printing of examination form, postage, etc. The proper amount must accompany the application for the examination. Upon completion of the examination, papers will be forwarded by the examiner to the first aid department, which will then grant and forward certificates to all successful candidates without further charge.

No candidate who is unable to pass the practical part of the examination shall receive a certificate.

No candidate who has failed to pass an examination shall be eligible for a certificate until he or she has attended another first aid course.

While any person may undergo the instruction in first aid, no Red Cross certificate will be issued to anyone who is under 16 years of age.

The fee of the instructor and the examiner must be arranged for by the class.

All these regulations regarding organization of classes, their instruction, examination, etc., apply to women as well as to men.

If it should suit the convenience of any class, the Red Cross will supply books, charts, instruction outfits, and pay the examiner's fee upon receipt of \$2 for each member of the class, provided the number in the class is not less than 10. Under these circumstances the money must be enclosed when the class roll is forwarded to the first aid department by the class president. The fee of the instructor, however, must be met by the class in any case.

### ADVANCED COURSE AND MEDAL.

Advanced first aid courses may be taken by individuals who have held American Red Cross first aid certificates for at least six months. They can not, however, be conducted in the same calendar year in which the certificates have been granted. The services of a doctor should be obtained to give the instruction for the advanced course, although in exceptional cases "home instruction" will be accepted. The same text book is used as in the first course, but the examination is made more difficult and will be restricted to principal work only. The expense for the advanced examination will be \$1 per person. It is recommended that the same instructor and examiner who officiated for the original course be obtained to conduct the advanced course examination. If this is not practicable, both the instructor and the examiner must be nominated and authorized, following the method indicated for ordinary classes. Medals will be awarded successful candidates.

Persons interested in the formation of classes may take the matter up with the secretary of the local chapter of the Red Cross, Mr. C. M. Lupfer, Balboa Heights.

### Milk Should Be Boiled or Pasteurized.

The Health Department suggests that all persons who are using milk from the Corozal Hospital dairy place their bottles on ice immediately after delivery; and that the milk be boiled or pasteurized at the earliest opportunity. The milk is handled at the dairy with all feasible cleanliness, but as has been stated in a bulletin of the hygienic laboratory of the Public Health and Marine Hospital Service, "Of all foodstuffs, milk is the most difficult to preserve pure and handle with success. It requires not only intelligence, but a high degree of technical training, as well as incessant vigilance, to produce a clean and safe milk. \* \* \* We can scarcely conceive of any system of surveillance of the milk supply that will prevent its occasional contamination."

Pasteurization is to be preferred to boiling, for the reason that it accomplishes the same desired end of destroying the pathogenic micro-organisms without injuriously affecting the composition of the milk or its quality and without sensibly hurting its food value, while boiling gives the milk a cooked taste and produces pronounced internal changes which are open to objection. Pasteurization consists essentially of immersing the container of the milk in water maintained at a temperature of 142° to 145° Fahrenheit for 20 minutes, followed by rapid chilling to 50° F. Detailed instructions for the pasteurization of milk in the home may be obtained from district physicians or on application, by mail, to the Chief Health Officer, Balboa Heights.

The committee from the National Academy of Sciences, which arrived on the Isthmus on December 19 to make a study of the Canal slides, has returned to the United States.



## OFFICIAL CIRCULARS.

## Operation of Handcars on Panama Railroad Tracks.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., December 30, 1915.

CIRCULAR No. 667-1.

After January 16, 1916, no handcar may be operated on the Panama Railroad tracks unless in charge of an authorized white employe with a card permit, as follows:

## HAND CAR PERMIT No. ....

Name .....  
Check No. .... Dept. ....  
Division .....  
Approved .....  
Head of Dept. or Div.

Supt., Panama R. R. Co.

GEO. W. GOETHALS,  
Governor, The Panama Canal,  
President, The Panama Railroad Company.

## Storage of Automobiles and Motorcycles.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., January 4, 1916.

CIRCULAR No. 693-1 (superseding circular No. 693).

Circular No. 693, dated December 10, 1914, is hereby revoked, and effective this date, the following regulations will govern the storage of automobiles and motorcycles:

1. Automobiles shall not be housed under buildings used as quarters, nor shall automobiles or motorcycles be stored in wooden buildings located within 40 feet of other wooden buildings.

2. Employes occupying Government quarters and owning motorcycles, who desire to house same underneath quarters, may be permitted to do so, provided:

a. That the number of machines so housed shall not exceed one for each family occupying the building.

b. That the height of the lower floor above the ground where machines are stored shall be not less than five feet.

c. That the underneath part of the floor directly over the place where the machine is to be housed shall be sheathed with roofing iron or other suitable metal sheathing.

d. That a metal-lined box be provided for each machine, for the storage of gasoline, lubricating oil, waste, etc. The amount of gasoline for each machine stored shall not exceed five gallons.

3. In sheds or garages built of frame material, for storage of automobiles and motorcycles, and located within townsites, the maximum quantity of gasoline authorized for storage therein is limited to 100 gallons; except that in community garages the maximum amount is limited to 10 gallons to a stall, irrespective of the number of machines occupying a stall.

4. Garages and stalls must be kept clean at all times, and not used for storage of material and supplies other than accessories for automobiles and motorcycles. Only waste must not be permitted to accumulate.

5. Locations of garages, as well as housing facilities underneath buildings, must be approved by the district quartermaster and a representative of the Police and Fire Division.

6. Any garages allowed to be constructed by employes under the conditions as mentioned above will be constructed with the understanding that should the Government require the space on which these garages are built, or for any other reason require their removal, the owner will be required to remove same at his own expense, and such removal will form no basis for claim against the Government.

GEO. W. GOETHALS,  
Governor.

## Vacations.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., January 4, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

The desirability of making up a schedule of leaves of absence for the employes in the various units of the organization is hereby brought to your attention.

Each employe should be permitted to nominate three dates, as widely separated as he finds convenient, for entering upon his leave. The schedule should then be arranged so that the employes in the same class of

work, who will have to relieve each other, shall be given preference according to seniority as far as possible.

GEO. W. GOETHALS,  
Governor.

## Reports of Transfers of Rolling Stock.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., January 6, 1916.

CIRCULAR No. 113:

To all concerned—Effective at once, form PC-923, "Monthly report of rolling stock," will be discontinued, and form A-346, "Report of transfers of rolling stock," used instead. The Superintendent of the Panama Railroad and heads of departments of The Panama Canal will submit to the Auditor a monthly report in quadruplicate on form A-346, showing rolling stock added or transferred and such other information as is required on form.

A supply of form A-346 may be requisitioned through the storekeeper, stationery storeroom, Administration Building, Balboa Heights.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
GEO. W. GOETHALS,  
Governor.

## Rates for Service of Locomotive Engines.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., January 1, 1916.

CIRCULAR No. 692-1:

Effective January 1, 1916, the following rates will be charged for service of locomotive cranes, including engineer, firemen, and the cost of coal, oil, waste, and repairs:

Between departments and divisions of The Panama Canal and the Panama Railroad, per hour, \$2.00; for individuals and companies, per hour, \$2.50.

GEO. W. GOETHALS,  
Governor.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., January 4, 1916.

CIRCULAR No. 112:

Effective January 10, 1916, Mr. R. H. Whitehead is designated an accountable official of The Panama Canal, vice Mr. F. C. Clark, resigned, and as such will account for all nonexpendable property in use at Pacific locks.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
GEO. W. GOETHALS,  
Governor.

## Acting Officials at Pacific Locks.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,  
BALBOA HEIGHTS, C. Z., January 8, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective January 10, and during the absence of Mr. F. C. Clark on leave, the duties of superintendent, Pacific locks, will be performed by Mr. R. H. Whitehead; those of assistant superintendent, Pacific locks, by Mr. W. R. Holloway; and those of electrical supervisor, Pacific locks, by Mr. Geo. B. Welch.

JAY L. MORROW,  
Acting Engineer of Maintenance.

Approved:  
GEO. W. GOETHALS,  
Governor.

## Scrap Metal in Demand.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., January 5, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

Copper is now selling at around 22 cents per pound in New York, and all other metals have gone up proportionately. In order to take advantage of these high prices, it is requested that you have all scrap metals available shipped to the Obsolete Storekeeper, Mount Hope, at the earliest opportunity.

WM. R. GROVE,  
Chief Quartermaster.

## Small Lots of Scrap.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., January 5, 1916.

All storekeepers and district quartermasters—All Supply Department storekeepers and all district quartermasters at points where there are no storekeepers will receive from and receipt to accountable officials,

for small lots of scrap, and when a sufficient amount has accumulated, will make shipments of same to the obsolete store.

Care should be exercised in handling items of non-expendable property turned in as scrap, to see that same is not taken by unauthorized persons.

WM. R. GROVE,  
Chief Quartermaster.

## Commercial Agent for Panama Railroad and Panama Railroad Steamship Line.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT.

BALBOA HEIGHTS, C. Z., January 7, 1916.  
To all concerned—Effective this date, Mr. E. G. Booth, Jr., resumes the duties of commercial agent for the Panama Railroad and Panama Railroad Steamship Line, with office in the passenger station at Panama.  
C. H. MOTSETT,  
Superintendent.

## Telephone Directory.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,  
BALBOA HEIGHTS, C. Z., January 10, 1916.  
HEADS OF DEPARTMENTS AND DIVISIONS:

You are respectfully requested to send to this office any changes that you desire made in the new edition of the telephone directory that will be ready for issue on or about February 1, 1916. This is necessary owing to changes in the personnel of the several departments and divisions of The Panama Canal. By checking the directory carefully, as concerns your department directly, omissions and additions can be easily noted. Any suggestion that you desire to make concerning the arrangement of the directory would be gladly welcomed and considered.

Please give the above your immediate attention.

W. H. ROSE,  
Electrical Engineer.

## COMMISSARY DEPARTMENT.

## Reductions in Prices of Meat, Wholesale.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., January 4, 1916.

BULLETIN No. 532:

To commissary managers—Effective Thursday, January 6, 1916, the following price changes will be made in wholesale cold storage list No. 207:

Item 20, Pig carcasses, per lb., 16 to 14 cents.

Item 21, Pork, entire loins, 21 to 16 cents.

Please correct all copies of list now in your possession.  
BENJ. L. JACOBSON,  
Deputy Commissary.

## Measuring Mileage Style Coupons with a Brass Scale.

The coupon clerk at the cashier's desk of the Canal hotel at Paraiso uses a calibrated brass rule to measure the amount of coupons to be torn from the new mileage form commissary books. The scale is marked with parallel lines made at intervals corresponding with the width of the coupons, and the quantity to be taken out is measured by placing the end of the strip at zero on the scale and laying the strip alongside the calibration. The device has been found to be accurate and expeditions.

## Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective January 13 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions will be effective January 13, 1916:

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.		Price.
Beef suet, special, per lb.	\$.03	1
Beef suet, native, per lb.	\$.03	1
Soup beef, special, per lb.	\$.07	1
Soup beef, native, per lb.	\$.07	1
Soup bone, special, per lb.	\$.02	1
Soup bone, native, per lb.	\$.02	1
Stew beef, special, per lb.	\$.11	1
Stew beef, native, per lb.	\$.11	1
Plate beef, special, per lb.	\$.08	1
Plate beef, native, per lb.	\$.08	1
Chuck roast (3 lbs. up), special, per lb.	\$.12	1
Chuck roast (3 lbs. up), native, per lb.	\$.12	1
Rib roast, 2d cut (3 1/2 lbs. up), special, per lb.	\$.16	1
Rib roast, 2d cut (3 1/2 lbs. up), native, per lb.	\$.09	1
Rib roast, 1st cut (3 lbs. up), special, per lb.	\$.11	1
Rib roast, 1st cut (3 lbs. up), native, per lb.	\$.11	1
Pot roast, special, per lb.	\$.20	1
Pot roast, native, per lb.	\$.12	1
Rump roast, special, per lb.	\$.20	1
Rump roast, native, per lb.	\$.12	1
Porterhouse steak, choice, per lb.	\$.31	1
Porterhouse steak, special, per lb.	\$.22	1
Porterhouse steak, native, per lb.	\$.16	1
Chuck steak, special, per lb.	\$.09	1
Chuck steak, native, per lb.	\$.09	1
Round steak, bottom, special, per lb.	\$.13	1
Round steak, bottom, native, per lb.	\$.09	1
Round steak, top, special, per lb.	\$.15	1
Round steak, top, native, per lb.	\$.10	1
Sirloin steak, special, per lb.	\$.20	1
Sirloin steak, native, per lb.	\$.12	1
Sirloin steak, choice cut, special, per lb.	\$.20	1
Sirloin steak, choice cut, native, per lb.	\$.16	1
Rump steak, special, per lb.	\$.12	1
Rump steak, native, per lb.	\$.12	1
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	\$.34	1
Porterhouse steak (1 1/2 lbs. up), native, per lb.	\$.28	1
Porterhouse steak, short, choice, per lb.	\$.17	1
Porterhouse steak, short, native, per lb.	\$.12	1
Porterhouse steak, short, native, per lb.	\$.12	1
Tenderloin steak, special, per lb.	\$.35	1
Tenderloin steak, native, per lb.	\$.25	1
FRESH MEATS.		
Lamb, chops, per lb.	\$.29	1
Lamb, chops, shoulder, per lb.	\$.20	1
Lamb, legs, 5 to 8 lbs., per lb.	\$.15	1
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	\$.24	1
Lamb, stewing, per lb.	\$.12	1
Mutton chops, shoulder, per lb.	\$.12	1
Mutton chops, shoulder, per lb.	\$.12	1
Mutton, leg, 8 to 10 lbs., per lb.	\$.19	1
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	\$.12	1
Mutton, stewing, per lb.	\$.12	1
Pork, hams, fresh (see footnote), per lb.	\$.25	1
Pork, loins, chops, or roast, per lb.	\$.19	1
Pork, shoulders, fresh (see footnote), per lb.	\$.20	1
Veal, chops, per lb.	\$.40	1
Veal, chops, shoulder, per lb.	\$.27	1
Veal, cutlets, per lb.	\$.45	1
Veal, loin for roasting, per lb.	\$.05	1
Veal, shoulder for roasting not under 4 lbs., per lb.	\$.16	1
Veal, stewing, per lb.	\$.16	1
MISCELLANEOUS.		
Brains, calves', per lb.	\$.07	1
Calves' heads, ea.	\$.86	1
Kidneys, beef, per lb.	\$.12	1
Livers, calves', per lb.	\$.29	1
Pates de foie gras, jar.	\$.67	1
Pigs' feet, fresh, per lb.	\$.05	1
Pigs' head, fresh, whole, ea.	\$.42	1
Pigs' heads, fresh, 1 head, half.	\$.42	1
Sausage, bologna, per lb.	\$.19	1
Sausage, frankfurter, per lb.	\$.19	1
Sausage, hibernian, per lb.	\$.19	1
Sausage, pork, per lb.	\$.23	1
Sausage, pork, homemade, per lb.	\$.24	1
Sausage, Salami, per lb.	\$.38	1
Sausage ribs, pork, per lb.	\$.13	1
Steak, hamburger, pkg.	\$.17	1
Steak, hamburger, 20-pound container, per lb.	\$.14	1
Sweetbread, beef, per lb.	\$.21	1
Tongue, beef, native, whole, per lb.	\$.20	1
Yeast, per lb.	\$.31	1
Yeast, cake.	\$.02	1
CURED AND PICKLED MEATS.		
Bacon, breakfast, whole piece, per lb.	\$.30	1
Bacon, breakfast, sliced, per lb.	\$.31	1
Bacon, sliced, tin.	\$.32	1
Bacon, squares, whole square, per lb.	\$.30	1
Bacon, strip, whole, trip.	\$.19	1
Bacon, corned—No. 2, per lb.	\$.13	1
Beef, corned—No. 2, per lb.	\$.12	1
Ham, genuine Westphalia, per lb.	\$.50	1
Ham, minced, "Bologna style", per lb.	\$.21	1
Ham, shoulders, boned, sugar cured, whole shoulder, per lb.	\$.17	1
1. Ham, sugar cured (whole) per lb.	\$.24	1
2. Ham, sugar cured (half) per lb.	\$.27	1
1. Ham, sugar cured, boned (whole) per lb.	\$.32	1
2. Ham, sugar cured, boned (half) per lb.	\$.33	1
3. Ham, sugar cured, boned (sliced) per lb.	\$.41	1
Pigs feet, pickled, per lb.	\$.08	1
Pork, bellies, per lb.	\$.20	1
Pork, clear, per lb.	\$.11	1

Pork, standard mess, per lb.	Price.	1
Tongue, beef, corned native, whole, per lb.	.20	1
Tongue, pigs', per lb.	.22	1
POULTRY AND GAME.		
Broilers, corn fed, per lb.	.31	1
Capers, corn fed, per lb.	.34	1
Cocorns, per lb.	.37	1
Chickens, fancy roasting, corn fed, per lb.	.27	1
Chickens, fancy roasting, milk fed, per lb.	.32	1
Fowls, light, per lb.	.22	1
Fowls, western, dry picked, per lb.	.23	1
Geese, per lb.	.18	1
Grouse, ea.	.60	1
Squabs, ea.	.45	1
Turkeys, per lb.	.2	1
DAIRY PRODUCTS.		
Butter, creamery special, per lb.	.40	1
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.48	1
Butter, Sheffield farms, extra fancy, per lb.	.58	1
Cheese, Edam, ea.	1.50	1
Cheese, Edam, tin.	.39	1
Cheese, gouda, per lb.	.32	1
Cheese, parmesan, per lb.	.39	1
Cheese, Philadelphia cream cake, ea.	.09	1
Cheese, Roquefort, per lb.	.59	1
Cheese, snappy, cake.	.09	1
Cheese, Swiss, per lb.	.43	1
Cheese, young American, per lb.	.43	1
Cream, 30 per cent, 1 pt.	.17	1
Cream, 30 per cent, pt.	.29	1
Cream, 30 per cent, qt.	.52	1
Eggs, fresh, 1 doz. only.	.22	1
For-milac, bottle.	.25	1
Ice cream, (see footnote) 1 gal.	.25	1
Milk, Sheffield farms, qt.	.15	1
Oleomargarine, per lb. ctn.	.29	1
FISH.		
Bluefish, fresh, per lb.	.19	1
Codfish, dried, per lb.	.11	1
Haddock, smoked, per lb.	.11	1
Halibut, fresh, per lb.	.09	1
Herring, smoked, per lb.	.11	1
Oysters, fresh, per qt.	.45	1
Salmon, fresh, per lb.	.11	1
Whitefish, smoked, per lb.	.24	1
VEGETABLES.		
Beans, shelled, fresh, per lb.	.08	1
Beets, per lb.	.02	1
Brussels sprouts, per qt.	.21	1
Cauliflowers, per lb.	.01	1
Carrots, per lb.	.02	1
Cauliflower, per lb.	.19	1
Celery, per head.	.09	1
Corn, each.	.01	1
Corn, green, per doz.	.12	1
Cucumbers, per lb.	.10	1
Lettuce, per lb.	.14	1
Onions, per lb.	.19	1
Parsnips, per lb.	.03	1
Peppers, green, per lb.	.09	1
Plantains, per doz.	.12	1
Potatoes, white, per lb.	.31	1
Squash, per lb.	.03	1
Tomatoes, per lb.	.09	1
Turnips, per lb.	.02	1
Yarus, lucra, per lb.	.03	1
FRUITS, DRIED.		
Apples, evaporated, per lb.	.12	1
Apricots, evaporated, per lb.	.16	1
Currants, cleaned, pkg.	.15	1
Figs, 5-oz. pkg.	.05	1
Figs, dried, 11-oz pkg.	.21	1
Peaches, evaporated, per lb.	.08	1
Pears, evaporated, per lb.	.18	1
Peel, citron, per lb.	.20	1
Peel, lemon, per lb.	.16	1
Pist, orange, per lb.	.16	1
Prunes, stewing, per lb.	.08	1
Raisins, seeded, pkg.	.11	1
Raisins, table cluster, per lb.	.15	1
FRUITS, FRESH.		
Apples, fresh, per lb.	.04	1
Apples, fresh, select, per lb.	.06	1
Bananas, 8 hands and over, per bunch.	.14	1
Bananas, 6 and 7 hands, per bunch.	.28	1
Bananas, ea.	.00	1
Cranberries, per lb.	.11	1
Grapes, Malaga and Tokay, per lb.	.20	1
Grapefruit, select, ea.	.07	1
Lemons, per doz.	.03	1
Oranges, select, ea.	.04	1
Oranges, tropical, doz.	.12	1
Pineapples, ea.	.12	1

Pan fish, per lb.	Price.	.11
Red snapper, per lb.	.11	1
Turtle (wt. 100 to 200 lbs.), per lb.	.07	1
FRUITS.		
Coconuts, dry, ea.	.05	1
Cocorns, water, ea.	.06	1
Pineapples, ea.	.12	1
Sugar cane, ea.	.03	1
Limes, per 100.	.75	1
Plantain, ea.	.01	1
Bread fruit, ea.	.10	1
VEGETABLES.		
Celery, soup, per bunch.	.04	1
Chayotes, ea.	.02	1
Corn, green, doz.	.12	1
Cucumbers, per lb.	.10	1
Egg plant, special, ea.	.03	1
Ginger, per lb.	.05	1
Lettuce, per lb.	.14	1
Mint, per bunch.	.04	1
Okra, ea.	.00	1
Onions, green, per bunch.	.04	1
Parsley, per bunch.	.04	1
Peppers, hot, per doz.	.05	1
Peppers, sweet, ea.	.01	1
Radishes, per bunch.	.04	1
Spinach, per bunch.	.02	1
Roses (Hospital Farm), per doz.	.50	1
* Indicates advance from last list.		
† Indicates reduction from last list.		
Commissary Hours.		
The open hours of the various commissary stores are as follows:		
The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m. and 1.30 to 5.30 p. m.		
The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.		
All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.		
The gold departments of the Cristobal commissary stores open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.		
Price Changes.		
The following changes in prices of articles in stock at the commissary stores became effective January 12:		
ARTICLE.	PRICE CHANGE.	
	Old.	New.
Bedspreads, ea.	\$1.10	\$1.00
Bedspreads, ea.	1.05	.94
Buttons, pearl, doz.	.13	.11
Buttons, pearl, doz.	.22	.19
Cases, pillow, pr.	1.15	1.55
Cases, pillow, pr.	1.35	1.65
Cases, pillow, pr.	1.50	1.75
Doilies, ea.	.36	.41
Drill, yd.	.36	.45
Drill, yd.	.22	.28
Flannel, yd.	.45	.48
Hammocks, ea.	4.00	4.50
Hammocks, ea.	4.85	5.00
Hats, ladies, ea.	.50	.39
Hats, Palm Beach, ea.	.62	.53
Hats, Bangkok, ea.	4.20	4.00
Hose, men's, pr.	.20	.23
Pique, yd.	.24	.27
Presses, racquet, ea.	.60	.74
Ribbon, yd.	.03	.05
Ribbon, yd.	.41	.34
Sets, table, set.	4.15	4.44
Sets, table, set.	4.60	5.50
Sheets, ea.	.50	.57
Skins, chamois, ea.	.31	.27
Towels, ea.	.38	.35
Towels, ea.	.33	.35
Towels, ea.	.34	.35
Umbrellas, ea.	1.50	1.00
Umbrellas, ea.	1.50	1.00
Umbrellas, ea.	2.40	1.50
Umbrellas, ea.	2.80	2.00
Additions to Stock.		
Bedspreads, embroidered, cotton, 90" x 100", ea.	\$2.25	
Bedspreads, embroidered, linen, 90" x 100", ea.	4.95	
Books, note, morocco, with detachable filler, ea.	.21	
Extra fillers for above, ea.	.03	
Combs, horn, ea.	.11	
Cream, dental, Hyolyns, tube	.10	
Inf, indelible, 1-oz. bot.	.03	
Ribbon, No. 3, yd.	.03	
Sheets, hand sewed, linen, 72" x 108", pr.	5.65	
Sheets, hand sewed, linen, 90" x 108", pr.	6.55	
Talcum powder, Quinelos Flores, bot.	.75	
Voile, cord, 36", yd.	.27	
Waists, misses', No. 704, ea.	.47	
Waists, misses', No. 712, ea.	.73	
Women's shoes:		
Tan kid oxford, pr.	3.65	
White canvas oxford, pr.	3.35	
Tan vic blucher oxford, pr.	3.80	
Men's shoes:		
Gun metal oxford, pr.	5.45	
Russia oxford, pr.	5.55	

\* Indicates advance from preceding list.  
 \*\*Indicates five cents allowed for return of bottle.  
 † Indicates reduction from preceding list.  
 Sold only from commissaries, no orders taken for delivery.  
 ‡ Not less than 1/4 ham of 1/2 shoulder or fresh pork will be sold.

#### Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, January 13, 1916:

#### Fish.

Corbina, per lb.	.11
Mackerel, per lb.	.11



## SHIPPING INFORMATION.

## February Weather Probabilities.

During the month of February, 1916, the following weather conditions may be expected at the Canal entrances. Records at Colon and Balboa Heights (formerly Ancon) for the past eight and 10 years respectively, are used in making these predictions:

**Winds**—Fresh, northerly dry season winds will prevail throughout the month. There should be a slight increase in the wind movement as compared with the preceding month. On the Atlantic coast the hourly velocity should average about 15 miles an hour, north and northeast winds prevailing. The maximum velocity for five minutes is not likely to exceed 40 miles an hour, or be as high under normal conditions. However, 39 miles an hour occurred during the "norther" of last February. These storms sometimes reach as far south as the Isthmus during the period from November to April, inclusive.

Over the Pacific coast and the interior, north and northwest winds will prevail, the hourly velocity averaging about 10 miles an hour. A maximum velocity of more than 30 miles an hour is not likely to occur.

**Rain**—No heavy rains may be expected during the month at either Canal entrance, except as mentioned above during the presence of a "norther." Occasional light showers may be expected, under normal conditions, although February is a dry season month. The average February rainfall, for the years of record, is 1.72 inches on the Atlantic coast, and 0.89 inches on the Pacific.

**Fogs**—No fogs are likely to occur during the month at either Canal entrance, but night and early morning fogs may be expected to form occasionally over the interior. Over the Gaillard Cut section of the Canal, the average number of nights with fog is five. Most of these fogs will be light and practically all that occur may be expected to clear away before 8:30 a. m.

**Temperature**—The monthly mean shade air temperature should be about 80° Fahrenheit over both coasts. The temperature on the Pacific coast is not likely to rise higher than 94° F. or fall lower than 65° F., while on the Atlantic side the maximum may not be expected to be above 90° F., or the minimum below 70° F. The mean daily range in temperature is much greater on the Pacific than on the Atlantic coast, and greater in the dry season than in the wet season. The mean daily ranges for the month on the Pacific and Atlantic coasts should be about 19° F. and 7° F., respectively.

**Barometric pressure**—The seal level air pressure is slightly higher during the dry season than during the rainy season, and should average about 29.89 inches. The maximum reading for the month is not likely to exceed 30.05 inches, or the minimum to be lower than 29.70 inches.

**Relative humidity**—The average percentage of moisture in the air (zero for absolute dryness and 100 for complete saturation) should be about 75 on the Pacific coast and 80 on the Atlantic. Owing to the situation of the Pacific coast with respect to the prevailing winds, the range on the Pacific coast is much greater, the humidity varying between 50 and 90 per cent. On the Atlantic coast it varies between 70 and 85 per cent during the month of February.

Storms—No severe general storms are likely

to occur at either Canal entrance during the month, although this is the season of the "northers" and the Isthmus may be affected by one of these storms at any time when one of the anticyclonic areas, which cross the United States at this time of the year, reaches far enough south to disturb the normal air circulation of the tropics. The winds alone are of insufficient force seriously to affect navigation, although they may prove troublesome, but the heavy sea or swell that usually accompanies these storms has at times done considerable damage. No local thunderstorms are likely to occur and generally fair weather may be expected on both coasts. Smooth to moderate seas are likely to be encountered at the Pacific entrance.

**Tides**—Tidal fluctuations need not be considered at the Atlantic entrance.

Panama (Balboa) tide predictions for the remainder of January and the month of February are given below:

## Tide Predictions.

## JANUARY.

DATE.	Time and height of high and low water.			
Wed., Jan. 12.....	3:08	9:14	15:29	21:39
	2.1	13.0	2.6	13.7
Thurs., Jan. 13.....	4:04	10:11	16:24	22:34
	2.5	12.2	2.6	12.9
Fri., Jan. 14.....	5:00	11:15	17:23	23:37
	3.4	11.6	4.2	12.4
Sat., Jan. 15.....	6:01	12:22	18:24	
	4.7	11.4	4.4	4.4
Sun., Jan. 16.....	0:37	7:01	13:23	19:24
	12.2	3.6	11.5	4.4
Mon., Jan. 17.....	1:32	7:57	14:15	20:19
	12.4	3.3	11.9	4.0
Tues., Jan. 18.....	2:20	8:47	15:00	21:07
	12.7	2.7	12.4	3.5
Wed., Jan. 19.....	3:05	9:30	15:41	21:49
	13.1	2.1	12.9	3.9
Thurs., Jan. 20.....	3:53	10:09	16:22	22:27
	13.5	1.6	13.4	2.4
Fri., Jan. 21.....	4:26	10:45	16:59	23:02
	13.8	1.2	13.5	2.0
Sat., Jan. 22.....	5:03	11:19	17:34	23:40
	14.0	1.0	14.2	1.7
Sun., Jan. 23.....	5:41	11:53	18:05	
	14.1	1.0	14.4	
Mon., Jan. 24.....	0:16	6:17	12:28	18:40
	1.7	14.1	1.2	14.6
Tues., Jan. 25.....	0:54	6:54	13:04	19:14
	1.7	13.9	1.6	14.6
Wed., Jan. 26.....	1:34	7:32	13:45	19:51
	1.9	13.6	2.0	14.4
Thurs., Jan. 27.....	2:21	8:15	14:31	20:34
	2.2	13.3	2.5	14.1
Fri., Jan. 28.....	3:14	9:00	15:27	21:20
	2.5	12.8	3.0	13.8
Sat., Jan. 29.....	4:15	10:11	16:31	22:36
	2.7	12.3	3.3	13.5
Sun., Jan. 30.....	5:22	11:20	17:32	23:52
	2.7	12.5	3.4	13.6
Mon., Jan. 31.....	6:32	12:40	18:55	
	2.2	13.0	3.0	

## FEBRUARY.

DATE.	Time and height of high and low water.			
Tues., Feb. 1.....	2:15	7:39	13:46	20:03
	1.1	1.4	13.9	2.1
Wed., Feb. 2.....	2:46	8:38	14:45	21:02
	1.4	1.8	14.0	2.0
Thurs., Feb. 3.....	3:05	9:31	15:40	21:54
	1.5	-0.5	15.9	0.1
Fri., Feb. 4.....	3:58	10:19	16:31	22:41
	16.0	1.1	16.5	-0.5
Sat., Feb. 5.....	4:50	11:03	17:19	23:27
	16.3	-1.4	16.8	-0.7
Sun., Feb. 6.....	5:39	11:47	18:05	
	16.2	-1.1	17.8	0.0
Mon., Feb. 7.....	0:11	6:25	12:29	18:47
	-0.5	15.8	-0.4	16.3
Tues., Feb. 8.....	0:55	7:08	13:14	19:29
	0.1	15.1	16.5	15.8
Wed., Feb. 9.....	1:41	7:53	14:00	20:10
	1.0	14.1	1.7	14.5
Thurs., Feb. 10.....	2:28	8:35	14:48	20:54
	2.1	13.0	1.9	14.0
Fri., Feb. 11.....	3:20	9:23	15:42	21:44
	3.1	12.0	4.0	12.4
Sat., Feb. 12.....	4:17	10:24	16:42	22:39
	3.9	11.1	4.2	11.7
Sun., Feb. 13.....	5:21	11:30	17:49	
	4.3	10.9	5.1	
Mon., Feb. 14.....	0:03	6:17	12:53	18:55
	4.1	4.5	11.0	4.4
Tues., Feb. 15.....	1:06	7:29	13:50	19:54
	11.8	3.9	11.6	4.4
Wed., Feb. 16.....	1:59	8:21	14:56	20:44
	12.3	3.1	12.3	3.6

## DATE. Time and height of high and low water.

Thurs., Feb. 17.....	2:42	9:05	15:16	21:27
	12.9	2.3	15.2	2.7
Fri., Feb. 18.....	3:23	9:44	15:53	22:04
	13.5	1.6	13.8	1.9
Sat., Feb. 19.....	4:02	10:19	16:27	22:40
	14.1	1.0	14.4	1.2
Sun., Feb. 20.....	4:39	10:53	17:02	23:15
	14.5	0.6	14.9	0.8
Mon., Feb. 21.....	5:15	11:27	17:36	23:50
	14.7	0.3	15.2	0.6
Tues., Feb. 22.....	5:52	12:01	18:10	
	14.8	0.7	15.4	
Wed., Feb. 23.....	0:27	6:30	12:38	18:45
	0.7	14.1	1.0	13.2
Thurs., Feb. 24.....	1:07	7:09	13:09	19:24
	1.0	14.3	1.5	15.0
Fri., Feb. 25.....	1:53	7:52	14:07	20:10
	1.5	13.8	1.2	14.4
Sat., Feb. 26.....	2:47	8:44	15:05	21:05
	2.1	13.1	3.0	13.7
Sun., Feb. 27.....	3:51	9:50	16:13	22:17
	2.7	12.6	3.5	13.2
Mon., Feb. 28.....	5:02	11:11	17:28	23:40
	2.8	12.5	3.6	13.2
Tues., Feb. 29.....	6:15	12:30	18:44	
	2.5	13.0	3.1	

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is the Greenwich Standard for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Rainfall from January 1 to 8, 1916, Inclusive.

Pacific Section—	Ins.	Date.	Ins.
Balboa.....	.31	4	.47
Balboa Heights.....	.29	4	.49
Miraflores.....	.22	6	.23
Pedro Miguel.....	.12	6	.12
Rio Grande.....	.12	3	.12
Central Section—			
Culebra.....	.04	3	.04
*Camacho.....	.03	3	.03
Empire.....	.01	3	.01
Gambou.....	.03	5	.03
*Juan Mina.....	.02	5	.03
Athajuela.....	.02	5	.02
*Vigia.....	.02	5	.02
*Frijoles.....	.00		
*Trinidad.....	.10	3	.10
*Monte Lirio.....	.10	3	.10
Atlantic Section—			
Gatun.....	.06	1	.11
*Brazos Brook.....	.09	8	.09
Colon.....	.10	8	.11
*Bocas del Toro.....	3.21	5	8.50

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values, midnight to midnight.

†Standard rain gage—readings at 8 a. m. daily.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., January 11, 1916.  
The following insufficiently addressed letters and packages have been received at the office of the Director of Posts and may be procured upon request of the addressee:

†Blackburn, Mrs. Z.	Jones, Mrs. Wm. A.
*Bonds, Allen	Konjaupok, F. (Co. C.)
Brown, Mrs. Walter	†Mason, Loyd
*Brougher, Mrs. Edward	Miller, Adam
Buck, Mrs. E. C.	Ragnet, Edw. Cook
Bun, Miss Myron	Ralston, Lester D.
Capraun, John	Roberts, Mrs. S.
Capraun, Walter B.	Rose, M. L.
Crowe, Sgt. C. S.	*Schandler, Mrs. Louise
Dorman, Edward J.	*Schickling, Rev. R. A.
*Filkens, Harry	Shuff, Mrs. H. H.
*Gregory, Mr. J. B.	Simon, Max R.
Greene, Alf. (Box 103)	*Taylor, Percy
Graham, Alexander	Webber, Byron C.
*Hanson, Geo.	Woodford, Miss Lena
†Paper. *Card. †Package.	

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.  
Every Monday to New York, for all States. Due at New York the following Monday.\*



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., January 9, 1916.)

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Jan. 4....	Capt. A. J. West...	American....	Manila Import Co.....	Manila.....	Cristobal.....	Cut mahogany...	600	570	288

## PORT OF CRISTOBAL.

*ARRIVALS.					*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For	
Jan. 4....	Oranien...	Leyland Line.....	Liverpool.	Jan. 7....	Oranien...	Leyland Line.....	New Orleans.	
Jan. 5....	Jacob Luckenbach...	Luckenbach Line.....	New York.	Jan. 8....	Oranien...	Harrison Line.....	New Orleans.	
Jan. 6....	Merchant...	Harrison Line.....	Liverpool.					
Jan. 9....	Rosalie Mahony...	Olson & Mahony.....	Gulport.					
*EXPECTED ARRIVALS.					*EXPECTED DEPARTURES.			
Jan. 10....	Manuel Calvo....	Spanish Line.....	Barcelona.	Jan. 12....	Manuel Calvo....	Spanish Line.....	Barcelona.	
Jan. 12....	Venezuela.....	French Line.....	St. Nazaire.	Jan. 16....	Venezuela.....	French Line.....	St. Nazaire.	
					Rosalie Mahony...	Olson & Mahony.....	Gulport.	
					Jacob Luckenbach...	Luckenbach Line.....	New York.	

## PORT OF BALBOA.

ARRIVALS.				DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Jan. 5....	Guatemala....	Pacific Steam Nav. Co....	Talcahuano.	Jan. 2....	Cleveland.....	U. S. Navy.....	Corinto.
Jan. 5....	Ucayali.....	Peruvian Line.....	Callao.	Jan. 4....	Huasco.....	Chilean Line.....	Valparaiso.
Jan. 6....	Seijo Maru....	Toyo Kisen Kaisha.....	Hongkong.	Jan. 4....	Acme.....	A. W. Beadle Co....	Punta Arenas.
Jan. 8....	Hesperos.....	Brussgaard Klosterud....	Tocpilla.	Jan. 6....	Cauca.....	Pacific Steam Nav. Co.	Guayaquil.
Jan. 8....	Carib II.....	R. Wilcox & Co.....	Panama.	Jan. 9....	Seijo Maru....	Toyo Kisen Kaisha.....	Cornel.
				Jan. 9....	Hesperos.....	Brussgaard Klosterud....	San Francisco..

## EXPECTED ARRIVALS.

Jan. 12....	Pleiades.....	Luckenbach Line.....	San Francisco.
Jan. 13....	City of Para....	Pacific Mail S. S. Co....	San Francisco.
Jan. 18....	Colusa.....	N. Y. & Pacific S. S. Co.	San Francisco.
Jan. 11....	Huallaga.....	Peruvian Line.....	Peruvian ports.
Jan. 17....	Alfred Nobel...	Dampselek. Concordia...	Iquique.

## EXPECTED DEPARTURES.


\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Adams* the voyage requires seven days. Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, February 7 and March 6, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the two sailings mentioned above.

†NOTE—When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, January 8, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gambao	Gatun Lake	Miraflores Lake.
Sun., Jan. 2.....	126.15	92.50	86.96	55.53	53.58
Mon., Jan. 3.....	126.00	92.46	86.56	54.53	52.49
Tues., Jan. 4.....	126.20	92.51	86.56	51.53	49.49
Wed., Jan. 5.....	126.40	92.76	86.59	53.53	50.70
Thurs., Jan. 6.....	126.85	92.73	86.60	55.53	53.68
Fri., Jan. 7.....	126.20	92.56	86.60	56.52	52.77
Sat., Jan. 8.....	126.00	92.40	86.62	56.55	52.00
Heights of low water to nearest foot.....	125.0	91.0			

## Fuel and Supplies.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 50 shillings per ton of seven barrels. Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

All standard lubricants, light and heavy hardware, cordage, and miscellaneous ship chandlery supplies are sold from the storehouses at Cristobal and Balboa. Ice may be obtained in any reasonable quantity. The price is 33 cents per 100 pounds at either Cristobal or Balboa.

Repairs to vessels may be made to any extent, except turning of the largest crank shafts or longest line shafts or work requiring dry docking of largest vessels.

Subsistence supplies, including a large stock of fresh meats, vegetables, canned groceries, fruits, bakery products, etc., are available for quick delivery at either terminal. Prices are generally lower than the retail prices in the United States, and compare favorably with prices in any port of the world.

Application for supplies, or for services, should be made to the Captain of the Port, Cristobal or Balboa.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.				
Vessel.	Line.	Sails.	Arrives.	
Zacapa.....	U. F. C. Jan.	5....Jan. 12		
Allianca.....	P. R. R. Jan.	6....Jan. 11		
Calamares.....	U. F. C. Jan.	8....Jan. 16		
Carrillo.....	U. F. C. Jan.	12....Jan. 19		
Colon.....	P. R. R. Jan.	13....Jan. 18		
Tenadores.....	U. F. C. Jan.	15....Jan. 23		
Santa Marta.....	U. F. C. Jan.	19....Jan. 26		
Advance.....	P. R. R. Jan.	20....Jan. 27		
Matapan.....	U. F. C. Jan.	22....Jan. 31		
Almirante.....	U. F. C. Jan.	26....Feb. 2		
Panama.....	P. R. R. Jan.	27....Feb. 2		
Pastores.....	U. F. C. Jan.	29....Feb. 6		
Zacapa.....	U. F. C. Feb.	2....Feb. 9		

Allianca.....	P. R. R. Feb.	3....Feb. 9
Calamares.....	U. F. C. Feb.	5....Feb. 13
Carrillo.....	U. F. C. Feb.	9....Feb. 16
Colon.....	P. R. R. Feb.	10....Feb. 16

## CRISTOBAL-COLON TO NEW YORK.

Panama.....	P. R. R. Jan.	13....Jan. 19
Almirante.....	U. F. C. Jan.	13....Jan. 20
Pastores.....	U. F. C. Jan.	17....Jan. 24
Allianca.....	P. R. R. Jan.	20....Jan. 26
Zacapa.....	U. F. C. Jan.	20....Jan. 27
Calamares.....	U. F. C. Jan.	24....Jan. 31
Colon.....	P. R. R. Jan.	27....Feb. 2
Carrillo.....	U. F. C. Jan.	27....Feb. 3
Tenadores.....	U. F. C. Jan.	31....Feb. 7
Advance.....	P. R. R. Feb.	3....Feb. 10
Santa Marta.....	U. F. C. Feb.	3....Feb. 10
Matapan.....	U. F. C. Feb.	7....Feb. 15
Panama.....	P. R. R. Feb.	10....Feb. 16
Almirante.....	U. F. C. Feb.	10....Feb. 17
Pastores.....	U. F. C. Feb.	14....Feb. 21
Allianca.....	P. R. R. Feb.	17....Feb. 23

## NEW ORLEANS TO CRISTOBAL-COLON.

Abangarez.....	U. F. C. Jan.	8....Jan. 15
Heredia.....	U. F. C. Jan.	12....Jan. 17
Atenas.....	U. F. C. Jan.	15....Jan. 22
Parismina.....	U. F. C. Jan.	19....Jan. 24
Turrialba.....	U. F. C. Jan.	22....Jan. 29
Cartago.....	U. F. C. Jan.	26....Jan. 31
Abangarez.....	U. F. C. Jan.	29....Feb. 5
Heredia.....	U. F. C. Feb.	2....Feb. 7
Atenas.....	U. F. C. Feb.	5....Feb. 11
Parismina.....	U. F. C. Feb.	9....Feb. 14
Turrialba.....	U. F. C. Feb.	12....Feb. 19
Cartago.....	U. F. C. Feb.	16....Feb. 21
Abangarez.....	U. F. C. Feb.	19....Feb. 26

## CRISTOBAL-COLON TO NEW-ORLEANS.

Cartago.....	U. F. C. Jan.	16....Jan. 21
Abangarez.....	U. F. C. Jan.	16....Jan. 23
Parismina.....	U. F. C. Jan.	23....Jan. 28
Turrialba.....	U. F. C. Jan.	23....Jan. 30
Cartago.....	U. F. C. Jan.	30....Feb. 3
Abangarez.....	U. F. C. Jan.	30....Feb. 6
Parismina.....	U. F. C. Feb.	6....Feb. 11
Turrialba.....	U. F. C. Feb.	6....Feb. 13
Cartago.....	U. F. C. Feb.	13....Feb. 18
Abangarez.....	U. F. C. Feb.	13....Feb. 20
Parismina.....	U. F. C. Feb.	20....Feb. 25
Turrialba.....	U. F. C. Feb.	20....Feb. 27

# CANAL



# RECORD

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No. 22.

## The Canal Record

Official publication of The Panama Canal.

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**THE CANAL RECORD,**  
Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### More Barges for Use of Dredging Division.

An order has been placed with the R. G. Packard Company, Bayonne, N. J., for two 3,000-cubic yard steel barges, to be delivered early in February. This order is in addition to that for four barges, noted in THE CANAL RECORD of January 5; those were 6-pocket, 1,000-yard wooden scows, ordered from the Moran Towing and Transportation Company, New York. All six of the barges to be added to the dredging fleet were purchased in the open market for early delivery, and all have been in use.

The barges are to be towed to the Isthmus from Norfolk by the Canal colliers, as were the three 1,000-yard barges purchased last year from William Cramp & Sons. The hawsers and other towing equipment used for bringing down the Cramp barges have been returned to the United States for use in the delivery of the new barges. The barges will be towed to Norfolk from New York by a commercial towing company. The first shipment, of two of the 1,000-yard barges, is due to arrive at Cristobal before the end of this month.

The two 3,000-yard vessels will be the largest barges ever used on the Isthmus, as the largest used up to this time are of 1,000-yards capacity and the most of the scows and clapsnets have capacity of 600, 500, and 275 cubic yards.

#### Progress of Excavation in the Cut.

The output of the dredges at the Culebra slides during the past week has been reduced somewhat by their reaching hard rock, after digging away quantities of softer material

which had slid into the channel. Excavation is being pushed into the slides, and on the east side has advanced as far as 100 feet beyond the regular channel line. At its narrowest point the channel is now approximately 150 feet wide. The depth varies from day to day, and little attention is paid to it beyond watching to see that a channel is maintained for the passage of the towboats.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, January 17, amounted to 239,160 cubic yards. Other excavation in the Cut during the same period amounted to 23,229 cubic yards, making a total for the week of 262,389 cubic yards. In addition, 1,915 cubic yards were rehandled by pipeline suction dredge No. 86 and the 5-yard dipper dredge Cardenas.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	63,145
Gambao.....	15-yard dipper.....	71,115
Paraíso.....	15-yard dipper.....	50,595
Coroail.....	Ladder.....	43,055
Culebra.....	Seagoing suction.....	23,229
No. 86.....	Pipeline suction.....	1,440
Murmot.....	Belgian ladder.....	1,250
Cardenas.....	5-yard dipper.....	475

The Cardenas worked only one-third of a day, being then transferred to the repair wharf at Paraíso for overhauling. The Paraíso worked 6.4 days.

The average aggregate output from the Cut during the 12 weeks preceding that ending at midnight of Monday, January 17, not including rehandled spoil, was 261,648½ cubic yards, the total amount of primary excavation during that period having been 3,139,784 cubic yards.

#### Passage of the "Carib II" through the Canal.

The schooner *Carib II*, flying the flag of Panama, was towed through the Canal on January 10 and 11. This vessel, whose home port is Colon, had made a trip through the Canal on September 4 in ballast to secure a cargo at Panama, and was prevented by the slides from returning to the Atlantic. Though her owners found work for her in the Pacific coastwise trade of Panama she was regarded as one of the ships waiting for transit of the Canal at the time of its closing, and was returned to the Atlantic at the first opportunity. This does not affect the validity of the statement in THE CANAL RECORD of last week that "The Panama Canal will not undertake to handle any other vessels through the Canal until notice of readiness is given."

#### Vessel Sails from Balboa for Strait of Magellan.

The steamship *Margam Abbey*, Williams and Mordey, operators, arrived at Balboa from Tacoma on Monday, January 10. The vessel came seeking transit through the Canal, on the way to Bordeaux with 5,967 tons of flour, but as transit could not be made she took on 600 tons of coal at Balboa in prepara-

tion for the trip by way of the Strait of Magellan, sailing on Sunday, January 16. The *Margam Abbey* has a length of 380 feet, beam of 50 feet, and draft of 21 feet 11 inches.

The steamships *Arna* and *Erroll* arrived at Balboa during the week from north Pacific ports, in the hope of making the transit of the Canal. The Canal authorities can give them no definite assurances or encouragement to wait for the opening of the Canal, and their masters have cabled the operators for instructions.

#### Progress of Work on Pier 18, Balboa.

The riveting of the steel for the shed of Pier 18, Balboa, has been completed for the two side bays, and is well advanced on the center bay. The pouring of concrete for the side walls of the shed was begun last week, at the northwest corner of the shed, which is nearest the Canal. The side walls will consist essentially of a series of steel doors, separated by sections of concrete, five feet six inches wide. The concrete sections are now being built to a height of 23 feet, to a level even with the tops of the proposed doors. The contractor for the doors is expected to begin early in February to erect certain parts of them which will allow the concrete work to proceed to completion above the tops of the doors.

The filling of the center of the pier with coral rock is rapidly approaching completion. The rock is hauled from the permanent coaling plant at Cristobal, where it is discharged from the pipeline suction dredges working in the slips alongside the wharves of the plant. It is brought across the Isthmus on the return trips of trains of dump cars which have hauled core rock from the Sosa Hill quarry to the East Breakwater.

#### Beginning of Erection of Steel for Shed of Pier 7, Cristobal.

The erection of the steel for the shed on Pier 7, Cristobal, was begun on Wednesday, January 12. The first steel placed was the seaward half of the row of columns which will extend between the north and central bays of the shed. The work of erection is being carried on by the Division of Terminal Construction, the steel being furnished by Milliken Brothers, Inc., of New York.

The pouring of concrete for the girders and floor of the superstructure of the pier is over three-fourths completed, and will probably be finished shortly after the first of February. The driving of fender piles along the faces of the pier is following closely on the completion of the floor sections.

#### Transport for the Twenty-Seventh Infantry.

The Army transport *Logan* arrived at Balboa in the morning of Wednesday, January 19, to carry the Twenty-seventh Regiment of Infantry to Manila. The regiment arrived on the Isthmus on October 6, disembarking at Cristobal from the transport *Buford* which could not go through the Canal.



## CANAL WORK IN DECEMBER.

## Monthly Report of the Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., January 12, 1916.  
*The Honorable the Secretary of War,*  
*Washington, D. C.*

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of December, 1915:

## Department of Operation and Maintenance.

**Lock operation and maintenance**—In addition to the usual maintenance and repair work at the locks, the work of connecting the motors of six towing locomotives at Gatun Locks for concatenated operation was completed, making a total of eight thus connected to date; 83 per cent of the material for the regulating valves has been received on the Isthmus and the work incident to the installation of these valves was continued; and at Miraflores the spillway gate hand-operating device was completed and put into service. The usual operation of the emergency dams at all locks was conducted for drill purposes. The following commercial lockages were made:

*Gatun*—Eight lockages, eight vessels; *Pedro Miguel*—Eight lockages, 10 vessels. *Miraflores*—Eight lockages, nine vessels.

**Electrical Division**—The net output of the power plants was as follows: Gatun hydro-electric station, 3,345,410 kilowatt-hours; Miraflores steam station (minus), 80,030 kilowatt-hours; total, 3,265,380 kilowatt-hours. The output of the Balboa air compressor plant was 166,036,151 cubic feet of free air compressed to 105 pounds. In addition to the usual operation, maintenance, and repair work, construction work was carried on in connection with the electrical installation on the new coaling plants, dry dock, and on buildings for The Panama Canal and for the Army.

**Municipal Engineering Division**—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: The municipal work for the Army stables at Corozal, and for the Coast Artillery posts at Fort Grant and Fort Randolph; grading around staff officers' quarters at Balboa Heights; installation of water mains on south side of dry dock No. 1, Balboa; the installation of water lines on pier No. 18, Balboa; and municipal work in the Balboa townsite, including the road work and the grading of playground area and planting of same in grass.

**Meteorology and Hydrography**—The rainfall for the month exceeded the station averages at five stations and was deficient at 13 stations. The monthly rainfall ranged from 10.16 inches at Monte Lirio to 2.81 inches at Indio station on the upper Chagres, the maximum precipitation recorded on any one day being 3.72 inches, at Gamboa on December 7. The estimated rainfall over the Gatun Lake watershed was 27 per cent below the normal, or 7.00 inches against a 15-year mean of 9.62 inches. The Chagres River discharge at Alhajuela was 20 per cent below the 26-year December normal, and furnished 44 per cent and 40 per cent of the net and total Gatun Lake yields, respectively. The elevation of Gatun Lake varied from 86.54 on the 30th to 85.69 on the 1st, averaging 86.12. Miraflores Lake varied in elevation from 54.47 on the 7th to 53.25 on the 18th, averaging 53.88. The spillway discharge at

Miraflores was 157.16 million cubic feet, with spillway gates operated on 10 days, partial openings, except one full opening on the 4th for 32 minutes. This was the first full opening that has ever been made in controlling Miraflores Lake. Seven seismic disturbances were recorded at Balboa Heights during the month, on December 5, 12, 15, 26, 28, and 30. No damage was reported as a result of any of the shocks. The two disturbances recorded on the 15th were of intensity III on the Rossi-Foré scale of I to X and were generally felt.

## Division of Terminal Construction.

## PACIFIC TERMINALS.

**Dry dock and entrance pier**—Eight hundred and twenty cubic yards of mass concrete and 2,577 cubic yards of reinforced concrete were placed in the walls proper, in which 75,639 pounds of reinforcing steel were embedded. There were also placed 274,914 pounds of fixed steel. In the dock gates, the end reaction castings of the miter gate have been completed on both leaves, with the exception of the bottom casting at the quoin ends. The right leaf was stepped on its pintle on December 14-15. The installation of the rails in floor of sump for the supporting carriage has been completed for the left leaf, the carriage has been placed in position under leaf, and, at the close of the month, the babbitting between the top caisson and the bottom side of girder was under way. The footwalk supporting angles on the left leaf have been brought to alignment and about 200 holes remain to be reamed in same for finished bolts and rivets. The supporting angles for footwalk on the right leaf have been partly aligned, but very little reaming or riveting has been done. The angles for the fenders have been installed on both leaves, with the exception of the top angles of the bottom fender on the left leaf, and the angles for the bottom fender on the right leaf. The riveting has been completed on the angles for the left leaf, with the exception of the bottom fender. The riveting of the angles for the top fenders of the right leaf has also been completed. The reinforcing angles of the "A" frames for the left leaf have all been installed and the bolts fitted, but not finally tightened, with the exception of the panel above the air chamber, these having been left off for access during the water test. In the right leaf the angles have been erected with the same exception, and the finished bolts have been fitted up to the top of air chamber. Structural steel was erected in the dock gates in the amount of 15.96 tons. The erection of the pumping plant machinery was started when three of the four 54-inch wall sections of the main suction pipes were placed in position; 10 tons of steel were erected. Installation of the miter gate moving machines was carried on throughout the month, and the machine for the right leaf was 65 per cent erected at the close of the month. In the gates 9,369 rivets were driven, making a total of 97,634 rivets driven to date. Steamshovel excavation at the entrance pier amounted to 1,827 cubic yards.

**Coaling plant**—Six additional panels for the unloader wharf, erected in November, were riveted up. Excavation in the piers at the west end was commenced. The number of rivets driven was 3,912, which brings the total number of rivets driven to 24,000. Fifteen panels of the reloader wharf were erected and aligned, and riveting commenced. Steel erected amounted to 1,062 tons; 11,010 rivets were driven. Steamshovel was placed

behind the reloader wharf to excavate for the anchorages, this work being 65 per cent completed.

In the unloader towers the contractor completed the corrugated iron work by the enclosing of the front side of the machinery house of tower No. 2. All corrugated iron was given a coat of galvanized iron primer and the exteriors of the operators' cabs and the machinery houses were given the first coat of field paint. The only work remaining on the unloader towers is the enameling of the interiors of the operators' cabs and the machinery houses, painting with the second coat of field paint, placing of cables, installation of the operating parts for machines; and the installation of the steam and exhaust piping in tower No. 2.

**Docks**—All the caissons in wharf c-d behind the crane rail extension were in place and filled with concrete. All of the decking is in place, with the exception of the runway extension. Fill was placed behind wharf d-e and c-d and the anchors were put in place. Riprap wall behind the headwall was completed at the head of No. 1 slip. The last 10 panels of the south aisle and all the center aisle trusses and purlins of pier No. 18 shed were erected. This completes the erection of the shed, except for riveting. The steel erected amounted to \$29.52 tons, making the total steel in the shed 1,930.52 tons; and 2,574 rivets were driven in the assembly of the center trusses. Dolphins and fender piles were placed on the north side, and coral fill was placed in the center of the pier.

**Excavation and filling**—The total excavation for the month amounted to 97,327 cubic yards, of which 93,681 cubic yards were classified as rock, the greater portion of which was obtained from Sosa Hill. Various small filling operations continued in the vicinity of the dry dock, and filling was commenced behind wharf d-e-f, the south wall of the pumping plant, and the north wall of the dry dock; also the ramp leading to dry dock No. 1. There were sent to the East Breakwater from the Sosa Hill quarry 77,625 cubic yards, of which 11,014 cubic yards were classified as armor rock.

## ATLANTIC TERMINALS.

**East Breakwater**—The single track for the ell was completed, 3,880 linear feet of piling being driven and 162 linear feet of track trestle constructed. The dry and wet fill measured in place amounted to 129,878 cubic yards. Armor rock in the amount of 11,228 cubic yards, and 68,791 cubic yards of core rock, both from Sosa Hill, were plowed off. Derrick barge No. 157 placed 3,135.2 cubic yards of concrete blocks and plowed off 2,164.5 cubic yards, making a total of 5,299.7 cubic yards. Dredge No. 4 pumped 20,656 cubic yards of earth and 30,983 cubic yards of core rock on the harbor slope of the breakwater, making a total of 51,639 cubic yards. Two hundred and seventy linear feet of piling were driven for dolphins at the Coco Solo dock.

Under the concrete block contract, 513 blocks were cast, involving the placing of 61,310 cubic yards of concrete, the total number of blocks cast to date being 1,700. Seven hundred and seventy-six concrete blocks were shipped to the breakwater, the total to date being 1,050. The number of days on which concrete was poured was 11, giving an average daily output of 47 blocks. Cement used during the month amounted to 29,976 bags.



In the maintenance work on the West Breakwater 4,313.3 cubic yards of concrete blocks were placed by derrick barge *No. 157*.

**Coaling plant**—Concrete filling was placed in the remaining two caissons under the wharf track, and the concreting of the east bridge track was completed. All caissons have been sunk to rock, excavated, and filled with concrete. Concrete filler amounted to 173 cubic yards. All erection and riveting of deck steel for wharves was completed. Approximately 99 per cent of the dry storage has been graded. Coral fill under the end wharf was completed and the riprap top was placed.

Under Washington order No. 40,483, structural steel for the northwest loop of the viaduct was completely erected and riveted, making this item 91 per cent complete. Wooden floors, tile roofs, and windows were placed on three scale houses and the stucco walls on one scale house were finished. About 2,640 linear feet of straight viaduct track were aligned and spiked, making the total to date 8,200 linear feet, or 89 per cent of the entire amount. The curved tracks and switches on the west cut-off loop were completed, thus completing four of the six loops in the viaduct track. About 200 linear feet of pipe hand railing were erected, making a total to date of 3,700 linear feet, or 67 per cent of the total for this item. Creosoted ties and walkways were installed on 300 linear feet of viaduct, making a total to date of 4,550 linear feet of double-track viaduct, or 90 per cent of the entire amount for this item. Twenty conveyor cars were assembled and riveted, making the total to date 46, or 52 per cent of the total number required. Steel for the four conveyor booms was 50 per cent erected during the month, but none riveted. About 45,000 pounds of reinforcing steel in motor and machinery supports, etc., were erected on the four reloader towers and riveted complete. About 8,200 square feet of corrugated iron siding was placed in the machinery houses and operators' cabs, making this item of housing 80 per cent complete. Window sash was completed in all reloaders, but no glazing has been done. The wooden walkways on the towers and approach conveyors were 50 per cent completed during the month. The main tower steel on the four reloaders has been given the second and final coat of paint. Except for the erection of a few pieces of miscellaneous steel, no work was done on the bridges or diggers. These units are structurally complete.

Under Washington order No. 40,587, all unloaders have received the final coat of paint and are entirely complete, except for a few minor corrections. The 3-inch and 3-inch throttle valves were received and installed on towers Nos. 1 and 2, and preliminary test was made on unloader tower No. 1.

#### Marine Division.

Due to the continued closure of the Canal by slides, only 10 vessels of light draft passed through the Canal in December, of which seven were northbound and three southbound. Of this total, eight were of American and one of British register. One of the northbound vessels, the steamship *Newton* did not accomplish a complete transit through the Canal owing to its being unable to pass the slides in Gaillard Cut, the steamer being anchored at Pedro Miguel at the close of the month. One vessel was measured and tonnage certificate issued thereto. Statements showing vessels making the transit of the Canal in each di-

rection during the month are appended to this report.\*

#### Dredging Division.

The total dredge excavation for the month, including earth, rock, and gravel, was 1,391,203 cubic yards. Of this total, 67,439 cubic yards of earth and 3,000 cubic yards of rock were removed from the Balboa inner harbor; 1,007,831 cubic yards of rock and 148,262 cubic yards of earth from Gaillard Cut; 23,726 cubic yards of earth and 31,082 cubic yards of rock from the Cristobal coaling station; 15,541 cubic yards of earth from the Atlantic terminals entrance channel opposite dock No. 11; and 20,656 cubic yards of coral sand and 30,983 cubic yards of coral rock at Coco Solo.

The slides, especially on the east side, continued active during the month. A small opening was made through the slide on the 17th, which closed again on the 18th, and was opened on the 19th large enough for small boats. Commercial vessels passed on December 23. Considerable movement was noted on the west Culebra slide near the base from the 8th to the 14th and from the 17th to the 19th.

The rock crusher *Vulcan* was engaged all month in breaking areas not to grade in the Pacific entrance, 3,371 holes being broken over an area of 53,936 square feet, with a total penetration of 3,937 feet and a breakage of 2,332 cubic yards. The drill barge *Teredo No. 2* was engaged from 1st to 13th in Gaillard Cut, 11 holes being drilled with a total penetration of 204 feet, and 189 cubic yards were broken; and for the balance of the month at the Pacific entrance, at which point 399 holes were drilled with a total penetration of 6,463 linear feet, and 5,895 cubic yards of rock were broken. The hydraulic grader was engaged at Gamboa, standing by the crane *Ajax*, furnishing air, etc. Dredges *No. 1* and *No. 82* were engaged in excavating sand and gravel from the Chagres River, 5,299 cubic yards of sand, 3,297 cubic yards of No. 1 gravel, 7,545 cubic yards of No. 2 gravel, and 26,542 cubic yards of run-of-bank gravel being excavated. The work of exterminating water hyacinths continued.

#### Mechanical Division.

Shop orders authorized during the month numbered 1,093, a decrease of 51 as compared with the month of November; those left over from the previous month numbered 913, and those carried forward into January, 943. The output of the foundry was 25<sup>3</sup>/<sub>4</sub> pounds of iron, 131,690 pounds of steel, and 25,757 pounds of brass, being the heaviest output since May, 1914. Hasting was done on 4,603 pieces of equipment, and shop and field repairs were made on 8,996. This includes 896 cars repaired in the shop; and 1,475 light and four heavy repair jobs on other equipment. The electric motor for driving one of the dry dock pumps was tested out thoroughly and functioned satisfactorily.

**Fuel oil plant**—Work was started on the construction of the trestle between the shore and the oil crib at Balboa for carrying the pipelines between the plant and the crib. The erection of the tanks for the Panama Canal Storage Corporation at Balboa was approximately 98 per cent completed.

\*The information contained in the tables has been published in the weekly reports in THE CANAL RECORD. The statements are therefore not printed.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following Canal structures were in the course of construction at the places named: **Ancon-Balboa**—The four-family concrete building, constructed under contract, was completed and turned over for occupation; work on the construction of new verandas at the old Administration Building, Ancon, was completed with the exception of the removal of certain forms, and the alterations on the lower floor, converting same into court room and offices, were about 75 per cent completed. The work as a whole was 90 per cent completed at the end of the month. The installation of furnaces and machinery in the new Ancon Hospital crematory was completed, tested, and turned over to the Health Department. The construction of the new refrigerating plant at Balboa continued, the walls and roof of the main engine room were completed, exterior walls for the cold storage beef rooms were completed to the second floor. The submerged platform and pump house on Dock 17 for the installation of the condenser pumps for the ice plant were commenced and 75 per cent completed, and the work as a whole was approximately 45 per cent completed at the end of the month. The work on the new Ancon Hospital group continued, and at the end of the month buildings B and C were completed to the second floor, and the forms for building A were 50 per cent completed to the same floor. The work as a whole is approximately 30 per cent completed. The construction of the new terminal office building at the rear of Dock 17 was continued, and at the end of the month the building was ready for pouring the outer walls to the second floor. The construction of the building as a whole was approximately 20 per cent completed. The construction of the Ancon clubhouse was commenced and is approximately 35 per cent completed. Three garage buildings, providing 22 stalls, were commenced and completed. **Corozal**—The work on the extension of the Miraflores power house was completed. **Gatun-Colon**—Work was continued on the construction of the new Colon Hospital group, and at the end of the month these buildings were approximately 75 per cent completed.

#### Supply Department.

The force report for the half month ended December 23, 1915, showed a total of 21,771 employees of The Panama Canal and the Panama Railroad Company, of whom 3,528 were white Americans and 18,243 laborers. Of the latter, approximately 148 were Europeans and the remainder West Indian negroes. There was a decrease of 2,463 laborers and a decrease of 125 Americans, making a net decrease of 2,588.

The occupants of Government quarters numbered 6,660 Americans, of whom 3,607 were men, 1,504 women, and 1,548 children; and 9,487 West Indians, of whom 5,410 were men, 1,600 women, and 2,477 children.

The value of material received during the month was \$468,938. It came forward in 27 steamers, and the total weight of cargo, exclusive of piling and lumber, was 14,816 tons. Some of the principal items were 59,283 barrels of fuel oil, 431,504 feet, board measure, of lumber, and 5,830 bales of hay, for stock.

The Balboa oil plant handled 130,374.35 barrels of fuel oil, and the Mount Hope plant

handled 10,193.1 barrels of fuel oil, the majority of both being for private companies.

#### Health Department.

**General**—Two cases of yellow fever were received at quarantine from Buenaventura, Colombia, on December 10, 1915. The cases were admitted to Ancon Hospital; one died and the other recovered and was discharged. With these exceptions, no cases of yellow fever, smallpox, or plague have originated on or were brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 31,598, was 13.29 per thousand per year, as compared with 11.14 for the preceding month and 12.37 for the corresponding month of last year.

**Employees**—The health of employees continued good. The number of names on the payrolls for the preceding month was 33,551. On this basis the admission to hospitals and quarters, 859, gave a rate of 307.25 per thousand, as compared with 311.01 for the preceding month, and 331.27 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites, 225.51; blacks, 105.00; and Americans, 200.39. The admission rates to hospitals and quarters for malaria were: Whites, 68.98; blacks, 19.43; and Americans, 58.94. The total number of deaths from all causes was 17. Of these 14 died from disease, or 5.01 per thousand, as compared with 5.96 for the preceding month, and 3.64 for the corresponding month of last year. One American died from disease during the month, giving a rate of 2.95 per thousand.

#### Accounting Department.

The cash balance in Canal construction appropriations on December 31, 1915, was \$14,742,564.17, and in the fortifications appropriations, \$1,981,110.32. The payrolls for December, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$885,765.16 and the fortification roll amounted to \$58,884.18. Payments by the Disbursing Clerk in Washington amounted to \$558,014.66 and by the Paymaster on the Isthmus to \$1,235,746.74. Collections on the Isthmus amounted to \$771,488.13, of which \$512,131.41 was repaid to appropriations, \$234,067.65 was commissary collections and other trust funds, and \$25,289.07 was miscellaneous receipts to be covered into the Treasury. Of the miscellaneous receipts \$5,356.50 was collected on account of tolls. Collections by the Disbursing Clerk at Washington amounted to \$67,157.32. Deposits in the sum of \$12,250 were made with the Assistant Treasurers to be applied in payment of tolls and other charges against vessels using the Canal. Canal revenue collections and miscellaneous funds received amounted to \$194,107.11, and the disbursements under the same heading amounted to \$244,177.62.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

Two hundred and thirteen licenses of all kinds were issued. Twenty-four estates were received and 18 settled, the total cash received during the month amounting to \$623.18, the value of the estates closed being \$636.19. At the port of Balboa 31 vessels entered and 35 cleared, and at the port of Cristobal 52 vessels entered and 58 cleared.

**Postal service**—Postmasters remitted on account of money order fees, stamp sales, second-class mail collections, postage due collections, and box rent receipts, \$10,958.85. Money orders issued during the month ag-

gregated \$301,327.58. Of this total \$74,480 represents the value of deposit money orders issued without fee, in lieu of postal savings certificates. Deposit money orders were paid to the value of \$100,185, and postal savings certificates to the value of \$6,954. The balance of postal savings deposits on hand at the close of the month, represented by unpaid certificates and deposit money orders, aggregated \$412,948, as compared with \$415,607 at the close of the previous month. A new post-office was opened at Monte Lirio on December 15 to serve the new settlements on the lake above that point.

#### POLICE AND FIRE DIVISION.

Four hundred and twenty-seven arrests were made. Of this total 403 were males and 24 females. Fifty-five convicts were confined in the penitentiary at the close of the month. Seven persons were deported, three of whom were convicts who had completed their sentence in the penitentiary and four were prisoners who had served terms in jail.

Seven fires occurred, and the damage to The Panama Canal property resulting therefrom amounted to \$152. Panama Railroad property and the property of the United States Army suffered no damage. The damage sustained by private property amounted to approximately \$20,710.75, the bulk of which resulted from a fire which occurred in the cargo of the steamship *Antonio Lopez* of the Compañía Trasatlantica de Barcelona, while tied up at the docks at Cristobal.

#### COURTS.

In the District Court 64 cases were settled; 13 civil, 24 probate, and 40 criminal cases were filed, and 136 cases of all kinds were pending at the close of the month. In the magistrates court 18 civil and 415 criminal cases were disposed of.

#### DIVISION OF SCHOOLS.

The total enrollment was 1,375 for the white schools, and 796 for the colored. In the white schools the net enrollment was 1,240, the average daily attendance 1,085.8, and the average number belonging 1,125.5. In the colored schools the net enrollment was 570, the average daily attendance 429.3, and the average number belonging 505.2.

#### Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including rehandled cargo, amounted to approximately 136,644 tons. The following quantities of coal were handled and trimmed in bunkers: Colon agency, 2,000 tons; Balboa agency, 6,998 tons; total, 8,998 tons.

The work on pier No. 7, Cristobal, progressed satisfactorily, 201,994 square feet of forms for placement of slab and encasement of girders being set; 5,756.6 cubic yards of concrete were placed in the floor of the pier, making this item 70 per cent complete; and 30,568 cubic yards of backfill were placed for approach to pier No. 7, this item being 50 per cent complete. There were manufactured for this pier 581.71 squares of roofing tile, making this item 61 per cent complete.

Preliminary work continued on pier No. 6, Cristobal, 471 linear feet of wash drilling and 71.7 linear feet of diamond drilling being accomplished during the month, completing this item of drilling.

Respectfully,

GEO. W. GOETHALS,  
Governor.

#### Announcement of Special Examinations.

The following examinations are specially announced to be held by the Board of Civil Service Examiners at Balboa Heights, probably on the dates following the respective titles: Physical laboratorian (male); physical metallurgist (male); investigator in cooperative purchasing (male); deputy shipping commissioner (male); trained nurse (female); and surveyor (male), February 6; second-class (or assistant) steam engineer (male), March 19.

Applications for these examinations should reach the office of the Board of Examiners before the close of business on January 22, 1916, except for the last-named, which should reach the office before the close of business on February 22, 1916. Copies of the special announcements, giving full instructions as to the requirements, the subjects to be given, and the salaries offered, have been posted at all clubhouses and post-offices in the Canal Zone. Any further information desired can be obtained from the Board of Examiners in the Administration Building at Balboa Heights.

#### Levelman and Transmittan Examination.

An examination for promotion to the position of levelman and transmittan will be held in the board room at the Administration Building on Sunday morning, February 20, 1916, beginning at 9 o'clock.

The examination will be divided into four sections as follows, with the relative weight of each section represented by the numbers in parentheses:

Section 1.—Give your name in full. Give your age. Give names and addresses of not more than three of your former employers. (10) State the extent of your education, with names of preparatory schools and colleges, also advise dates of graduation. (15) Give an outline of your experience and length of service qualifying you for promotion.

Section No. 2—(50)—Written examination.

Section No. 3—(20)—Oral examination.

Section No. 4—(5)—Give sample of your free hand lettering, any 10 words and 10 figures.

Sections 2 to 4, inclusive, will be given in the board room between 9 a. m. and 12 m. on February 20. Section 1 should be submitted with the application for permission to take the examination and should be sent through the head of the division to the Office Engineer, Balboa Heights, on or before February 17, 1916.

C. J. EMBREE, O. E. MALSBURY, A. WILSON,  
Board of Examiners.

#### Arrival of the "Cristobal."

The steamship *Cristobal* of the Panama Railroad Steamship Line arrived at Cristobal from New York on Sunday, January 16, carrying 74 passengers, 3,550 tons of merchandise, and 134,020 bags of cement, the latter consigned to The Panama Canal. The *Cristobal* had been away since November 30, having experienced considerable delays in discharging her cargo of heavy pieces of metal scrap in New York. The date of her departure for New York has not been set, but will probably be about February 3; she will make a side trip to Cartagena, Colombia, for cattle for the Supply Department, before returning to New York.

A suction dredge, the *San Pablo*, under construction by the Baltimore Drydocks and Shipbuilding Company for the use of the War Department in the San Francisco district, is expected to be ready to sail from Baltimore for San Francisco under her own steam about the first of March, coming to Cristobal.



## WEATHER CONDITIONS, 1915.

## Heavy Rainfall during Dry Season Was Striking Feature.—Comparative Records.

Unusual precipitation occurred at times during the dry season of the year 1915. Comment on this was made in THE CANAL RECORD on February 24 and May 19. At the Pacific stations the dry season rainfall was approximately double the normal, and on the Atlantic slope it was about one and one-half times the normal. The dry season precipitation over the Pacific section amounted to 10 per cent of the annual total; and over the Atlantic section, to 20 per cent.

The rainfall for the entire year was above the average at 10 stations and below it at eight stations. The annual totals ranged from 65.37 inches at Balboa to 152.77 inches at Colon. The precipitation at Bocas del Toro was the least for the seven years during which records have been kept there. The totals for the year at the several stations are given herewith, in comparison with the totals for the years 1913 and 1914, and with the station averages; the number of rainy days (with .01 inch or more of rainfall) at each station in 1915 is also given:

STATIONS.	1913	1914	1915	Station Av.	Years of record	Rainy days, 1915
<i>Pacific section—</i>						
Balboa.....	59.54	64.93	65.37	69.26	17	183
Balboa Heights.....	65.98	64.58	66.71	70.32	18	187
Miraflores.....	70.12	65.05	81.09	83.37	7	208
P. Miguel.....	69.65	75.47	76.96	80.78	8	206
Rio Grande.....	64.51	70.18	84.75	84.55	11	228
<i>Central section—</i>						
Culebra.....	69.09	68.88	90.52	87.68	25	226
Camacho.....	73.70	70.86	88.62	89.01	9	188
Empire.....	74.78	66.93	87.00	79.81	11	228
Camboa.....	86.28	77.35	79.46	91.74	33	222
Juan Mina.....	77.13	92.19	105.53	91.62	5	229
Alhajuela.....	77.41	89.52	98.77	101.97	16	231
Vigia.....	77.13	105.77	107.55	105.58	7	226
Frijoles.....	109.34	91.90	122.89	107.21	4	252
Trinidad.....	97.27	89.75	106.89	112.36	8	222
Moate Lirio.....	107.58	107.26	138.91	128.08	8	177
<i>Atlantic section—</i>						
Gatun.....	112.81	92.18	146.37	127.97	11	268
Brazos Brook.....	138.89	121.75	146.65	137.85	9	275
Colon.....	131.22	132.70	152.77	179.95	45	253
Barro Colorado.....	76.37	41.13	77.44	120.45	7	232

\*believed to be correct; exact record not obtained.

March was the month of least rainfall, and October was, in general, the rainiest month.

The maximum 24-hour rainfall recorded during the year was 8.30 inches, falling at Gatun on April 3 and 4. This exceeds the 24-hour record for all stations in the central and Pacific stations, but is less than the 24-hour records at any of the stations in the Atlantic section. The highest recorded rain-

fall on the Isthmus during 24 hours is 10.86 inches, at Porto Bello on December 28-29, 1909. The record for five minutes is 2.48 inches, at Porto Bello on November 29, 1911; for one hour, 5.86 inches, at Balboa on June 2, 1906; for one month, 58.17 inches, at Porto Bello, December, 1909; and for one year, 237.28 inches, at Porto Bello in 1909.

The maximum rainfall for 24 hours, 10.86 inches, has been exceeded in localities in the southern section of the United States, although the annual average at stations on the Atlantic coast of the Isthmus is higher than the annual rainfall anywhere in the United States. Over the Southern States the annual rainfall averages about 50 inches. The heaviest average annual rainfall known occurs in a small area of Assam, India, and amounts to about 475 inches in a year, more than 400 inches of which fall during the five months of the summer monsoon. For 24 hours, the maximum record is 46 inches, falling at Baguio, Philippine Islands, on July 14-15, 1911, during the passage of a severe typhoon. The next highest record is 40.8 inches, falling at Cherrapunji, Assam, on June 14, 1876.

Among the heaviest rainstorms of record in the United States have been the 21.3 inches falling in 22 hours at Fort Clark, Texas, June 14-15, 1889; 21.4 inches in 24 hours at Alexandria, Louisiana, June 15-16, 1886; and 18 inches in 17 hours at St. George, Georgia, August 28-29, 1911. It is probable that waterspouts cause a heavier precipitation than those recorded, but no records of such precipitation, from actual measurements, are available.

The average air temperature over the Isthmus during 1915 was nearly normal on the Pacific coast and approximately one degree Fahrenheit above normal on the Atlantic coast. The relative humidity, daytime cloudiness, and temperature of the sea water were slightly above the average, while the atmospheric pressure and wind movement were slightly below the average, on both coasts. The evaporation was above normal on both coasts but slightly below the average over the lake surface at Gatun.

Elevations of Gatun Lake, in feet above mean sealevel, were as follows: Mean for the year, 86.17; maximum, on February 10, 87.20; minimum, on November 9, 84.96. Evaporation from the lake's surface amounted to 59,932 inches during the year.

A summary of the climatological conditions recorded at the first-class stations of Balboa Heights and Colon, on the Pacific and Atlantic coasts, respectively, is given in this table:

STATIONS.	Pressure (reduced to mean of 24 hours).	Temperature.				Mean relative humidity.	Precipitation.				Wind.			
		Mean.	Maximum.	Date.	Minimum.		Total inches.	Station average.	Days of .01 inch or more.	Total movement (miles).	Prevailing direction.	Max. velocity in miles.	Direction.	Date.
Colon.....	29.83	81.2	91	Sep. 27	72	Feb. 10	152.77	129.95	253	87,110	N.	46	N.	April 4
Balboa Heights.....	29.83	80.6	93	Apr. 11	69	Jan. 31	66.71	70.32	187	64,249	N.	47	S.W.	May 26

## New Section of Road between Pedro Miguel and Paraiso.

The unsatisfactory arrangement of the highway between Pedro Miguel and Paraiso at the hill at the south end of Paraiso, where the road swings around the south and east sides of the hill in several sharp curves, has been relieved by the construction of an additional section of road along the west or

Canal side of the hill. The result is virtual double-tracking, and all northbound traffic, going from Pedro Miguel to Paraiso, is to pass over the new section, while southward traffic, from Paraiso to Pedro Miguel, is to go over the original section, following the rule of the road in Panama that traffic turns to the left in passing. Signs have been posted on either side of the hill to caution drivers.

## OFFICIAL CIRCULARS.

## Sale of Water to Vessels at Colon Docks.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., January 1, 1916.

CIRCULAR No. 632-3:

1. Effective January 1, 1916, the Division of Municipal Engineering will take over the sale of water to vessels on the Panama Railroad docks in the city of Colon.

2. In view of the fact that water sold in Colon passes through Colon water mains, the following rates will be charged:

Per 1,000 gallons (minimum charge \$3).....\$0.50

Minimum charge for quantities less than

1,000 gallons furnished small vessels..... .50

Additional charge for taking water at night

between 5.30 p. m. and 6.30 a. m..... 2.00

GEO. W. GOETHALS,

Governor.

## Storing of Building Material.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., January 10, 1916.

CIRCULAR No. 707:

1. Superintendents and foremen in charge of work are directed to use special care in piling or storing lumber, scrap, pilings, building material, etc., to do the work in such manner that water will not collect in it or under it, or rats find a nesting place.

2. Sanitary inspectors will keep in touch with such work.

GEO. W. GOETHALS,

Governor.

## Regulating the Flying of Kites.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., January 12, 1916.

To all concerned.—Due to the trouble resulting from the contact of kite strings with the high power transmission line across the Isthmus, the flying of kites within half a mile of the transmission line is forbidden.

GEO. W. GOETHALS,

Governor.

## Economy in Sending Work to Shops.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., January 11, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

The expenditures for salaries and wages of the Mechanical Division are exceeding the allotment made for that purpose, and it is desired that an effort be made by all departments and divisions sending work to the Mechanical Division to exercise economy in that direction.

By this it is not intended, however, that work ordinarily sent to the shops for fabrication or repair should be transferred to some other point, as the result thus obtained would not reduce the total expense and would merely bring the general expense of the shops over a smaller quantity of work, and, in so doing, increase the proportionate overhead expense.

Please give this matter your personal attention.

GEO. W. GOETHALS,

Governor.

## Leave Regulations—Relief Days for Silver Employees.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., January 6, 1916.

CIRCULAR No. 632-17 (superseding circular No. 602-5):

A silver employee on paid relief days for his work on Sundays and holidays may be granted one-half day off with pay for each Sunday or holiday he works, provided the work on which he is engaged will not suffer thereby and no increase in force is necessary. This time off shall not be cumulative, except that in case where it is not practicable to allow the time off during the current calendar month, the relief time may be deferred until the following calendar month, but no later. The relief time thus deferred shall be in addition to any relief time earned during the month in which taken, but in no case shall the total relief time taken in one calendar month exceed four days.

2. Heads of departments or divisions are authorized to use their discretion in granting this leave.

GEO. W. GOETHALS,

Governor.

## Appointment.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., January 5, 1916.

CIRCULAR No. 661-24:

The appointment of Lieut. A. B. Reed, U. S. N., as a member of the Board of Local Inspectors and a member



of the Board of Admeasures on August 1, 1915, is hereby confirmed.

GEO. W. GOETHALS,  
Governor.

#### Baggage Transfer Rates.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., January 14, 1916.

#### Circular No. 267:

To all concerned—Effective Sunday, January 16, 1916, the Panama Railroad baggage transfer department will check passengers' baggage from Cristobal, Colon, or Balboa docks direct to the Tivoli Hotel or points in Panama City and vice versa, without requiring the passengers to recheck their baggage at the railroad station.

Passengers arriving at Colon or Cristobal who desire to have their baggage taken to the Tivoli Hotel or some point in Panama City will deliver same to the baggage transfer agent, who will collect the transfer charges and check it to destination.

If the transfer charges are not paid in advance and there is excess to collect for the rail haul, such collection will be made by delivering agent before the baggage is released, the forwarding agent using C. O. D. checks to cover.

The baggage of passengers arriving at Balboa docks who desire to go to Colon will be handled in the same manner, that is, direct to the Washington Hotel or connecting steamer, or any part of the city. If they wish to go to the Tivoli Hotel or to Panama City, their baggage will be handled on the Balboa-Panama train at the flat rates now in effect—15 cents, 25 cents, and 40 cents a piece, and an additional baggage transfer charge will be made for the wagon haul from the railroad station to destination.

It must be understood that this arrangement is only for the convenience of tourists and others who stop on the Isthmus, and should not be confused with the handling of baggage for through passengers whose tickets provide for the handling of baggage across the Isthmus to their connecting line.

The present rate of 15 cents for suit cases and hand baggage, 25 cents for trunks under 150 pounds, and 40 cents for trunks over 150 pounds, for one handling remains in effect, and for two handlings under the proposed system the rates will be as follows:

Suit cases and hand pieces, each.....\$ .25  
Trunks weighing under 150 pounds, each..... .50  
Trunks weighing over 150 pounds, each..... .75

The checks to be used for this purpose are form B. T. 9 (25 cents), B. T. 7 (50 cents), and B. T. 5 (75 cents). There is at present a rate of \$2.50 per load for the benefit of household goods, theatrical baggage, etc. This rate remains in effect, and if applied under the proposed system of two handlings, one at each end, \$5 per load will be charged, in addition to the charge on the railroad.

On baggage weighing in excess of the allowance on railroad tickets, the regular excess rates will be charged—one cent per pound for 30 miles or less; two cents per pound over 30 miles.

C. H. MOISENT,  
Superintendent.

#### Cabinet Perforators.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., January 11, 1916.

To all concerned—This department has received various complaints on account of unsatisfactory service of cabinet perforators. The matter has been taken up with the Foreman Printer with a view to obtaining a better make of perforator. He advises that he has a cabinet perforator that has been in use for more than seven years and suggests that the trouble with these perforators is that a number of employes abuse the limitations of the use of the cabinet by either punching too many sheets at a time, which dulls the plungers, or by neglecting to occasionally empty container which receives the cut-outs, thereby permitting plungers to contact with a solid mass of paper which, of course, bends the plunger coils and will render any make of perforator unserviceable.

It is believed that if these points are kept in mind better service will be obtained from the use of the cabinet perforators.

WM. R. GROVE,  
Chief Quartermaster.

#### Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, January 26, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the

office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeur's licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeur's licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, January 28, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By order of the chairman of the board,

GEO. J. VANDERLICE, Recorder.

#### Proposals for Purchase of Panama Railroad Station at New Gatun.

Sealed bids will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., January 25, 1916, and then opened in public, for the purchase of the building formerly used by the Panama Railroad Company as railroad station at New Gatun. The successful bidder will be required to remove building and clear ground of all obstructions within 60 days after date of acceptance of bid. Certified check, money order, or currency in amount of 20 per cent of the amount of bid will be required with bid as a guarantee that building will be removed, and payment of the balance will be required before any shipment is made. Panama Canal rate will be allowed on acceptance. The Panama Canal reserves the right to accept any or reject any or all bids. Bids should be marked "Proposal for purchase of Panama Railroad station at New Gatun," and addressed to Chief Quartermaster, Balboa Heights, C. Z.

#### COMMISSARY DEPARTMENT.

##### Orders Given to Solicitors.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., January 14, 1916.

#### MEMORANDUM TO ACCOMPANY BULLETIN NO. 491:

The strict enforcement of the provisions of the bulletin No. 491, in which it is instructed that solicitors on their rounds accept orders for groceries and cold storage only, is found to work a hardship at times in connection with the absence from the household of certain toilet and household articles.

Without the solicitation of orders for such articles, solicitors should be instructed to accept orders for supplies enumerated below whenever such orders are ordered to them.

Tooth paste, tooth powder, talcum powder, toilet soap, shaving soap, wash boilers, wash boards, wash tubs, clothes pins, clothes lines, buckets, scrub brushes, brooms, mops, wash basins, dish pans.

Essential household necessities will from time to time be added to this list, but it will not be extended to include other articles. Solicitors should have in their possession memorandum lists showing prices of the articles enumerated above.

In the larger commissaries, a small stock of these items may be carried in the regular grocery order room and orders therefor may be taken on grocery paid orders, if this is found to be a convenience in store management.

BENJ. L. JACOBSON,  
Depot Commissary.

#### Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective January 20 and subject to change each week. This list and the wholesale price list for fresh meats indicate the

costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of July 28, 1915, covering four pages. Copies of this list may be obtained on application, by mail or from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions will be effective January 20, 1916.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.		Price.
Beef suet, special, per lb.	.....	\$ .03 1/2
Beef suet, native, per lb.	.....	.03 1/2
Soup beef, special, per lb.	.....	.07
Soup beef, native, per lb.	.....	.05
Soup bone, special, per lb.	.....	.02
Soup bone, native, per lb.	.....	.02 1/2
Stew beef, special, per lb.	.....	.08
Stew beef, native, per lb.	.....	.08
Plate beef, special, per lb.	.....	.12
Plate beef, native, per lb.	.....	.08
Chuck roast, 3 lbs. up, special, per lb.	.....	.12
Chuck roast (3 lbs. up), native, per lb.	.....	.08
Rib roast, 2d cut (3 1/2 lbs. up), special, per lb.	.....	.16
Rib roast, 2d cut (3 1/2 lbs. up), native, per lb.	.....	.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	.....	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.....	.11
Pot roast, special, per lb.	.....	.20
Pot roast, native, per lb.	.....	.12
Rump roast, special, per lb.	.....	.20
Rump roast, native, per lb.	.....	.12
Porterhouse roast, choice, per lb.	.....	.31
Porterhouse roast, special, per lb.	.....	.22
Porterhouse roast, native, per lb.	.....	.16
Chuck steak, special, per lb.	.....	.13
Chuck steak, native, per lb.	.....	.09
Round steak, bottom, special, per lb.	.....	.13
Round steak, bottom, native, per lb.	.....	.09
Round steak, top, special, per lb.	.....	.15
Round steak, top, native, per lb.	.....	.10
Sirloin steak, special, per lb.	.....	.20
Sirloin steak, native, per lb.	.....	.12
Sirloin steak, choice cut, special, per lb.	.....	.23
Sirloin steak, choice cut, native, per lb.	.....	.16
Rump steak, special, per lb.	.....	.20
Rump steak, native, per lb.	.....	.12
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	.....	.34
Porterhouse steak (1 1/2 lbs. up), special, per lb.	.....	.23
Porterhouse steak (1 1/2 lbs. up), native, per lb.	.....	.17
Porterhouse steak, short, choice, per lb.	.....	.28
Porterhouse steak, short, special, per lb.	.....	.20
Porterhouse steak, short, native, per lb.	.....	.12
Tenderloin steak, special, per lb.	.....	.35
Tenderloin steak, native, per lb.	.....	.25
FRESH MEATS.		
Lamb, chops, per lb.	.....	.29
Lamb, chops, shoulder, per lb.	.....	.20
Lamb, legs, 5 to 8 lbs., pr lb.	.....	.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.....	.15
Lamb, stewing, per lb.	.....	.12
Mutton chops, short cut, per lb.	.....	.23
Mutton chops, shoulder, per lb.	.....	.17
Mutton, leg, 8 to 10 lbs., pr lb.	.....	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.....	.12
Mutton, stewing, per lb.	.....	.09
Pork, hams, fresh (see footnote), per lb.	.....	.25
Pork, loin, chops, or roast, per lb.	.....	.19
Pork, shoulders, fresh (see footnote), per lb.	.....	.20
Veal, chops, per lb.	.....	.40
Veal, chops, short, per lb.	.....	.27
Veal, cutlets, per lb.	.....	.45
Veal, loin for roasting, per lb.	.....	.40
Veal, shoulder for roasting not under 4 lbs., per lb.	.....	.20
Veal, stewing, per lb.	.....	.16
MISCELLANEOUS.		
Brains, calves', per lb.	.....	.07
Calve's head, ca.	.....	.86
Kidneys, beef, per lb.	.....	.10 1/2
Livers, beef, per lb.	.....	.08
Livers, calves', per lb.	.....	.24
Pates de foie gras, jar.	.....	.67
Pigs' feet, fresh, per lb.	.....	.05
Pigs' head, fresh, whole, ca.	.....	.83
Pigs' head, fresh, 1/2 head, ba.	.....	.42
Sausage, Bologna, per lb.	.....	.19
Sausage, frankfurter, per lb.	.....	.19
Sausage, heberwurst, per lb.	.....	.19
Sausage, pork, per lb.	.....	.23
Sausage, pork, homemade, per lb.	.....	.24
Sausage, Salami, per lb.	.....	.38
Spare ribs, pork, per lb.	.....	.13
Steak, hamburger, 16g.	.....	.17
Steak, hamburger, 20-pound container, per lb.	.....	.14
Sweetbread, beef, per lb.	.....	.21
Tails, ox, per lb.	.....	.09
Tongue, beef, whole, uncooked, per lb.	.....	.20
Yeast, per lb.	.....	.31
Yeast, cake.	.....	.02
CURED AND PICKLED MEATS.		
Bacon, breakfast, whole piece, per lb.	.....	.30
Bacon, breakfast, sliced, per lb.	.....	.31

	Price.
Bacon, sliced, jar	.32
Bacon, sliced, tin	.30
Bacon, squares, whole square, per lb.	.19
Bacon, strips, whole trip	.20
Beef, corned—No. 1, per lb.	.15
Beef, corned—No. 2, per lb.	.12
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.21
Ham, shoulder, boneless, sugar cured, whole	
shoulder, per lb.	.17
1. Ham, sugar cured (whole) per lb.	.22†
2. Ham, sugar cured (half) per lb.	.25†
3. Ham, sugar cured, sliced per lb.	.30†
1. Ham, sugar cured, boiled (whole) per lb.	.33
2. Ham, sugar cured, boiled (half)	.36
3. Ham, sugar cured, boiled (sliced)	.41
Pigs feet, pickled, per lb.	.08
Pork, bellies, per lb.	.10
Pork, clear, per lb.	.11
Pork, standard mess, per lb.	.11
Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs, per lb.	.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	.31
Broilers, milk fed, per lb.	.34
Capon, per lb.	.37
Chickens, fancy broilers, corn fed, per lb.	.30
Chickens, fancy broilers, milk fed, per lb.	.30†
Ducklings, per lb.	.26
Fowls, light, per lb.	.22
Fowls, western, dry, per lb.	.20
Geese, per lb.	.18
Grouse, ea.	.60
Squabs, ea.	.45
Turkeys, per lb.	.32

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	.46†
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.45†
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, ea.	1.50
Cheese, Edam, tin	.39
Cheese, gouda, per lb.	.32
Cheese, parmesan, per lb.	.39
Cheese, Philadelphia cream, cake	.09
Cheese, Roquefort, per lb.	.59
Cheese, snappy, cake	.09
Cheese, Swiss, per lb.	.43
Cheese, young America, per lb.	.24
Cream, 30 per cent, pt.	.17**
Cream, 30 per cent, qt.	.29**
Cream, 30 per cent, qt.	.52**
Eggs, fresh, per doz.	.45*
Eggs, fresh, 1 doz, only	.23*
Fer-mil-lac, bottle	.25**
Ice cream, (see footnote 4)	.25†
Ice cream, (see footnote 4) gal.	.25†
Milk, Steril and farmed, qt.	.15†
Oleomargarine, per lb. tin	.29

## FISH.

Bluefish, fresh, per lb.	.19
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.11
Habibut, fresh, per lb.	.09
Herring, smoked, per lb.	.10
Oysters, fresh, per qt.	.40†
Salmon, fresh, per lb.	.11
Whitefish, smoked, per lb.	.24

## VEGETABLES.

Beets, per lb.	.02‡
Brussels sprouts, per qt.	.19†
Cabbage, per lb.	.02*
Carrots, per lb.	.02
Cauliflower, per lb.	.15†
Celery, per head	.09
Chocho, each	.02
Corn, green, per doz.	.12
Cucumbers, per lb.	.10†
Lettuce, per lb.	.03†
Onions, per lb.	.03†
Parsnips, per lb.	.02‡
Peas, green, per lb.	.09
Plantains, per doz.	.12
Potatoes, sweet, American, per lb.	.04*
Potatoes, white, per lb.	.03*
Potatoes, per lb.	.03
Tomatoes, per lb.	.09
Turnips, per lb.	.01†‡
Yams, lucas, per lb.	.03

## FRUITS, DRIED.

Apples, evaporated, per lb.	.12
Apples, evaporated, per lb.	.16
Currants, cleaned, pkg.	.15
Figs, dried, 15-oz box	.21
Peaches, evaporated, per lb.	.08
Pears, evaporated, per lb.	.10
Pear, citron, per lb.	.20
Pear, lemon, per lb.	.16
Pear, orange, per lb.	.16
Prunes, stewing, per lb.	.08
Raisins, seedless, per lb.	.11
Raisins, table cluster, per lb.	.15

## FRUITS, FRESH.

Apples, fresh, per lb.	.04
Apples, fresh, select, per lb.	.09*
Bananas, 8 hands and over, per bunch.	.40
Bananas, 4 and 5 hands, per bunch.	.28
Bananas, ea.	.00†
Cranberries, per lb.	.11
Grapes, Malaga and Tokay, per lb.	.20
Grapefruit, select, per lb.	.07
Grapefruit, tropical, ea.	.03‡
Lemons, per doz.	.17†
Oranges, select, ea.	.04
Oranges, tropical, doz.	.12

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, January 20, 1916:

## FISH.

	Price.
Corbina, per lb.	.11
Mackerel, per lb.	.11
Pan fish, per lb.	.11
Red snapper, per lb.	.11
Turtle (wt. 100 to 200 lbs.), per lb.	.07

## FRUITS.

Coconuts, dry, ea.	.05
Coconuts, water, ea.	.05†
Pineapples, green, doz.	.12
Sugar cane, ea.	.03
Limes, per 100	.75
Plantain, ea.	.01

## VEGETABLES.

Celery, soup, per bunch.	.04
Chayotes, ea.	.12
Corn, green, doz.	.02
Cucumbers, per lb.	.21*
Egg plant, special, ea.	.04
Ginger, per lb.	.05
Lettuce, per lb.	.10†
Mint, per bunch.	.04
Olives, ea.	.00†
Onions, green, green, doz.	.04
Parsley, per bunch.	.04
Peppers, hot, per doz.	.05
Peppers, sweet, each.	.01
Radishes, per bunch.	.04
Spinach, per bunch.	.02
Roses (Hospital Farm), per doz.	.50

\* Indicates advance from preceding list.

† Indicates five cents allowed for return of bottle.

‡ Indicates reduction from preceding list.

Sold only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham of 1/2 shoulder or fresh pork will be sold.

## Misdirected Letters.

BALEOA HEIGHTS, C. Z., January 19, 1916.  
The following insufficiently addressed letters and packages have been received at the office of the Director of Posts and may be procured upon request of the addressee:

Albert, Joseph A.	Gray, Mrs. Winifred
*Arden, Oliver	*Harden, H. H. D.
Buck, C. C.	Herron, C. D.
Campbell, C. P.	Hess, B. F.
Cash, Robert	Hezel, Wm.
†Cannon, Sergt. Jas. N.	*Holston, Mrs. Sophia
†Chapman, Mrs. F.	Jenkins, Bishop
Cottman, Mrs. C.	Kant, William
*Coughenou, Sergt. A. J.	Lipzinski, John
Curran, John	McConnell, James L.
Eschmann, J.	†Schinhammer, Luise
Euro, Lloyd B.	*Snyder, Edward
*Evitt, I. H. Q.	Snyder, R. A.
Fely, Thos. J.	*Stewart, Sergt. E. L.
†Fouad, Clyde H.	Strauss, Renato
Garfield, McKinney	Valentine, Calvin
†Gooden, Jane	Wisler, John J.

\* Card. † Package.

## Tide Predictions.

Panama (Balboa) tide predictions for the next seven weeks are given in this table:

DATE.	Time and height of high and low water.	Time and height of high and low water.
Wed., Jan. 19.....	3:05 9:30 15:41 21:49	13:1 12:9 2:9
Thurs., Jan. 20.....	3:45 10:09 16:22 22:27	13:4 10:9 12:2
Fri., Jan. 21.....	4:26 10:45 16:59 23:02	13:5 1:6 13:4 2:4
Sat., Jan. 22.....	5:03 11:19 17:34 23:40	14:0 1:0 14:2 1:7
Sun., Jan. 23.....	5:41 11:53 18:05	14:1 11:53 18:05
Mon., Jan. 24.....	6:16 12:27 18:38	14:2 12:3 18:8
Tues., Jan. 25.....	6:54 13:04 19:14	1:7 13:9 1:6 14:6
Wed., Jan. 26.....	7:32 13:45 19:51	1:34 7:32 13:45 19:51
Thurs., Jan. 27.....	8:11 14:31 20:34	1:9 13:6 2:0 14:4
Fri., Jan. 28.....	8:51 15:17 21:29	2:21 8:11 14:31 20:34
Sat., Jan. 29.....	9:31 16:06 22:36	2:21 8:51 15:17 21:29
Sun., Jan. 30.....	10:11 16:51 23:52	2:21 9:31 16:06 22:36
Mon., Jan. 31.....	10:51 17:36 25:09	2:21 10:11 16:51 23:52

## FEBRUARY.

DATE.	Time and height of high and low water.	Time and height of high and low water.
Tues., Feb. 1.....	1:15 7:39 13:46 20:03	14:1 1:4 13:9 2:1
Wed., Feb. 2.....	2:06 8:38 14:45 21:02	14:8 0:4 14:0 2:1
Thurs., Feb. 3.....	3:05 9:31 15:40 21:54	15:5 -0:5 15:9 0:1
Fri., Feb. 4.....	3:58 10:19 16:31 22:41	16:2 -1:4 16:8 -0:7
Sat., Feb. 5.....	4:50 11:03 17:19 23:27	16:9 0:1 17:6 0:5
Sun., Feb. 6.....	5:39 11:47 18:05	16:3 -1:4 16:8 -0:7
Mon., Feb. 7.....	6:11 12:29 18:50	5:39 11:47 18:05
Tues., Feb. 8.....	6:55 7:08 13:14 19:29	6:11 12:29 18:50
Wed., Feb. 9.....	7:41 7:53 14:00 20:10	6:55 7:08 13:14 19:29
Thurs., Feb. 10.....	8:28 8:35 14:48 20:54	7:41 7:53 14:00 20:10
Fri., Feb. 11.....	9:16 9:23 15:37 21:44	8:28 8:35 14:48 20:54
Sat., Feb. 12.....	10:04 10:11 16:26 22:34	9:16 9:23 15:37 21:44
Sun., Feb. 13.....	10:52 11:00 17:15 23:24	10:04 10:11 16:26 22:34
Mon., Feb. 14.....	11:40 11:48 18:05 24:14	10:52 11:00 17:15 23:24
Tues., Feb. 15.....	12:28 12:36 18:55 25:04	11:40 11:48 18:05 24:14
Wed., Feb. 16.....	13:16 13:24 19:44 25:54	12:28 12:36 18:55 25:04
Thurs., Feb. 17.....	14:04 14:12 20:34 26:44	13:16 13:24 19:44 25:54
Fri., Feb. 18.....	14:52 15:00 21:24 27:34	14:04 14:12 20:34 26:44
Sat., Feb. 19.....	15:40 15:48 22:14 28:24	14:52 15:00 21:24 27:34
Sun., Feb. 20.....	16:28 16:36 23:04 29:14	15:40 15:48 22:14 28:24
Mon., Feb. 21.....	17:16 17:24 23:54 30:04	16:28 16:36 23:04 29:14
Tues., Feb. 22.....	18:04 18:12 24:44 30:54	17:16 17:24 23:54 30:04
Wed., Feb. 23.....	18:52 19:00 25:34 31:44	18:04 18:12 24:44 30:54
Thurs., Feb. 24.....	19:40 19:48 26:24 32:34	18:52 19:00 25:34 31:44
Fri., Feb. 25.....	20:28 20:36 27:14 33:24	19:40 19:48 26:24 32:34
Sat., Feb. 26.....	21:16 21:24 28:04 34:14	20:28 20:36 27:14 33:24
Sun., Feb. 27.....	22:04 22:12 28:94 35:04	21:16 21:24 28:04 34:14
Mon., Feb. 28.....	22:52 23:00 28:84 35:54	22:04 22:12 28:94 35:04
Tues., Feb. 29.....	23:40 23:48 29:74 36:44	22:52 23:00 28:84 35:54

## MARCH.

DATE.	Time and height of high and low water.	Time and height of high and low water.
Wed., March 1.....	0:56 7:24 13:36 19:51	13:7 1:8 14:0 2:1
Thurs., March 2.....	1:59 8:22 14:32 20:48	1:59 8:22 14:32 20:48
Fri., March 3.....	2:53 9:13 15:22 21:37	2:53 9:13 15:22 21:37
Sat., March 4.....	3:43 9:58 16:09 22:22	3:43 9:58 16:09 22:22
Sun., March 5.....	4:31 10:41 16:53 23:04	4:31 10:41 16:53 23:04
Mon., March 6.....	5:16 11:21 17:34 23:43	5:16 11:21 17:34 23:43
Tues., March 7.....	6:00 12:00 18:14	6:00 12:00 18:14
Wed., March 8.....	6:43 12:37 18:54	6:43 12:37 18:54

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low watersprings, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States.  
Due at New Orleans on the following Friday.  
Every Monday to New York, for all States.  
Due at New York the following Monday.  
Every Thursday, temporarily, to New York, for all States.  
These despatches are by vessels of the Panama



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., January 16, 1916.)

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net

Jan. 10.....	Carib II.....	Panamanian..	Robert Wilcox & Co.....	Panama.....	Colon.....	Ballast.....		244	212
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PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
Jan. 10.....	Manuel Calvo.....	Spanish Line.....	Barcelona.	Jan. 12.....	Manuel Calvo.....	Spanish Line.....	Barcelona.
Jan. 12.....	Venezuela.....	French Line.....	St. Nazaire.	Jan. 14.....	Rosalie Mahony.....	Olson & Mahony.....	Frontera, Mexico.
Jan. 15.....	Cavina.....	Elders & Fyffes.....	Port Limon.	Jan. 15.....	Cavina.....	Elders & Fyffes.....	Bristol & Jamaica.
				Jan. 16.....	Venezuela.....	French Line.....	St. Nazaire.

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Jan. 19.....	Belita.....	Dampskacties Belita.....	Philadelphia.		Jacob Luckenbach.....	Luckenbach Line.....	New York.
					Belita.....	Dampskacties Belita.....	

PORT OF BALBOA.

## ARRIVALS.

## DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
Jan. 10.....	Capt. A. F. Lucas.....	Standard Oil Co.....	Tacoma.	Jan. 10.....	Pennsylvania.....	Pacific Mail S. S. Co.....	San Francisco.
Jan. 10.....	S. O. Barge No. 93.....	Standard Oil Co.....	San Francisco.	Jan. 11.....	Ucayali.....	Peruvian Line.....	Callao.
Jan. 10.....	Wiggins & Mordey.....	Williams & Mordey.....	Tacoma.	Jan. 12.....	Jamaica.....	Pacific Steam Nav. Co.....	Buenaventura.
Jan. 11.....	Perru.....	Pacific Steam Nav. Co.....	Talcahuano.	Jan. 12.....	Pleides.....	Luckenbach Line.....	Calita Buena.
Jan. 11.....	Manovi.....	Pacific Steam Nav. Co.....	Guayaquil.	Jan. 13.....	Capt. A. F. Lucas.....	Standard Oil Co.....	San Francisco.
Jan. 11.....	Aysen.....	South American S. S. Co.....	Valparaiso.	Jan. 13.....	S. O. Barge No. 93.....	Standard Oil Co.....	San Francisco.
Jan. 12.....	Luckenbach Line.....	San Francisco.	Valparaiso.	Jan. 14.....	Guatemala.....	Pacific Steam Nav. Co.....	Valparaiso.
Jan. 12.....	Hualagala.....	Peruvian Line.....	Valparaiso.	Jan. 16.....	Margam Abbey.....	Williams & Mordey.....	Bordeaux.
Jan. 12.....	Erroll.....	J. Warrack & Co.....	Portland.				
Jan. 13.....	City of Para.....	Pacific Mail S. S. Co.....	San Francisco.				
Jan. 13.....	Musicien.....	Pacific Steam Nav. Co.....	Cocos.				
Jan. 15.....	Acajalla.....	Pacific Steam Nav. Co.....					

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

.....	Pacific.....	Emery Line.....	San Francisco.	Jan. 17.....	Aysen.....	South American S. S. Co.....	Valparaiso.
.....	Coaster.....	C. H. Higgins.....	San Francisco.	Jan. 17.....	Perru.....	Pacific Steam Nav. Co.....	Peruvian ports.
.....	Siam.....	East Asiatic Company.....	San Francisco.	Jan. 18.....	Manovi.....	Pacific Steam Nav. Co.....	Tumaco.
Jan. 18.....	Alfred Nobel.....	Dampskacties Concordia.....	Iquique.	Jan. 20.....	City of Para.....	Pacific Mail S. S. Co.....	San Francisco.
Jan. 20.....	Rauna.....	Andrew Olsen.....	South Pac. ports.				
Jan. 21.....	Colusa.....	N. Y. & Pacific S. S. Co.....	San Francisco.				
Jan. 22.....	Charente S. S. Co.....	San Francisco.					
Jan. 22.....	Eureka.....	Pacific Coast Co.....					

Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

\*NOTE—The sailings on Monday, February 7 and March 6, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m. connects with the despatches for the two sailings mentioned above.

†NOTE—When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, January 15, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gamboua	Gatun Lake.	Miraflores Lake.
Sun., Jan. 9.....	125.95	92.38	86.59	86.60	51.97
Mon., Jan. 10.....	126.00	92.42	86.61	86.60	51.86
Tues., Jan. 11.....	126.00	92.41	86.60	86.60	51.68
Wed., Jan. 12.....	125.85	92.28	86.70	86.63	51.86
Thurs., Jan. 13.....	125.80	92.19	86.71	86.63	51.52
Fri., Jan. 14.....	125.75	92.12	86.70	86.64	51.95
Sat., Jan. 15.....	126.20	92.64	86.69	86.65	51.90
Heights of low water to nearest foot.	125.0	91.0			

Coal.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trammed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.90; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

## Rainfall from January 1 to 15, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.	CRISTOBAL-COLON TO NEW YORK.	

<i>Pacific Section—</i>	<i>Ins.</i>	<i>4</i>	<i>Ins.</i>	<i>34</i>	Alliance.....	P. R. R. Jan.	27.....	Feb.	2
Balboa.....	.31			.34	Pastores.....	U. F. C. Jan.	29.....	Feb.	6
Balboa Heights.....	.29	4		.53	Zacapa.....	U. F. C. Feb.	2.....	Feb.	9
Empire.....	.30	9		.60	Alliance.....	P. R. R. Feb.	3.....	Feb.	9
Miraflores.....	.70	14		.82	Calamares.....	U. F. C. Feb.	5.....	Feb.	13
Pedro Miguel.....	.19	14		.31	Colon.....	U. F. C. Feb.	9.....	Feb.	16
<i>Central Section—</i>					Colon.....	P. R. R. Feb.	10.....	Feb.	16
*Culebra.....	.87	14		.93	Alliance.....	P. R. R. Jan.	20.....	Jan.	26
*Camacho.....	.63	14		.66	Zacapa.....	U. F. C. Jan.	20.....	Jan.	27
Empire.....	.45	14		.46	Calamares.....	U. F. C. Jan.	24.....	Jan.	31
Gamboua.....	1.40	14		1.40	Colon.....	P. R. R. Jan.	27.....	Feb.	2
*Juan Mina.....	.11	15		.17	Carrillo.....	U. F. C. Jan.	27.....	Feb.	3
Alhajuela.....	.02	5 & 8		.06	Tenadores.....	U. F. C. Jan.	31.....	Feb.	7
*Wigia.....	.02	8		.03	Advance.....	P. R. R. Feb.	3.....	Feb.	10
*Frijoles.....	1.06	14		1.06	Santa Marta.....	U. F. C. Feb.	3.....	Feb.	10
*Monte Lirio.....	.65	15		.75	Metapan.....	U. F. C. Feb.	7.....	Feb.	15
<i>Atlantic Section—</i>					Panama.....	P. R. R. Feb.	10.....	Feb.	16
Gatun.....	.07	14		.21	Almirante.....	U. F. C. Feb.	10.....	Feb.	17
*Brazos Brook.....	.09	8		.17	Pastores.....	U. F. C. Feb.	12.....	Feb.	21
Colon.....	.10	8		.12	Alliance.....	P. R. R. Feb.	17.....	Feb.	23
Bocas del Toro.....	3.21	5		10.75					

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values, midnight to midnight.

†Standard rain gage—readings at 8 a. m. daily.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.			
Vessel.	Line.	Sails.	Arrives.
Carrillo.....	U. F. C. Jan.	12.....	Jan. 19
Colon.....	P. R. R. Jan.	13.....	Jan. 18
Tenadores.....	U. F. C. Jan.	15.....	Jan. 23
Santa Marta.....	U. F. C. Jan.	19.....	Jan. 26
Advance.....	P. R. R. Jan.	20.....	Jan. 27
Metapan.....	U. F. C. Jan.	22.....	Jan. 31
Almirante.....	U. F. C. Jan.	26.....	Feb. 2

## CRISTOBAL-COLON TO NEW ORLEANS.

CRISTOBAL-COLON TO NEW ORLEANS.			
Vessel.	Line.	Sails.	Arrives.
Carrigo.....	U. F. C. Jan.	23.....	Jan. 28
Atenas.....	U. F. C. Jan.	23.....	Jan. 30
Parimima.....	U. F. C. Jan.	30.....	Feb. 3
Turrialba.....	U. F. C. Jan.	30.....	Feb. 6
Coppename.....	U. F. C. Jan.	6.....	Feb. 11
Abangarez.....	U. F. C. Feb.	6.....	Feb. 13
Atenas.....	U. F. C. Feb.	13.....	Feb. 18
Coppename.....	U. F. C. Feb.	13.....	Feb. 20
Heredia.....	U. F. C. Feb.	16.....	Feb. 25
Turrialba.....	U. F. C. Feb.	20.....	Feb. 27





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to nearest post office), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government department, representative of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the roll roll.

All subscriptions expire on December 31. No new subscriptions are charged as beginning from the first of the quarter of the year in which they are closed.

Remittances should be made to pay on or before December 31, on this basis.

Subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Concrete Pontoons for Small Boat Landings at Balboa Docks.

Four concrete pontoons to support gangways at the head of the slips alongside Pier 18 at Balboa are being constructed on the floor of the new dry dock at Balboa. Each will be 120 feet long by 28 feet wide by eight feet deep, and as the pontoons are designed to support heavy weights and withstand severe knocking in their use as landings for small boats, the system of reinforcement is elaborate. The reinforcement is being assembled, and it is expected that the pouring of concrete will begin about February 1. The truss bridges to serve as gangways at the landings were completed some time ago, and two are now in use at Dock 17, on the south side of Pier 18, with their lower ends resting on steel pontoons placed in this service temporarily.

#### Small Government Vessels Transferred through the Canal.

The submarines C-1, C-3, and C-5 of the flotilla which has been stationed at the Atlantic entrance to the Canal, were taken through the Canal on Sunday, January 23, in tow of the tug *Potomac*. The Coast Artillery Corps mineplanter *General J. M. Schofield*, which arrived at Cristobal on Wednesday, January 19, from Guantanamo, and the Canal launches *Pacific* and *Barbacoas* were handled through the Canal in company with the *Potomac* and the submarines.

#### Other Ships Leave Balboa for Strait of Magellan.

The steamship *Erroll*, which arrived at Balboa from Portland on January 12, on the possibility of making the transit of the Canal, cleared for Coronel on Sunday, January 23,

under instructions from her operators to complete her voyage to the United Kingdom by way of the Strait of Magellan, after coaling at Balboa. The steamship *Arna*, which had arrived from San Francisco, sailed on Monday, January 24, and the *Howick Hall* and *Musician*, which had similarly come in from north Pacific ports on the chance of going through the Canal, are preparing to sail as soon as they have finished taking on coal and supplies. The *Arna* is bound for Avonmouth, the *Howick Hall* for Baltimore or New York, and the *Musician* for Liverpool.

#### Government Vessels to Pay Wharfage.

A ruling has been made to the effect that all vessels of departments of the United States Government other than The Panama Canal or the Panama Railroad, using terminal docks at the Canal, shall be charged wharfage at the same rates as apply to commercial vessels. Launches and other small craft of other departments, however, may be permitted to tie up at the docks without charge if the space is not otherwise required for the operation or business of The Panama Canal or Panama Railroad.

#### The "A. J. West" Preparing to Go Into Dry Dock.

The schooner *A. J. West*, which was handled through the Canal on January 6 and 7 at the time the steamship *Newton* completed the transit, began the discharge of her cargo last week at Dock 13, Cristobal, in preparation for going into dry dock. The *A. J. West* is 161 feet long and drew 17 feet of water when passing through the Canal; by discharging cargo she will reduce her draft to less than 13½ feet, which is the depth of water over the sill at the 300-foot dry dock at Mount Hope.

This schooner arrived at Balboa on January 1, from Manila, and was accorded the privilege of going through the Canal so that she might go into dry dock, as she was leaking too badly to put to sea without repairs. The *A. J. West* left Manila on May 30, called at Honolulu on August 26, and reached Balboa on January 1. She was 88 days at sea from Manila to Honolulu, and 128 days from Honolulu to Balboa, or over seven months from Manila to Balboa.

#### Fill for Yard in Rear of Repair Wharf at Paraiso.

Pipeline suction dredge No. 86, which has been employed in the Cut south of Gold and Contractor's Hills, rehandling spoil from ladder dredges working at the bases of the slides, directly to the north of the two hills, was transferred to a point opposite the repair wharf at Paraiso to pump spoil into a hollow behind the wharf for the purpose of making a fill on which a yard can be laid out. Following the completion of this fill, the dredge is pumping spoil into a pond east of the Panama Railroad track, to fill it and do away with the oiling which has been neces-

sary for the prevention of mosquito breeding. The spoil which the dredge is using for fill is brought from the slides in barges.

#### The "Mars" Barge Exhibit for Panama National Exposition.

The collier *Mars* of the United States Navy arrived at Balboa from San Francisco on Sunday, January 23, with 1,000 tons of naval supplies and 300 tons of United States Government exposition exhibits, the latter shipped from the Panama-Pacific International Exposition at San Francisco to the Panama National Exposition, which is scheduled to open next month in the city of Panama.

#### Progress of Excavation at the Cu'e'sra Slides.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, January 24, amounted to 199,015 cubic yards. Other excavation in the Cut during the same period amounted to 21,732 cubic yards, making a total for the week of 220,747 cubic yards. In addition, 14,002 cubic yards were rehandled by the pipeline suction dredge No. 86, and the Belgian ladder dredge *Marmot*.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
<i>Cuspidus</i> ....	13-yard App't.	59,010
<i>Gambier</i> ....	13-yard 1 pp r.	77,980
<i>Potomac</i> ....	13-yard 1 pp r.	325
<i>Coras</i> ....	Ladder	34,085
<i>Culebra</i> ....	Suction	21,732
No. 86 ....	Pipeline suction	12,812
<i>Marmot</i> ....	Belgian ladder	13,320
<i>Carénis</i> ....	5-yard dipper	16,685

The *Paraiso* was out of service throughout the week, with the exception of one hour, having been withdrawn for repairs in the morning of Monday, January 17. The other dredges named, excepting the *Marmot*, *Cardenas*, and No. 86, worked full time, three shifts a day.

The average aggregate output from the Cut during the 13 weeks preceding that ending at midnight of Monday, January 24, was 261,705.6 cubic yards, not including rehandled spoil, the total amount of primary excavation during that period having been 3,402,173 cubic yards.

#### Departure of the Twenty-seventh Infantry.

The Army transport *Logan*, which arrived at Balboa from San Francisco on Wednesday, January 19, to take the Twenty-seventh Infantry from the Canal Zone, where it had been waiting since October 6, to the Philippine Islands, sailed at 10 a. m., Tuesday, January 25, for Manila, by way of Honolulu.

#### Money Orders for Costa Rica.

Due to the fact that a number of employees are spending their leave in Costa Rica, attention is called to the fact that Canal Zone post-offices draw domestic money orders payable in Costa Rica.

## QUARANTINE ACTIVITIES.

## Least Number of Inspections in December of Any Month of Year.—Comparative Figures.

Emigration from the Isthmus to foreign ports during the month of December, 1915, exceeded immigration from foreign ports by 62, the total of persons landing from foreign ports being 2,604 and of those embarking, 2,666, according to the count kept by the quarantine officials of the ports of Cristobal-Colon and Balboa-Panama.

This makes the net emigration since July 1, 1913, a period of two years and six months, amount to 26,957. This is at the rate of \$98.6 per month, or 29.5 per day. During approximately the same period the Canal force diminished from 42,262 on June 25, 1913, to 21,915 on December 23, 1915. This was a decrease of 20,347, or 48 per cent, and was at the rate of 678 per month, or 22.3 per day.

The total number of persons examined at the ports, including passengers and crews, during December was 10,419. Of the 3,208 passengers, 379 were United States soldiers. The total examinations were less than in any other month of the year, being 100 less than the number in November, the month of previous lowest record. The falling off in the latter months of the year has been due to the closing of the Canal. Though there was a slight traffic in December of vessels which had been waiting at the entrances, the crews of these ships had been examined at the time of their arrival at the Canal.

A comparison of the numbers of passengers and crews examined in the months of the year 1915 is afforded by this tabulation:

Month.	Passengers.	Crews.	Total.
January.....	3,887	10,232	14,119
February.....	4,300	9,332	13,632
March.....	6,014	12,155	18,169
April.....	3,605	11,032	14,637
May.....	5,391	11,772	17,163
June.....	4,969	12,756	17,725
July.....	4,974	14,136	19,110
August.....	4,900	14,814	19,714
September.....	4,606	13,514	18,120
October.....	3,940	10,516	14,456
November.....	3,289	7,230	10,519
December.....	3,208	7,211	10,419
Total.....	53,083	134,720	187,803

The number of vessels entering the terminal ports was also less in December than in any preceding month of the year. The number was 98, as compared with an aggregate of vessels, calling at the terminal ports or passing through the Canal, of 103 in November, 168 in October, 234 in September, 221 in August, and 246 in July. Traffic through the Canal in July was the greatest for any month since its opening.

The total number of persons examined by the quarantine officers during the calendar year, to January 1, 1916, was 187,803. This was at the rate of 15,650.25 per month, or 514.5 per day.

A summary of the quarantine activities on the Isthmus during December is given in this consolidated report for the ports of Balboa-Panama and Cristobal-Colon:

Number of vessels inspected and passed.....	89
Number of vessels held in quarantine.....	9
Total.....	98
Number of vessels fumigated on arrival.....	8
Number of vessels fumigated on departure.....	3
Total.....	11
Number of crew examined.....	7,211
Number of passengers examined (including 379 U. S. troops).....	3,208
Total.....	10,419

Number of supplementary inspections.....	1,136
Number of persons vaccinated at ports of arrival because of compulsory vaccination law.....	399
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law.....	532
Total.....	931
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and plague.....	245
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague.....	1,637
Total.....	1,882
Number of persons landed from foreign ports:	
Cabin.....	1,465
Steerage.....	1,139
Total.....	2,604
Number of persons embarked for foreign ports:	
Cabin.....	1,499
Steerage.....	1,167
Total.....	2,666
Number of persons arrived from coast towns on small launches and sailing craft.....	1,769
Number of persons sailing for coast towns on small launches and sailing craft.....	1,671
Apparent increase for month from coast towns.....	98
Apparent decrease for month from foreign ports:	
Cabin.....	34
Steerage.....	28
Total (decrease).....	62
Number of immigrants recommended for deportation.....	8
Number of bills of health issued or viséd.....	44
Number of inspections of docks.....	115
Number of inspections of vessels at docks.....	168
Number of persons landed.....	4,373
Less number for Pacific ports.....	185
Total.....	4,188
Total number of persons sailing.....	4,337

Total apparent decrease for month..... 149  
The immigration report for Colon, which is the port receiving the majority of passengers, classifies the immigrants during December, 1915, by places of origin, as follows:

	Cabin	Steerage
Europe.....	25	10
United States.....	655	403
Jamaica and West Indies.....	58	249
Venezuela.....	2	0
Colombia.....	102	157
Cuba.....	18	5
Costa Rica.....	88	23
Bocas del Toro.....	24	137
Coast towns.....	0	215
Total.....	972	1,202

Grand total..... 2,174  
Of the 2,174, the men, exclusive of troops, numbered 868; women, 492; children, 220. The United States troops numbered 379, and 215 were not classified.

## Admission of Women to Stenographer and Typewriter Examination.

Information has been received from the Civil Service Commission at Washington, D. C., that women will be admitted to the examination to be held on the Isthmus dur-

ing the spring of 1916 for the position of stenographer and typewriter in The Panama Canal service.

This examination will be held about April 2, 1916. The date is to be left blank in applications.

## Civil Service Examinations.

Examinations for the following positions are scheduled to be held probably on March 19 (date to be left blank in applications): Aid, Coast and Geodetic Survey; assistant, Philippine Service; assistant inspector of boilers, local inspector of boilers, local inspector of hulls, Steamship-Inspection Service; computer, Coast and Geodetic Survey; draftsman, Engineer Department at large; draftsman, copyist topographic, Departmental Service; draftsman, marine engine and boiler, draftsman, ship, Navy Department; engineer, second-class (or assistant) steam, Departmental Service; forest assistant, Forest Service; industrial teacher, Philippine Service; junior engineer mechanical, or electrical, Engineer Department at large; laboratory apprentice, Bureau of Standards; land law clerk, Departmental Service; physician, all services, except Philippine; statistical clerk, Departmental Service; teacher, Philippine Service; veterinarian, Bureau of Animal Industry and Quartermaster Corps.

The spring edition of the manual of examinations has arrived and is ready for distribution.

Announcement will be made later of the examinations to be held in April.

Applications should be secured from and filed with the office of the Board of Civil Service Examiners, Balboa Heights, C. Z. Applications will not be received after February 23; this date may be changed if necessary. A card of admission will be sent to those found eligible to be admitted, upon the receipt of the questions from the Civil Service Commission.

In answer to the questions as to residence, applicants must show residence in a State or Territory of the United States, and county thereof, up to the time of filing application, a ruling having been made that employees of The Panama Canal can claim residence in the United States while temporarily employed on the Isthmus.

## Obituary.

George N. Nielsen, employed as a shipwright at the Cristobal dry dock shops of the Mechanical Division, died in Ancon Hospital on January 10. His residence in the United States was at 533 West 124th Street, New York City.

The 1,000-yard steel barge No. 102 was towed from Gaillard Cut to Mount Hope on January 26, for repairs at the dry dock.

## Deceased Employees.

Name.	Clerk No.	Native of	Isthmian Residence.	Employed by	Date of death
Burgess, Jacob.....	57211	Jamaica.....	Panama.....	Supply Dept.....	Jan. 19, 1916.
James, James.....	21865	Honduras.....	Getun.....	Dredging Div.....	Jan. 8, 1916.
Nielsen, George N.....	2816	U. S. A.....	Colon.....	Mechanical Div.....	Jan. 10, 1916.
Williams, David.....	79988	Jamaica.....	Colon.....	P. R. R.....	Jan. 10, 1916.
Williams, Joseph.....	30631	Jamaica.....	Folks River.....	Mechanical Div.....	Jan. 7, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## REPAIRING BAFFLE PIERS.

Damage 1 by Rush of Water at Spillway.—Wasting Water through Lock Culverts.

Advantage is being taken of the reduced runoff over the Gatun Lake watershed during the dry season to make repairs to the concrete baffle piers at the foot of the ogee of the Gatun Spillway, while the gates can be kept closed. One of the heavy cast iron plates with which the upstream faces of the piers are armored was washed away during the past rainy season, and all of the piers suffered considerable erosion. The face plate will be restored and all of the piers will be fitted with cast iron plates on the sides, and with floor plates at their bases in front, leaving only the downstream faces unarmored. The side plates are nine feet two inches in height by five feet wide and two inches thick. The concrete is to be chipped to give them close contact with the angles of the upstream plates, and they will be held in place by anchor bolts. The floor plates will be set in the concrete at the base of the upstream face of the piers. During the past rainy season the impact of the water, rushing down from the crest of the ogee, 59 feet above the floor of the discharge channel, caused considerable scouring at the bases of the piers.

The piers are irregular hexagons in plan, with the greatest face upstream, and greatest diameter about 15 feet. They are built up from rock at elevation -2 feet, or 12 feet below the surface of the floor, and rise to a height of eight feet above the floor. They have been built in a double line, with the front row of 10 occupying an arc of 150 degrees in a circle of a radius of 200 feet, and spaced 18 feet apart, side from side. The second row, containing 11 piers, is 15 feet back of the front, and its piers are set opposite the intervals of the front row.

The runoff from the watershed of the lake since the beginning of the dry season has been sufficient to raise the surface slightly, and water has been wasted through the culverts of Gatun Locks to avoid using the spillway while the repairs to the baffle piers are under way. Both the east and west wall culverts were used for several hours on January 19 and 20. The hydrographic forces are endeavoring to keep the level of the lake around 86.60 feet above seal level, not allowing it to pass above 86.70, lest a freshet make it necessary to open the spillway gates in order to control the rise of the waters.

The intakes of the culverts were opened wide, but at a point of control by two rising stem gate valves, one of the two valves was opened only five-eighths of the way, giving an opening of 13-16 of complete opening for each culvert, or an aggregate opening of  $1\frac{1}{2}$  culverts. This gave a discharge of approximately 9,600 cubic feet per second, as compared with a rate of approximately 12,300 cubic feet per second for one spillway gate, when the elevation of the surface is at 86.50.

The equivalent of one culvert with  $1\frac{1}{2}$ -valve opening was run on January 19 for 10 7-12 hours, with a total discharge of approximately 375 million cubic feet. On January 20 there was the equivalent of a  $1\frac{1}{2}$ -valve discharge in one culvert for  $5\frac{1}{2}$  hours, or a total of 193 million cubic feet, followed by a discharge from one culvert of 5,890 cubic feet per second for four hours, or 84.8 million cubic feet. During the two days a quantity of water estimated at 648.5 million cubic feet was let out through

the lock culverts. The lake was lowered from 86.73 to 86.65, or .08 foot, on January 19, and from 86.65 to 86.59, or .06 foot, on January 20.

This is the first time that the culverts have been used for discharging surplus water from the lake to lower its surface, since the lake has reached its full capacity, and exact figures on the rate of discharge are not obtainable. Preparations are being made to have the flow measured with more accuracy when the culverts are used next, in order that the losses of velocity due to culvert friction and the back water effect of the sea may be calculated, and the capacity of the discharges calibrated.

## Applications for Family Quarters.

Applications for married quarters were on file on December 31, 1915, as follows:

STATIONS.	Number of applications.
Ancon	385 (84)
Ancon Hospital	3
Paraiso	165 (24)
Gatun	132 (13)
Cristobal	148 (35)
Total	834 (156)

NOTE.—The figures in parentheses show the numbers of applicants already occupying regular or nonhousekeeping family quarters at stations other than those at which applications are filed.

## The "Bushnell" Expected at Balboa Shortly.

The submarine tender *Bushnell*, a recent addition to the United States Navy, built at Seattle, is due to arrive at Balboa within a short time.

## Children Playing about Moving Vehicles.

A number of complaints have been made lately to the police about children riding on the backs of or holding onto the motor busses and other vehicles at Balboa and Ancon. Several instances have occurred where injury

to children was narrowly averted. It is desired to call the attention of all parents and guardians to this dangerous practice, with the request that they instruct their children to discontinue hanging onto vehicles, as it is not desired to interfere with the play of children by the enforcement of police authority unless it becomes necessary.

## Distances Traveled by School Children.

The children who ride on the trains of the Panama Railroad to and from school travel an aggregate of 2,400 miles a day, or 48,000 miles in a month of 20 school days, according to an estimate prepared in the office of the Superintendent of Schools. At present 124 white and nine colored children are using the railroad, of the 1,240 and 570, respectively, attending the Canal Zone schools. That is one in 10 of the white children, and one in 63 of the colored.

The necessity of carrying the children to school on the railroad arises from the peculiarity of their distribution along the line of the Canal and railroad, where their parents are stationed. There are 17 stations on the Panama Railroad, but only seven of the villages have populations sufficient to warrant the establishment of schools. These are Cristobal (with Colon Beach), Gatun, Pedro Miguel, Paraiso, Empire, Balboa, and Ancon. The schools in these villages are used by the pupils living at stations which have no school; and high school work is carried on only at Cristobal and Balboa. Nineteen pupils go from Paraiso to Pedro Miguel in a brake; and 133 use the Panama Railroad, as shown by the appended tabulation.

The Division of Schools pays the Panama Railroad \$300 per month, which is approximately \$15 per school day, for hauling the children. At \$300 for 48,000 miles the cost per mile is five-eighths of a cent. The distribution is shown below:

ROUTES.	No. of pupils riding.	Distance in miles.	Number of trips daily.		No. of miles traveled by each pupil.	Cost per pupil per month at 1¢ per mile.	No. of miles traveled by all pupils.		Total cost for all pupils riding on trains.
			Daily.	M'tly.			Daily.	M'tly.	
To Balboa white school:									
From Corozal	10	2	4	8	160	\$1.00	80	1,600	\$10.00
From Pedro Miguel	8	6	4	24	480	3.00	192	3,840	24.00
From Empire	3	11	2	22	440	2.75	66	1,320	8.25
From Las Cascadas	2	13	2	26	520	3.25	52	1,040	6.50
Total	23					10.00	390	7,800	48.75
To Balboa high school:									
From Ancon	18	1	2	2	40	.25	36	720	4.50
From Corozal	1	2	2	4	80	.50	4	80	.50
From Pedro Miguel	13	6	2	12	240	1.50	156	3,120	19.50
From Paraiso	3	12	2	24	240	1.50	36	720	4.50
From Empire	3	11	2	22	440	2.75	66	1,320	8.25
From Culebra	2	10	2	20	400	2.50	40	800	5.00
From Gatun	4	39	2	78	1,560	9.75	312	6,240	39.00
From Cristobal	6	46	2	92	1,840	11.50	552	11,040	69.00
Total	50					30.25	1,202	24,040	150.25
To Pedro Miguel white school:									
From Empire	1	5	2	10	200	1.25	10	200	1.25
To Culebra white school:									
From Culebra	14	1	2	2	40	0.25	28	560	3.50
From Las Cascadas	14	2	2	4	80	0.50	56	1,120	7.00
Total	28					.75	84	1,680	10.50
To Cristobal white and high school:									
From Mount Hope	9	2	2	4	80	0.50	36	720	4.50
From Gatun	7	2	2	14	280	1.75	98	1,960	12.25
From Trijoles	2	21	2	42	840	5.25	84	1,680	10.50
From Gamboa	4	30	2	60	1,200	7.50	249	4,800	30.00
Total	22					15.00	458	9,160	57.25
To Empire colored school:									
From Las Cascadas	4	2	2	4	80	.50	16	320	2.00
To Gatun colored school:									
From Gamboa	5	24	2	48	960	6.00	240	4,800	30.00
Total colored	9						256	5,120	32.00
Total white	124						2,144	42,880	268.00
Total, white and colored	133						2,400	48,000	\$300.00



## RETAIL HARDWARE PRICE LIST.

Of Commissary Branch of Supply Department,  
Effective January 15, 1916.

There is published below the retail hardware price list No. 2, effective January 15, 1916, governing the prices of articles sold in the hardware departments of the commissary stores, which are operated by the commissary branch of the Supply Department of The Panamá Canal.

The prices are those at which the items will be sold to Canal employees and other residents of the Isthmus who have commissary privileges.

These prices will be increased by 10 per cent in cases of sales to commercial vessels and ships of foreign navies, and by 20 per cent in cases of sales to yachts:

## Three Killed at Sosa Hill Quarry.

A premature explosion of dynamite in loaded holes at the Sosa Hill quarry at approximately 4.20 p. m., on Monday, January 24, caused the immediate death of two West Indian laborers in the drill and powder forces, and fatal injuries to a third, who died in Ancon Hospital. The Police and Fire Division is making an investigation of the case.

## "Safety First" in the Dredging Division.

The Dredging Division has had 53 "safety first" placards printed, to be posted in the wheel rooms of its floating equipment. The placards are of white cardboard, 12 by 18 inches, with the legend printed in red and black:

## SAFETY FIRST

DREDGING DIVISION  
TAKE NO CHANCES

The idea was taken from the placards, similar to the above, which have been posted in vessels by the Steamship-Inspection Service of the Department of Commerce.

In addition, the division has had 150 placards printed with this notice in red and black on cardboard 16½ by 13 inches:

## SAFETY FIRST

DO NOT PASS DREDGES  
WITHOUT PERMISSION

During the past week, from January 20 to 26, Limon Bay was visited by heavy seas, rolling in from the north under a wind blowing from 20 to 30 miles an hour. The uncompleted breakwater was not damaged seriously.

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
27355	Arms, towel (see Racks).			27557	Bowls, sugar, No. 1935, Minton.	Each	\$2.60
	Bags, penknife.	Each	\$0.05	27576	Bowls, sugar, No. 4307, Minton.	Each	1.15
	Bars, clothes and towel (see Racks).			27532	Bowls, sugar, No. 8721, Minton.	Each	2.25
27464	Basins, wash, enamel.	Each	.23	27525	Bowls, sugar, 1-pt., Luria.	Each	.21
28662	Baskets, fruit.	Each	.47	27533	Bowls, sugar, 1½-pt., Luria.	Each	.18
27298	Beakers, small, No. 3804, Doulton.	Each	.23	27573	Bowls, sugar, No. 6131, Booth.	Each	.53
27299	Beakers, large, No. 3804, Doulton.	Each	.35	27765	Bowls, sugar, No. 7311, Booth.	Each	.86
25365	Beaters, egg, revolving, small.	Each	.05	27347	Bowls, finger, crystal.	Each	.11
27559	Beaters, egg, revolving, large.	Each	.13	27993	Bowls, salad, Doulton.	Each	.23
35121	Beds, iron, single.	Each	2.15	23155	Bowls, slop, No. 4772, Doulton.	Each	.45
35127	Beds, iron, double.	Each	3.15	23155	Bowls, punch, on foot, No. 3801, Doulton.	Each	2.70
35133	Beds, iron, double.	Each	6.65	23157	Bowls, punch, no feet, No. 3301, Doulton.	Each	2.45
28634	Bells, call.	Each	.17	23229	Bowls, sugar, No. 4772, Doulton.	Each	.80
25369	Bells, hand.	Each	.18	23427	Bowls, sugar, Y-2715, Walglwood.	Each	.89
25828	Biggins, coffee, 1-pt., enameled.	Each	.39	23331	Bowls, sugar, Y-6223, Walglwood.	Each	1.03
25954	Biggins, coffee, 1-pt., enameled.	Each	.41	23474	Bowls, salad, decorated crystal.	Each	4.00
28388	Biggins, coffee, 1-qt., aluminum.	Each	2.00	23573	Bowls, salad, D-3191, Doulton.	Each	1.20
28389	Biggins, coffee, 2-qt., aluminum.	Each	2.25	23535	Bowls, slop, No. 6131, Booth.	Each	.17
25635	Blades, safety razor, Gillette.	Set	.73	23612	Bowls, sugar, No. 6252, Minton.	Each	2.75
27155	Blades, safety razor, Keen Cutter.	Set	.23	23638	Bowls, sugar, No. 3140.	Each	.52
27266	Blades, safety razor, Ever Ready.	Set	.47	23644	Bowls, sugar, No. 3430.	Each	.56
28311	Blades for Auto Stop razor.	Set	.79	23653	Bowls, salad, D-2312, Doulton.	Each	.32
23327	Boards, ironing, with felt.	Each	.70	23742	Bowls, slop, blue Watteau.	Each	.10
28331	Boards, pastry, 20" x 26".	Each	.44	23343	Boxes, sugar, japanned.	Each	.32
28326	Boards, wash.	Each	.61	23452	Boxes, bread, 15", japanned.	Each	.48
27578	Boats, sauce, with tray, A-4807, Minton.	Each	1.80	25127	Broilers, wire.	Each	.39
27595	Boats, sauce, with tray, Luria.	Each	.51	23214	Brooms, floor, hair, with handle.	Each	.87
27726	Boats, sauce, with tray, No. 8721, Minton.	Each	3.85	27915	Brooms, corn.	Each	.34
27781	Boats, sauce, with tray and ladle, No. 7881, Booth.	Each	2.10	25293	Brushes, stove, with handle.	Each	.10
27786	Boats, sauce, with tray, No. 1931, Minton.	Each	4.35	25299	Brushes, counter, hair.	Each	.26
28586	Boats, sauce, without tray, No. 6131, Booth.	Each	.21	25793	Brushes, hand, scrub.	Each	.03
27122	Boilers, milk, 2-qt., enameled.	Each	.58	27231	Brushes, deck scrub, with handle.	Each	.23
28215	Boilers, milk, 2-qt., aluminum.	Each	1.85	23357	Brushes, varnish, flat, 1½".	Each	.48
25384	Boilers, milk, 1-qt., aluminum.	Each	1.00	23353	Brushes, varnish, flat, 2".	Each	.64
23385	Boilers, milk, 2-qt., aluminum.	Each	1.30	23357	Brushes, varnish, flat, 2½".	Each	.85
25275	Boilers, wash, No. 209.	Each	1.20	23445	Brushes, varnish, flat, 1".	Each	.29
25817	Boilers, wash, No. 208.	Each	1.05		Buckets (see also Pails).		
27714	Bottles, bird cage.	Each	.04	25191	Buckets, 14-qt., galvanized.	Each	.25
27621	Bottles, nursing, Cleaneasy.	Each	.04	25555	Buckets, covered, 2-qt., enamel.	Each	.22
25269	Bottles, oil or vinegar, plain glass.	Each	.14	25512	Buckets and mop wringer.	Each	1.30
2 979	Bottles, vacuum, pint.	Each	1.15	27451	Buckets, covered, 3-qt., enamel.	Each	.45
2 981	Bottles, vacuum, quart.	Each	1.95	27718	Bulbs, electric light, Tungsten.	Each	.26
2 981	Bottles, vinegar, decorated crystal.	Each	2.10	26231	Burners, lamp, Venus.	Each	.07
2 164	Bowls, sugar, pressed glass.	Each	.09	23297	Burners for precolators, without wick.	Each	.03
2 227	Bowls, mixing, 4-qt., earthen.	Each	.20	25112	Cages, bird, No. 1.	Each	1.35
2 228	Bowls, mixing, 2-qt., earthen.	Each	.14	25113	Cages, bird, No. 2.	Each	1.15
2 246	Bowls, berry, pressed glass.	Each	.14	25336	Cages, bird, No. 3.	Each	.95
2 795	Bowls, mixing, 1-qt., earthen.	Each	.06	23511	Cages, bird, No. 4.	Each	.60
2 796	Bowls, mixing, 6-qt., earthen.	Each	.23	23512	Cages, bird, No. 5.	Each	.45
2 826	Bowls, mixing, 3½-qt., agate.	Each	.19	23627	Canisters, glass, for coffee mill.	Each	.27
2 827	Bowls, seamless, 1-pt., enameled.	Each	.11	23475	Caiffe, 1-qt., decorated crystal.	Each	3.35
2 553	Bowls, seamless, 1-qt., enameled.	Each	.08	27123	Carriages, baby, "Sulkies".	Each	1.30
27331	Bowls, finger, decorated crystal.	Each	1.05	25134	Carriages, baby, collapsible.	Each	6.60
27341	Bowls, salad, 8", Doulton.	Each	.96	23135	Carriages, baby, collapsible.	Each	7.45
27342	Bowls, salad, 7", Doulton.	Each	1.30	23449	Carriages, baby, doll carts.	Each	1.45
27482	Bowls, custard, 1-pt., enamel.	Each	.10	23451	Carriages, baby, coach body.	Each	8.75
				23433	Carriages, baby, go-baskets, No. 6.	Each	7.15

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
28484	Carriages, baby, go-baskets, No. 6-R.....	Each	\$8.75	27562	Cups and saucers, tea, A-4807, Minton.....	Set	\$0.41
28497	Carriages, baby, sulkies.....	Each	3.70	27566	Cups and saucers, bouillon, H-1935, Minton.....	Set	1.85
28553	Carriers, dinner, 3-compartment.....	Each	1.00	27568	Cups and saucers, bouillon, G-8721, Minton.....	Set	1.65
28689	Carriers, dinner, 4-compartment.....	Each	1.35	27672	Cups and saucers, tea, No. 6131, Booth.....	Set	.12
	Carts, doll (see Baby carriages).			27764	Cups and saucers, tea, No. 7881, Booth.....	Set	.19
	Cases, penknife (see Bags).			27972	Cups and saucers, tea, C-4772, Doulton.....	Set	.24
35134	Castors, bed.....	Each	.03	28525	Cups and saucers, tea, No. 3480.....	Set	.22
25267	Cellars, salt, individual.....	Each	.03	28538	Cups and saucers, tea, No. 3140.....	Set	.20
25364	Chains, pot, double.....	Each	.05	28552	Cups and saucers, No. 3178.....	Set	.16
28712	Chains, key, with ring, No. 20.....	Each	.03	28584	Cups and saucers, After Dinner, No. 6131, Booth.....	Set	.11
28713	Chains, key, with ring, No. 22.....	Each	.04	28599	Cups and saucers, tea, G-6262, Minton.....	Set	1.80
27474	Chambers, agate.....	Each	.22	28611	Cups and saucers, bouillon, No. 6262, Minton.....	Set	2.05
25515	Chimneys for Juno table lamps.....	Each	.10	28698	Cups and saucers, tea, Y-6923, Wedgwood.....	Each	.35
25517	Chimneys for Imperial Student Lamp.....	Each	.13	28741	Cups and saucers, blue Watteau.....	Each	.10
25518	Chimneys for Berlin Student Lamp.....	Each	.09	28741	Cupids, agate.....	Each	.29
25723	Chimneys, lamp, beaded top.....	Each	.02	26223	Cutters, biscuit, tin.....	Each	.02
25843	Chimneys for Rochester lamp.....	Each	.14	25775	Cutters, ice, Silvers, No. 2.....	Each	2.65
	Choppers (see also Cutters).			28454	Decanters, 1-pt., decorated crystal.....	Each	3.85
27274	Choppers, food, No. 1.....	Each	.75	28476	Decanters, 1-pt., decorated crystal.....	Each	2.90
28328	Choppers, food, No. 3.....	Each	1.45	28485	Dippers, 1-pt., agate.....	Each	.10
	Cleaners, pipe (see Pipe cleaners).			27362	Dishes (see also Platters).		
6387	Clocks, alarm, "Startle".....	Each	1.00	25255	Dishes, olive or pickle, cut glass.....	Each	1.10
8967	Clocks, alarm, "Prompter".....	Each	1.30	25774	Dishes, soap, wall, agate.....	Each	.09
28129	Clocks, alarm, "Simplex".....	Each	1.80	26779	Dishes, fern 8", with lining, Wedgwood.....	Each	2.60
28561	Clocks, alarm, "Bingo".....	Each	1.40	27116	Dishes, berry, decorated crystal.....	Each	1.95
25582	Collanders, 10", agate.....	Each	.14	27384	Dishes, butter, pressed glass.....	Each	.14
	Collars for New Perfection stoves (see Stove parts).			27388	Dishes, fern, 6", with lining, Wedgwood.....	Each	1.90
	Cookers, fireless (see Stoves).			27493	Dishes, fern, 4", with lining, Wedgwood.....	Each	1.35
27236	Coolers, water, 2-gal., japanned.....	Each	1.05	27594	Dishes, vegetable, 10", Luria.....	Each	1.25
27381	Coolers, water, 4-gal., japanned.....	Each	1.40	27614	Dishes, oatmeal, 6", Luria.....	Each	.08
27434	Coolers, water, 8-gal., japanned.....	Each	2.40	27617	Dishes, bakers, 10", Luria.....	Each	.33
28363	Coolers, water, 14-gal., japanned.....	Each	3.75	27668	Dishes, bakers, 7", No. 6131, Booth.....	Each	.25
27558	Corkscrews, nickel plated.....	Each	.18	27694	Dishes, olive or pickle, No. 6131, Booth.....	Each	.30
27732	Corkscrews, self-pulling.....	Each	.17	27695	Dishes, butter, No. 6131, Booth.....	Each	.55
35118	Cots, folding.....	Each	2.35	27724	Dishes, bakers, 8", G-8721, Minton.....	Each	2.65
28221	Covers for saucepans, 4", aluminum.....	Each	.19	27725	Dishes, bakers, 10", G-8721, Minton.....	Each	2.95
28222	Covers for saucepans, 5", aluminum.....	Each	.15	27727	Dishes, bakers, 8", A-4807, Minton.....	Each	1.05
28223	Covers for saucepans, 5 1/2", aluminum.....	Each	.19	27728	Dishes, bakers, 10", A-4807, Minton.....	Each	1.45
28224	Covers for saucepans, 7", aluminum.....	Each	.23	27729	Dishes, bakers, 9", A-4807, Minton.....	Each	1.25
28225	Covers for saucepans, 8", aluminum.....	Each	.25	27762	Dishes, bakers, 10", No. 7881, Booth.....	Each	.75
28226	Covers for saucepans, 8 1/2", aluminum.....	Each	.27	27763	Dishes, bakers, 12", No. 7881, Booth.....	Each	.76
28227	Covers for saucepans, 9", aluminum.....	Each	.55	27774	Dishes, butter, No. 7881, Booth.....	Each	.82
28372	Covers for saucepans, 5", aluminum.....	Each	.03	27783	Dishes, bakers, 8", No. 7881, Booth.....	Each	.65
28373	Covers for saucepans, 6 1/2", aluminum.....	Each	.10	27784	Dishes, bakers, 8", No. 1935, Minton.....	Each	2.80
28374	Covers for saucepans, 7 1/2", aluminum.....	Each	.13	27785	Dishes, bakers, 10", No. 1935, Minton.....	Each	3.10
28375	Covers for saucepans, 8 1/2", aluminum.....	Each	.16	27957	Dishes, bakers, 9", white, Makin.....	Each	.09
28376	Covers for saucepans, 8 1/2", aluminum.....	Each	.18	28112	Dishes, sauce, 5 1/2", Luria.....	Each	.07
28377	Covers for saucepans, 10", aluminum.....	Each	.23	28335	Dishes, sauce, 5 1/2", plain white.....	Each	.06
35242	Cribs, baby, white enamel.....	Each	5.30	28318	Dishes, bakers, 8", No. 3480.....	Each	.25
27235	Cups, drinking, sanitary, paper.....	Doz.	.01	28519	Dishes, bakers, 10", No. 3480.....	Each	.44
27518	Cups, drinking, 1-quart, agate.....	Each	.15	28521	Dishes, vegetable, 9 1/2", No. 3480.....	Each	1.20
27679	Cups, egg, No. 6131, Booth.....	Each	.07	28522	Dishes, olive or pickle, No. 3480.....	Each	.30
27771	Cups, egg, No. 7881, Booth.....	Each	.11	28532	Dishes, bakers, 8", No. 3140.....	Each	.23
27955	Cups, punch, glass.....	Each	.06	28533	Dishes, bakers, 10", No. 3140.....	Each	.41
27963	Cups, drinking, 1-pint, enamel.....	Each	.11	28534	Dishes, vegetable, 9 1/2", No. 3140.....	Each	1.10
28487	Cups, custard, decorated crystal.....	Each	.70	28535	Dishes, olive or pickle, No. 3140.....	Each	.27
28635	Cups, egg, No. 3140.....	Each	.11	28545	Dishes, bakers, 8", No. 3178.....	Each	.17
28641	Cups, egg, No. 3480.....	Each	.12	28546	Dishes, bakers, 10", No. 3178.....	Each	.33
28648	Cups, drinking, 1-pint, enamel.....	Each	.08	28547	Dishes, vegetable, 9 1/2", No. 3178.....	Each	.78
28733	Cups, egg, blue Watteau.....	Each	.06	28548	Dishes, olive or pickle, No. 3178.....	Each	.22
28746	Cups, egg, C-4772, Doulton.....	Each	.13	28596	Dishes, bakers, 12", H-1935, Minton.....	Each	5.20
25839	Cups and saucers, Y-2715, Wedgwood.....	Set	.31	28619	Dishes, bakers, 8", No. 6262, Minton.....	Each	3.10
26095	Cups and saucers, plain white.....	Set	.05	28621	Dishes, bakers, 9", No. 6262, Minton.....	Each	3.15
26936	Cups and saucers, tea, No. 1935, Minton.....	Set	1.60	28636	Dishes, oatmeal, No. 3140.....	Each	.12
26937	Cups and saucers, After Dinner, No. 1935, Minton.....	Set	1.50	28642	Dishes, oatmeal, No. 3480.....	Each	.20
26938	Cups and saucers, After Dinner, No. 8721, Minton.....	Set	1.35	28667	Dishes, oatmeal, C-4772, Doulton.....	Each	.14
26939	Cups and saucers, tea, G-8721, Minton.....	Set	1.45	28715	Dishes, sauce, Conquest.....	Each	.03
26944	Cups and saucers, After Dinner, No. 6262, Minton.....	Set	1.65	28716	Dishes, olive or pickle, Conquest.....	Each	.09
26952	Cups and saucers, After Dinner, A-4807, Minton.....	Set	.45	28732	Dishes, oatmeal, blue Watteau.....	Each	.08
27353	Cups and saucers, tea, No. 3804, Doulton.....	Set	.41	28739	Dishes, fruit, on stand, blue Watteau.....	Each	1.40
27541	Cups and saucers, tea, Luria.....	Set	.12	25722	Domes, lamp.....	Each	.13
27561	Cups and saucers, bouillon, A-4807, Minton.....	Set	.56	28424	Drainers, dish, galvanized wire.....	Each	.16
					Drums for New Perfection stoves. (See Stove parts).		

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
25317	Dusters, feather.....	Each	\$1.15	28727	Griddles, oblong.....	Each	\$0.49
27949	Dusters, wall, Howard.....	Each	1.60	28728	Griddles, round.....	Each	.50
	Dustpans (see Pans).			25251	Hammers, claw.....	Each	.45
	Egg beaters (see Beaters).			27794	Hammers, tack.....	Each	.21
27519	Extractors, juice, glass.....	Each	.06	25519	Handles for floor brushes.....	Each	.11
26868	Extractors, juice.....	Each	.16	25851	Handles, mop.....	Each	.16
28352	Fillers, vacuum bottle, pints.....	Each	.73	27623	Handles, sadiron.....	Each	.06
28353	Fillers, vacuum bottle, quarts.....	Each	1.15	5991	Hangers, garment, wood.....	Each	.22
26568	Filters, Gate City, No. 8.....	Each	4.20	8931	Hangers, suit, No. 7, wood.....	Each	.06
	Flame spreaders for New Perfection stove (See Stove parts).			27964	Hangers, coat and pant, combination, wire.....	Each	.13
25594	Forks, dinner, Windsor, silver plated.....	Each	.11	27966	Hangers, pants, No. 18, wire.....	Each	.14
25595	Forks, dinner, Tudor, silver plated.....	Each	.30	28398	Hangers, women's dress, wood.....	Each	.07
27222	Forks, dessert, Old English, silver plated.....	Each	.25	28423	Hangers, coat, wood.....	Each	.03
28117	Forks, dessert, Jacobean, silver plated.....	Each	.40	28745	Hangers, pants, self adjusting.....	Each	.04
28121	Forks, oyster, Jacobean, silver plated.....	Each	.24	27159	Hatchets, claw.....	Each	.50
28344	Forks, dessert, Windsor, silver plated.....	Each	.16	25585	Heads, mop (see Mops).		
28577	Forks, dinner, Grecian, silver plated.....	Each	.41		Hods, coal.....	Each	.10
26768	Forks, table, Windsor.....	Each	.20		Holders, match (see Stands).		
2692	Forks, cook, aluminum handle.....	Each	.27	25266	Holders, toothpick, glass.....	Each	.04
25847	Freezers, ice cream, 1-quart.....	Each	1.45	28395	Holders, soap, hanging, for bath tub, nickel plated.....	Each	.40
25966	Freezers, ice cream, 3-quart.....	Each	2.00	28397	Holders, soap, wall, nickel plated.....	Each	1.05
25967	Freezers, ice cream, 4-quart.....	Each	2.35	25348	Hooks, cup, brass, 1".....	Doz.	.07
26279	Freezers, ice cream, 2-quart.....	Each	1.65	25349	Hooks, screw, brass, 3/4".....	Doz.	.04
26887	Freezers, ice cream, 8-quart.....	Each	3.90	25351	Hooks, cup, brass, 1 1/2".....	Doz.	.14
28318	Freezers, ice cream, 6-quart.....	Each	3.00	25352	Hooks, cup, brass, 2".....	Doz.	.26
26565	Funnels, agate, 1-pint.....	Each	.13	25353	Hooks, screw, brass, 3/4".....	Doz.	.04
28298	Funnels, agate, 1-quart.....	Each	.15	25354	Hooks, screw, brass, 3/4".....	Doz.	.05
25237	Glasses, sherry.....	Each	.14	26121	Hooks, hammock.....	Doz.	.28
25241	Glasses, whiskey, light.....	Each	.03	26483	Hooks, coat and hat, wire.....	Doz.	.04
25676	Glasses, lemonade, crystal.....	Each	.07	26682	Hooks, towel, porcelain.....	Each	.09
26977	Glasses, sherry, decorated crystal.....	Each	.75	28336	Hocks, picture, brass.....	Doz.	.03
26978	Glasses, champagne, decorated crystal.....	Each	.70	28361	Hooks, gate, brass, 4".....	Each	.03
26979	Glasses, claret, decorated crystal.....	Each	.70	25493	Irons, sad, with handle and stand, 3 irons.....	Set	.85
26987	Glasses, water, decorated crystal.....	Each	.66	27382	Irons, waffle.....	Each	.70
26988	Glasses, whiskey, decorated crystal.....	Each	.45		Jap-a-lac (see Polish).		
26996	Glasses, punch, decorated crystal.....	Each	.70	25874	Jugs, Don, A-1147, Doulton.....	Each	1.49
27328	Glasses, cocktail, decorated crystal.....	Each	.70	26644	Jugs, Scotia, 2-quart, Doulton.....	Each	.40
27372	Glasses, water, half crystal.....	Each	.06	26645	Jugs, Scotia, 3-quart, Doulton.....	Each	.47
27555	Glasses, liquor, decorated crystal.....	Each	.61	26646	Jugs, Scotia, 1-quart, Doulton.....	Each	.23
28236	Glasses, water, half crystal.....	Each	.04	26652	Jugs, Don, A-1147, Doulton.....	Each	1.75
28237	Glasses, lemonade, crystal.....	Each	.06	26771	Jugs, orange shape, Wedgwood.....	Each	.67
28238	Glasses, water, half crystal.....	Each	.07	27534	Jugs, Rocket, No. 3804, Doulton.....	Each	1.10
28281	Glasses, water.....	Each	.03	27539	Jugs, Concord, No. 2694, Doulton.....	Each	.35
28282	Glasses, water.....	Each	.03	27575	Jugs, cream, A-4807, Minton.....	Each	.60
28283	Glasses, water, half crystal.....	Each	.09	27581	Jugs, cream, No. 1935, Minton.....	Each	1.55
28284	Glasses, water, half crystal.....	Each	.09	27597	Jugs, cream, 1-pint, Luria.....	Each	.09
28285	Glasses, claret, half crystal.....	Each	.08	27689	Jugs, cream, 1-pint, No. 6131, Booth.....	Each	.25
28286	Glasses, claret, half crystal.....	Each	.08	27765	Jugs, cream, 1-pint, No. 7881, Booth.....	Each	.49
28287	Glasses, champagne, half crystal.....	Each	.18	27999	Jugs, Premier, No. 2779, Doulton.....	Each	.70
28288	Glasses, cocktail, crystal.....	Each	.08	28159	Jugs, Becket, No. 2567, Doulton.....	Each	.60
28289	Glasses, sherry, half crystal.....	Each	.07	28162	Jugs, Becket, No. 2568, Doulton.....	Each	.96
28291	Glasses, sherbet, half crystal.....	Each	.16	28428	Jugs, cream, Y-2715, Wedgwood.....	Each	.43
28292	Glasses, liquor, half crystal.....	Each	.05	28432	Jugs, cream No. 6923, W. d. g. wood.....	Each	.48
28455	Glasses, measuring.....	Each	.08	28465	Jugs, claret, decorated crystal.....	Each	4.80
28462	Glasses, lemonade, decorated crystal.....	Each	1.00	28579	Jugs, ice, Peary, D-3751.....	Each	1.20
28466	Glasses, liquor, decorated crystal.....	Each	.48	28581	Jugs, Newlyn, D-3751.....	Each	.72
28488	Glasses, water, decorated crystal.....	Each	.67	28582	Jugs, Concord, D-3647.....	Each	.82
28649	Glasses, claret, No. 853.....	Each	.13	28613	Jugs, cream, No. 6262, Minton.....	Each	1.70
28651	Glasses, sherry, No. 855.....	Each	.12	28623	Jugs, cream, G-8721, Minton.....	Each	1.45
28652	Glasses, cordial, No. 856.....	Each	.11	28637	Jugs, cream, No. 3140.....	Each	.22
28653	Glasses, saucer, champagne, No. 858.....	Each	.15	28643	Jugs, cream, No. 3480.....	Each	.23
28654	Glasses, creme de menthe, No. 860.....	Each	.13	28664	Jugs, cream, C-4772.....	Each	.39
28655	Glasses, milk punch, No. 440.....	Each	.08	28665	Jugs, water, D-3471.....	Each	.53
28656	Glasses, split beer, No. 446.....	Each	.06	28734	Jugs, cream, blue Watteau, 30s.....	Each	.15
28657	Glasses, large beer, No. 372.....	Each	.16	28735	Jugs, cream, blue Watteau, 36s.....	Each	.13
28658	Glasses, side water, No. 380.....	Each	.06	25431	Kettles, Berlin, 10 quart.....	Each	.66
28659	Glasses, claret, No. 822.....	Each	.11	25447	Kettles, Berlin, 2-quart.....	Each	.28
28663	Glasses, sherry.....	Each	.11	25859	Kettles, tea, agate, 2-quart.....	Each	.35
28664	Glasses, cordial.....	Each	.09	25861	Kettles, tea, enamel, 4-quart.....	Each	.52
28665	Glasses, cocktail.....	Each	.10	26158	Kettles, tea, enamel, 3-quart.....	Each	.46
28666	Glasses, saucer, champagne, No. 829.....	Each	.12	26557	Kettles, Berlin, 3-quart.....	Each	.33
25837	Globes for Dietz lanterns.....	Each	.08	26558	Kettles, Berlin, 4-quart.....	Each	.39
28691	Glue, fish, 1-oz.....	Tube	.07	26559	Kettles, Berlin, 6-quart.....	Each	.47
	Go-baskets (see Baby carriages).			26561	Kettles, Berlin, 8-quart.....	Each	.57
25362	Graters, combination.....	Each	.07	27445	Kettles, tea, enamel, 6-quart.....	Each	1.55
25363	Graters, nutmeg.....	Each	.05	28216	Kettles, tea, aluminum, 2-quart.....	Each	1.35



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
28217	Kettles, tea, aluminum, 4-quart.....	Each	\$1.70	27947	Mops, dust, Howard.....	Each	\$1.25
28382	Kettles, tea, aluminum, 6-quart.....	Each	2.55	28421	Mops, dish.....	Each	.05
28383	Kettles, tea, aluminum, 8-quart.....	Each	2.85	28554	Mops, with handles, O'Cedar.....	Each	.95
25597	Knives, table, Tudor, silver plated.....	Each	.74		Mops wringer and bucket (see Buckets).		
25599	Knives, pocket, horn handle.....	Each	.20	25165	Mugs, shaving, gold band.....	Each	.12
25612	Knives, pocket, horn handle.....	Each	.39	27425	Mugs, Jubilee, Doulton, small.....	Each	.29
25615	Knives, pocket, pearl handle.....	Each	1.00	27153	Nails, upholstery.....	Pkg.	.07
26237	Knives, butcher, 6".....	Each	.10	26982	Nappies, cut glass.....	Each	.75
26432	Knives, pocket, ivory handle.....	Each	.80	27428	Nappies, pressed glass.....	Each	.03
26623	Knives, pocket, horn handle.....	Each	.24	28463	Nappies, glass, decorated crystal.....	Each	1.70
26624	Knives, pocket, pearl handle.....	Each	.80	27624	Nipples for nursing bottles.....	Each	.03
26736	Knives, pocket, pearl handle.....	Each	1.35	26628	Oil, Three-in-One.....	Bot.	.07
26737	Knives, pocket, ivory handle.....	Each	.52	25336	Oilers, sewing machine.....	Each	.03
26738	Knives, pocket, ivory handle.....	Each	.50	25865	Openers, can, Never Slip.....	Each	.07
26739	Knives, pocket, ivory handle.....	Each	.63	27971	Openers, can.....	Each	.06
26741	Knives, pocket, pearl handle.....	Each	.98		Ovens for New Perfection stoves (see Stove parts).		
27166	Knives, table, silver plated.....	Each	.14		Padlocks (see Locks).		
27167	Knives, pocket, ivory handle.....	Each	.09		Pails, dinner (see Carriers).		
27168	Knives, pocket.....	Each	.72		Pails (see also Buckets).		
27169	Knives, pocket, ivory handle.....	Each	.97		Pails, cake.....	Each	.70
27172	Knives, dessert, silver plated.....	Each	.11	25581	Pails, plant, 11 x 9.....	Each	.40
27177	Knives, pocket, pearl handle.....	Each	.73	28414	Pans, fry, steel lipped, 8 1/2".....	Each	.07
27276	Knives, French cook, 8".....	Each	.40	25395	Pans, pudding, enamel, 2-quart.....	Each	.13
27716	Knives, French cook, 10".....	Each	.44	25443	Pans, pudding, enamel, 1-quart.....	Each	.11
28118	Knives, dessert, Jacobean, silver plated.....	Each	.84	25444	Pans, jelly cake, tin, 8".....	Each	.03
28119	Knives, butter, Jacobean.....	Each	.35	25534	Pans, drip, 9 x 14.....	Each	.08
28125	Knives, dinner, Jacobean, silver plated.....	Each	.93	25778	Pans, dish, enamel, 10-quart.....	Each	.40
28164	Knives, butcher, 10".....	Each	.34	25792	Pans, fry, steel lipped, 10".....	Each	.09
28165	Knives, butcher, 10".....	Each	.43	25993	Pans, fry, enamel, 14-quart.....	Each	.47
28173	Knives, carving, ebony handle.....	Each	1.45	26563	Pans, bread, agate, 9 1/2" x 4 1/2" x 3".....	Each	.11
28232	Knives, peeling.....	Each	.03	26567	Pans, fry, steel, 12".....	Each	.14
28293	Knives, pocket, Boy Scout.....	Each	1.00	26641	Pans, pudding, enamel, 3-quart.....	Each	.15
28632	Knives, dessert, Grecian.....	Each	.67	27124	Pans, muffin, enamel, 8-cup.....	Each	.20
28676	Knives, table, Windsor.....	Each	.25	27125	Pans, muffin, 12-cup.....	Each	.36
28677	Knives, dessert, Windsor.....	Each	.24	27129	Pans, dust, tin, japanned.....	Each	.13
28699	Knives, butter, Grecian.....	Each	.34	27357	Pans, jelly cake, enamel, 10".....	Each	.11
28711	Knives, table, Grecian.....	Each	.25	27358	Pans, jelly cake, enamel, 10".....	Each	.13
25592	Forks and forks, white bone handle.....	Set	2.52	27618	Pans, drip, enamel, 9 x 14".....	Each	.38
27553	Knives and forks, stag handle.....	Set	1.40	28191	Pans, poached egg, aluminum.....	Each	.75
27554	Knives and forks, with steel, stag handle.....	Set	2.65	28228	Pans, omelet, aluminum, 8".....	Each	.52
28499	Ladles, aluminum, 1/2-pint.....	Each	.09	28362	Pans, poached egg, aluminum.....	Each	.49
25522	Lamps, table, Juno.....	Each	1.95	28386	Pans, fry, aluminum, 7".....	Each	.46
28631	Lanips for 009N percolator.....	Each	1.05	28387	Pans, fry, aluminum, 8 1/2".....	Each	.63
25586	Lanterns, Dietz.....	Each	.38	28408	Pans, dust, tin, japanned.....	Each	.07
	Lids for saucepans (see Covers).			28409	Pans, drip, 12 1/2" x 17 1/2".....	Each	.29
25372	Lifters, stove cover.....	Each	.04	28669	Pans, pudding, aluminum, 8".....	Each	.42
27332	Lincs, clothes.....	Hank	.43	28671	Pans, pudding, aluminum, 8 1/2".....	Each	.51
25355	Locks, Yale, 2".....	Each	.97	28672	Pans, cake, aluminum, 9".....	Each	.26
25356	Locks, Yale, 3".....	Each	2.05	28696	Pans, bread, aluminum.....	Each	.41
25357	Locks, Yale, 1".....	Each	.71		Pans, sauce (see Saucepans).		
25358	Locks, Yale, 2".....	Each	2.05		Paste, polishing (see Polish).		
25869	Locks, Yale, 1 1/2".....	Each	.78		Percolators, No. 04.....	Each	5.45
27983	Locks, Yale, No. 830, 1 1/2".....	Each	.83	25499	Percolators, No. 006.....	Each	6.25
27984	Locks, Yale, No. 850, 2".....	Each	1.45	25511	Percolators, No. 009-N.....	Each	7.15
27955	Locks, Yale, No. 801-B, 1 1/2".....	Each	.68	27156	Picks, ice.....	Each	.08
27986	Locks, Yale, No. 803-B, 1 1/2".....	Each	.78	35114	Pillows, hair.....	Each	.95
	Marking sets (see Sets).			35115	Pillows, feather.....	Each	1.20
25483	Mashers, potato, wood.....	Each	.06	25886	Pins, clothes.....	Doz.	.02
6961	Mats, door, cocoa fiber, 25 x 41.....	Each	2.50	28433	Pins, rolling, wood.....	Each	.11
7682	Mats, door, cocoa fiber, 18 x 28.....	Each	1.15	26482	Pipe cleaners.....	Each	.01
6621	Matting, Japanese, blue, 36".....	Yard	.19	25226	Pipes, cob.....	Each	.02
28479	Matting, Japanese, green, 36".....	Yard	.19	26481	Pipes, clay.....	Each	.01
28481	Matting, Japanese, brown, 36".....	Yard	.19	26664	Pipes, meerschau.....	Each	4.00
35111	Mattresses, hair, single.....	Each	7.50	26665	Pipes, meerschau.....	Each	3.40
35112	Mattresses, fiber, double.....	Each	4.60	26666	Pipes, meerschau.....	Each	4.60
35113	Mattresses, fiber, single.....	Each	4.00	27152	Pipes, calabash.....	Each	1.16
35243	Mattresses, baby crib.....	Each	4.05	27286	Pipes, calabash.....	Each	3.00
35329	Mattresses, hair, double.....	Each	18.20	27341	Pipes, briar.....	Each	.12
25437	Measures, agate, 1/2-pint.....	Each	.14	28342	Pipes, briar.....	Each	.16
25439	Measures, agate, 1-quart.....	Each	.19	28342	Pipes, briar.....	Each	.21
25441	Measures, agate, 1-gallon.....	Each	.29	28558	Pipes, meerschau.....	Each	5.00
28355	Measures, agate, 1-pint.....	Each	.15	28673	Pipes, meerschau.....	Each	7.50
	Measuring glasses (see Glasses).			28674	Pipes, briar, amber and silver.....	Each	4.50
27165	Mills, coffee, glass canister, 1-pound.....	Each	.50	25244	Pitchers, plain glass, 1 1/2-quart.....	Each	.25
25798	Mixers, liquor, nickel plated.....	Each	.80	26698	Pitchers, agate, 3-quart.....	Each	.45
25791	Mops, heads only.....	Each	.11	26756	Pitchers, agate, 4-quart.....	Each	.51
27292	Mops, heads only.....	Each	.05				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
27799	Pitchers, plain glass, 2-quart.....	Each	\$0.28	28597	Plates, coupé, H-1935, Minton, 8".....	Each	\$1.55
28477	Pitchers, glass, decorated crystal.....	Each	4.80	28598	Plates, sauce, H-1935, Minton.....	Each	.95
26696	Plates, dinner, white, Meakin, 9".....	Each	.06	28614	Plates, dinner, G-6262, Minton, 10".....	Each	1.95
26697	Plates, soup, white, Meakin, 9".....	Each	.05	28615	Plates, soup, G-6262, Minton, 9 1/2".....	Each	1.95
26698	Plates, bread and butter, Meakin.....	Each	.04	28624	Plates, dessert, G-8721, Minton, 7".....	Each	1.25
26767	Plates, breakfast, Coalport's, 8".....	Each	1.20	28666	Plates, breakfast, C-4772, Doulton.....	Each	.30
26799	Plates, dinner, agate.....	Each	.12	28729	Plates, bread and butter, blue Watteau, 6", Doulton.....	Each	.08
26922	Plates, dessert, No. 1935, Minton.....	Each	1.70	28731	Plates, breakfast, blue Watteau, 8", Doulton	Each	.10
26926	Plates, breakfast, Minton, 9".....	Each	1.40	28743	Plates, tea, Y-6923, Dragon, Wedgwood...	Each	.38
26927	Plates, breakfast, H-1935, Minton, 8".....	Each	1.55	28744	Plates, bread and butter, Y-6923, Dragon, Wedgwood.....	Each	.21
26928	Plates, breakfast, A-4807, Minton, 9".....	Each	.53	25733	Platters, meat, individual, 6".....	Each	.03
27157	Plates, bread and butter, Wedgwood.....	Each	.20	27569	Platters, chop, A-4807, Minton, 14".....	Each	2.50
27158	Plates, dessert, Wedgwood, 7".....	Each	.35	27571	Platters, meat, A-4807, Minton, 14".....	Each	2.20
27193	Plates, dinner, No. 8721, Minton, 10".....	Each	1.60	27573	Platters, meat, A-4807, Minton, 16".....	Each	3.15
27195	Plates, bread and butter, No. 8721, Minton.	Each	.97	27589	Platters, chop, G-6262, Minton, 14".....	Each	6.70
27211	Plates, soup, H-1935, Minton, 9 1/2".....	Each	1.85	27591	Platters, meat, G-6262, Minton, 14".....	Each	5.65
27212	Plates, dinner, H-1935, Minton, 10".....	Each	1.85	27592	Platters, meat, G-6262, Minton, 16".....	Each	8.50
27213	Plates, bread and butter, H-1935, Minton...	Each	1.15	27593	Platters, chop, H-1935, Minton, 14".....	Each	5.85
27214	Plates, dinner, A-4807, Minton, 10".....	Each	.65	27612	Platters, meat, Luria, 14".....	Each	.80
27215	Plates, dessert, A-4807, Minton, 7".....	Each	.48	27613	Platters, meat, Luria, 16".....	Each	1.20
27216	Plates, bread and butter, A-4807, Minton..	Each	.35	27633	Platters, meat, No. 7893, Booth, 10".....	Each	.49
27217	Plates, soup, A-4807, Minton, 9 1/2".....	Each	.65	27634	Platters, meat, No. 7893, Booth, 14".....	Each	.87
27295	Plates, pie, tin.....	Each	.03	27662	Platters, meat, No. 6131, Booth, 12".....	Each	.56
27297	Plates, dessert, No. 3804, Doulton.....	Each	.44	27684	Platters, meat, No. 6131, Booth, 14".....	Each	.72
27345	Plates, breakfast, No. 3213, Doulton.....	Each	.38	27685	Platters, chop, No. 6131, Booth, 14 1/2".....	Each	.70
27359	Plates, soup, agate.....	Each	.13	27721	Platters, meat, H-1935, Minton, 14".....	Each	5.65
27418	Plates, bread and butter, No. 3804, Doulton	Each	.38	27722	Platters, meat, H-1935, Minton, 16".....	Each	8.15
27457	Plates, pie, enamel.....	Each	.13	27723	Platters, meat, G-8721, Minton, 16".....	Each	7.25
27542	Plates, bread and butter, Luria.....	Each	.09	27758	Platters, meat, No. 6131, Booth, 10".....	Each	.24
27543	Plates, dessert, Luria, 8".....	Each	.11	27759	Platters, meat, No. 7881, Booth, 10".....	Each	.55
27563	Plates, sauce, G-8721 Minton, 6".....	Each	.97	27776	Platters, meat, No. 7881, Booth, 14".....	Each	.90
27564	Plates, sauce, A-4807, Minton, 6".....	Each	.31	27777	Platters, meat, No. 7881, Booth, 16".....	Each	1.45
27565	Plates, sauce, H-1935, Minton, 6".....	Each	1.05	27778	Platters, chop, No. 7881, Booth, 14".....	Each	2.20
27577	Plates, sauce, A-300, Minton, 6".....	Each	.34	27938	Platters, meat, A-4807, Minton, 10".....	Each	1.10
27586	Plates, bread and butter, G-6262, Minton..	Each	1.15	27939	Platters, meat, A-4807, Minton, 12".....	Each	1.45
27587	Plates, dessert, G-6262, Minton, 7".....	Each	1.40	27953	Platters, meat, Luria, 12".....	Each	.56
27588	Plates, breakfast, G-6262, Minton.....	Each	1.85	27958	Platters, meat, Meakin, 14".....	Each	.15
27599	Plates, dinner, Luria, 9 1/2".....	Each	.20	27959	Platters, meat, Luria, 10".....	Each	.47
27611	Plates, soup, Luria, 9 1/2".....	Each	.18	28313	Platters, meat, No. 4772, Doulton, 10".....	Each	.78
27615	Plates, cake, Luria, 10".....	Each	.25	28314	Platters, meat, No. 4772, Doulton, 12".....	Each	1.10
27628	Plates, soup, No. 7881, Booth, 9 1/2".....	Each	.22	28316	Platters, meat, No. 4772, Doulton, 14".....	Each	1.30
27629	Plates, dinner, No. 7881, Booth, 9".....	Each	.26	28523	Platters, meat, No. 3480, 12".....	Each	.25
27631	Plates, dessert, No. 7881, Booth, 7".....	Each	.20	28524	Platters, meat, No. 3480, 16".....	Each	.74
27632	Plates bread and butter, No. 7881, Booth, 6"	Each	.16	28536	Platters, meat, No. 3140, 12".....	Each	.23
27656	Plates, soup, No. 6131, Booth.....	Each	.14	28537	Platters, meat, No. 3140, 16".....	Each	.69
27657	Plates, dinner, No. 6131, Booth.....	Each	.12	28549	Platters, meat, No. 3178, 12".....	Each	.17
27658	Plates, dessert, No. 6131, Booth.....	Each	.10	28551	Platters, meat, No. 3178, 16".....	Each	.55
27659	Plates, bread and butter, No. 6131, Booth..	Each	.08	28589	Platters, meat, G-8721, Minton, 12".....	Each	3.35
27661	Plates, cake, No. 6131, Booth.....	Each	.20	28591	Platters, meat, G-8721, Minton, 10".....	Each	2.40
27691	Plates, sauce, No. 6131, Booth.....	Each	.08	28594	Platters, meat, H-1935, Minton, 10".....	Each	2.50
27768	Plates, sauce, No. 7881, Booth.....	Each	.16	28595	Platters, meat, H-1935, Minton, 12".....	Each	3.50
27772	Plates, bread and butter, No. 7881, Booth...	Each	.25	28616	Platters, meat, G-6262, Minton, 10".....	Each	2.75
27773	Plates, Hors D'Oeuvres, No. 7881, Booth..	Each	.65	28617	Platters, meat, G-6262, Minton, 12".....	Each	3.85
27994	Plates, dessert, E-4772, Doulton.....	Each	.29	28618	Platters, fish, G-6262, Minton, 20".....	Each	17.20
27995	Plates, bread and butter, E-4772, Doulton..	Each	.23	28622	Platters, chop, G-8721, Minton, 14".....	Each	5.85
28319	Plates, pie, wooden.....	Doz.	.05	28627	Platters, meat, G-8721, Minton, 14".....	Each	5.65
28391	Plates, cake, C-4772, Doulton.....	Each	.39	28714	Platters, meat, Conquest, 10".....	Each	.09
28425	Plates, cake, No. 7881, Booth.....	Each	.26	28717	Platters, meat, Conquest, 14".....	Each	.22
28478	Plates, ice, decorated crystal.....	Each	1.10	28677	Pots, tile cutting, 5".....	Each	.28
28481	Plates, breakfast, No. 3480.....	Each	.14	25111	Polish, metal, Sili on Electro.....	Box	.07
28484	Plates, soup, No. 3480.....	Each	.17	26582	Polish, metal, Radua.....	Tin	.10
28488	Plates, dinner, No. 3480.....	Each	.16	26583	Polish, furniture.....	Bot.	.16
28489	Plates, bread and butter, No. 3480.....	Each	.08	26650	Polish, plate, powder.....	Bot.	.08
28490	Plates, fruit, No. 3480.....	Each	.07	26657	Polish, knife, powder.....	Tin	.05
28491	Plates, breakfast, No. 3140.....	Each	.13	27333	Polish, metal, Putz Potade.....	Tin	.08
28492	Plates, soup, No. 3140.....	Each	.16	28338	Polish, floor, Jap-a-lac, quart.....	1 in	.43
28493	Plates, dinner, No. 3140.....	Each	.15	28339	Polish, floor, Jap-a-lac, 1/2 pint.....	Tin	.11
28494	Plates, bread and butter, No. 3140.....	Each	.07	28347	Polish, floor, wax, pint.....	Tin	.38
28495	Plates, fruit, No. 3140.....	Each	.10	28625	Polish, floor, O'Cedar, quart.....	Tin	.81
28496	Plates, breakfast, No. 3178.....	Each	.13	28626	Polish, floor, O'Cedar, 4 oz.....	Bot.	.20
28497	Plates, soup, No. 3178.....	Each	.12	28459	Pots, tea, enamel, 1-quart.....	Each	.32
28498	Plates, dinner, No. 3178.....	Each	.12	25461	Pots, tea, enamel, 3 pint.....	Each	.36
28499	Plates, bread and butter, No. 3178.....	Each	.05	25462	Pots, tea, enamel, 2-quart.....	Each	.41
28500	Plates, fruit, No. 3178.....	Each	.15	25465	Pots, coffee, enamel, 2-quart.....	Each	.38
28501	Plates, coupé, G-8721, Minton, 8".....	Each	1.45	25878	Pots, coffee, enamel, 1-quart.....	Each	.31
28502	Plates, coupé, A-4807, Minton, 8".....	Each	.50				
28503	Plates, sauce, A-4807, Minton.....	Each	.24				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
26812	Pots, coffee, enamel, 1½-pint.....	Each	\$0.27	26179	Saucepans, enamel, 10-quart.....	Each	\$0.68
26813	Pots, coffee, enamel, 3-pint.....	Each	.34	26564	Saucepans, enamel, 4-quart.....	Each	.38
27356	Pots, tea, enamel, 3-quart.....	Each	.33	27449	Saucepans, enamel, 6-quart.....	Each	.50
27692	Pots, coffee, No. 6131, Booth.....	Each	.53	28211	Saucepans, aluminum, 7".....	Each	.88
27733	Pots, flower, 4".....	Each	.03	28212	Saucepans, aluminum, 8".....	Each	1.00
27769	Pots, coffee, No. 7881, Booth.....	Each	.82	28213	Saucepans, aluminum, 8½".....	Each	1.29
28229	Pots, coffee, aluminum, 1-quart.....	Each	1.10	28366	Saucepans, aluminum, 1-pint.....	Each	.22
28317	Pots, tea, H-1935, Minton, 1-quart.....	Each	4.25	28367	Saucepans, aluminum, 1-quart.....	Each	.28
28332	Pots, bean, 1-pint.....	Each	.12	28368	Saucepans, aluminum, 3-pint.....	Each	.38
28333	Pots, bean, 1-quart.....	Each	.16	28369	Saucepans, aluminum, 2½-quart.....	Each	.50
28334	Pots, bean, 2-quart.....	Each	.20	28371	Saucepans, aluminum, 3-quart.....	Each	.63
28364	Pots, coffee, aluminum, 1-quart.....	Each	1.15	28378	Saucepans, aluminum, 1-quart.....	Each	.46
28365	Pots, coffee, aluminum, 2-quart.....	Each	1.30	28379	Saucepans, aluminum, 4-quart.....	Each	.90
28401	Pots, flower, 5".....	Each	.03	28381	Saucepans, aluminum, 6-quart.....	Each	1.15
28402	Pots, flower, 7".....	Each	.09	27517	Saws, carpenter's.....	Each	1.05
28403	Pots, flower, 9".....	Each	.15	27942	Saws, carpenter's.....	Each	1.05
28404	Pots, flower, 12".....	Each	.34	27943	Saws, carpenter's.....	Each	1.00
28405	Pots, azalea, 6".....	Each	.07	28337	Saws, carpenter's.....	Each	1.40
28406	Pots, azalea, 9".....	Each	.18	25699	Scales, family.....	Each	1.15
28407	Pots, azalea, 12".....	Each	.41	2384	Scissors, nail.....	Pair	.50
28416	Pots, watering, brass spout, 4-quart.....	Each	2.30	2385	Scissors, cuticle.....	Pair	.39
28426	Pots, tea, Y-2715, Wedgwood.....	Each	1.45	27261	Scissors, 4½".....	Pair	.25
28429	Pots, tea, No. 6923, Wedgwood.....	Each	1.60	27262	Scissors, 6".....	Pair	.29
28466	Pots, tea, No. 4807, Minton.....	Each	1.55	27263	Scissors, 8".....	Pair	.45
28556	Pots, watering, 10-quart.....	Each	.47	28422	Scissors, 7".....	Pair	.44
28583	Pots, mustard, No. 6131, Booth.....	Each	.27	26489	Screwdrivers, ratchet.....	Each	1.10
28588	Pots, tea, G-8721, Minton.....	Each	3.80	28693	Screwdrivers, Champion, No. 4.....	Each	.16
28639	Pots, tea, No. 3140.....	Each	.70	28694	Screwdrivers, Champion, No. 6.....	Each	.23
28645	Pots, tea, No. 3480.....	Each	.75	23695	Screwdrivers, Champion, No. 8.....	Each	.31
28736	Pots, tea, blue Watteau, Doulton.....	Each	.52	25221	Sets, table, glass, 4 pieces.....	Set	.45
28737	Pots, coffee, blue Watteau, Doulton.....	Each	.65	25789	Sets, water (1 pitcher, 6 glasses).....	Set	.56
27338	Pouches, tobacco, buckskin.....	Each	.54	26613	Sets, tool, with handle.....	Each	.37
27798	Pouches, tobacco, buckskin.....	Each	.50	27497	Sets, tea (1 tea pot, 1 sugar bowl, 1 cream jug), No. 3804, Doulton.....	Set	2.60
26253	Pounders, steak.....	Each	.14	28555	Sets, laundry marking.....	Set	.21
	Powder, plate (see Polish, metal).				Sets, carving (see Knives and forks).		
26448	Pulleys, clothes line.....	Each	.04	25514	Shades, electric light.....	Each	.33
28394	Racks, towel bars, nickel plated.....	Each	.42	25516	Shades, opal, for Juno lamp.....	Each	.25
28396	Racks, towel, folding.....	Each	.76	25925	Shades, Berlin Student lamp.....	Each	.19
25631	Razors, safety, Gillette.....	Each	3.70	26437	Shakers, salt and pepper.....	Each	.05
25632	Razors, safety, Auto Strop.....	Each	3.70	27822	Sharpener, knife.....	Each	.20
25659	Razors, Swedish, ivory handle.....	Each	2.00	28417	Shears, pruning.....	Each	1.30
27154	Razors, safety, Keen Cutter.....	Each	2.45	28647	Shears, pruning, 6".....	Each	.57
27265	Razors, Reppenhagen.....	Each	1.05	25535	Shovels, stove.....	Each	.02
27433	Razors, Krop.....	Each	1.05	25293	Sifters, flour.....	Each	.08
27523	Razors, safety, Ever Ready.....	Each	.72		Silicon (see Polish, metal).		
28697	Razors, safety, pocket edition, Gillette.....	Each	4.00	25545	Skimmers, agate.....	Each	.08
25697	Rollers, towel.....	Each	.05		Spanners (see Wrenches).		
7466	Rugs, Crex, 27" x 54".....	Each	.75	25344	Spoons, mustard, wooden.....	Each	.01
7467	Rugs, Crex, 30" x 60".....	Each	1.00	25346	Spoons, basting, 12".....	Each	.05
7468	Rugs, Crex, 36" x 72".....	Each	1.30	25638	Spoons, coffee, Tudor, silver plated.....	Each	.14
7469	Rugs, Crex, 6' x 9'.....	Each	3.25	25639	Spoons, tea, Tudor, silver plated.....	Each	.14
7471	Rugs, Crex, 8' x 10'.....	Each	5.45	25641	Spoons, tea, electro plated.....	Each	.17
7472	Rugs, Crex, 9' x 12".....	Each	7.15	25642	Spoons, tea, silver plated.....	Each	.13
7473	Rugs, Crex, 36" x 72".....	Each	1.30	25643	Spoons, tea, Windsor, silver plated.....	Each	.05
28435	Rugs, Crex, green, 27" x 54".....	Each	.75	25644	Spoons, desert, Tudor, silver plated.....	Each	.25
28436	Rugs, Crex, brown, 27" x 54".....	Each	.75	25645	Spoons, table, Tudor, silver plated.....	Each	.28
28437	Rugs, Crex, red, 27" x 54".....	Each	.75	25646	Spoons, table, electro plated.....	Each	.40
28438	Rugs, Crex, green, 30" x 60".....	Each	1.00	25647	Spoons, dessert, electro plated.....	Each	.30
28439	Rugs, Crex, brown, 30" x 60".....	Each	1.00	25649	Spoons, table, Windsor, silver plated.....	Each	.10
28441	Rugs, Crex, red, 30" x 60".....	Each	1.00	27174	Spoons, gravy, silver plated.....	Each	.71
28442	Rugs, Crex, green, 36" x 72".....	Each	1.30	27218	Spoons, tea, electro plated.....	Each	.12
28443	Rugs, Crex, brown, 36" x 72".....	Each	1.30	27219	Spoons, table, silver plated.....	Each	.35
28444	Rugs, Crex, red, 36" x 72".....	Each	1.30	28122	Spoons, soup, Jacobean.....	Each	.47
28467	Rugs, Crex, green, 8' x 10'.....	Each	5.45	28123	Spoons, table, Jacobean.....	Each	.45
28468	Rugs, Crex, brown, 8' x 10'.....	Each	5.45	28124	Spoons, coffee, Jacobean.....	Each	.19
28469	Rugs, Crex, red, 8' x 10'.....	Each	5.45	28127	Spoons, dessert, Jacobean.....	Each	.40
28471	Rugs, Crex, green, 9' x 12".....	Each	7.15	28128	Spoons, tea, Jacobean.....	Each	.23
28472	Rugs, Crex, brown, 9' x 12".....	Each	7.15	28351	Spoons, wooden.....	Each	.10
28473	Rugs, Crex, red, 9' x 12".....	Each	7.15	28434	Spoons, basting, aluminum.....	Each	.14
25328	Rules, folding, 24".....	Each	.25	28633	Spoons, tea, Grecian.....	Each	.21
28325	Rules, Zigzag, 72".....	Each	.22	28679	Spoons, table, Windsor.....	Each	.20
28411	Saucers, fiber, for flower pots, 7".....	Each	.11	28681	Spoons, dessert, Windsor.....	Each	.18
28412	Saucers, fiber, for flower pots, 9".....	Each	.14	28682	Spoons, tea, Windsor.....	Each	.10
28413	Saucers, fiber, for flower pots, 12".....	Each	.18	27956	Sprayers, insect powder.....	Each	.07
25448	Saucepans, enamel, 8-quart.....	Each	.58	35169	Springs for double bed.....	Each	5.00
25466	Saucepans, enamel, 2-quart.....	Each	.29	35215	Springs for single bed.....	Each	4.20
26178	Saucepans, enamel, 3-quart.....	Each	.32				



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
35331	Springs for baby crib.....	Each	\$1.40	27422	Trays, medium, No. 3804, Doulton.....	Each	\$0.30
28415	Sprinklers, plant, rubber.....	Each	.95	27423	Trays, large, No. 3804, Doulton.....	Each	.36
	Squeezers, lemon (see Extractors, juice).			27717	Trays, japanned, 20" x 14".....	Each	.14
	Stricks, mop (see Handles).			28493	Trays, decorated crystal, 12".....	Each	8.80
25488	Stoves, lamp, No. 3.....	Each	1.60	28738	Trays, sandwich, blue Watteau.....	Each	.90
25489	Stoves, lamp, No. 2.....	Each	1.05	28418	Trowels, garden, 6".....	Each	.23
25491	Stov.s., lamp, No. 1.....	Each	.55	8872	Trunks, steamer, 32".....	Each	5.70
26634	Stoves, New Perfection, 1-burner.....	Each	4.90	8873	Trunks, steamer, 36".....	Each	7.80
26635	Stoves, New Perfection, 2-burner.....	Each	7.20	9374	Trunks, high, 36".....	Each	13.50
26636	Stoves, New Perfection, 3-burner.....	Each	10.40	9376	Trunks, steamer, 32".....	Each	13.15
28492	Stov.s., fireless cooker, 3-compartment.....	Each	14.55	9638	Trunks, steamer, 32".....	Each	7.70
	Stoves parts:			9639	Trunks, steamer, 36".....	Each	8.95
25987	Ovens for New Perfection stove, No. 2.....	Each	2.35	11329	Trunks, steamer, 32".....	Each	4.35
26478	Ovens for New Perfection stove, No. 1.....	Each	1.85	23823	Trunks, high, 36".....	Each	7.20
27811	Drums for New Perfection stove.....	Each	.75	28324	Trunks, high, 36".....	Each	6.15
28489	Collars for New Perfection stove.....	Each	.14	28562	Trunks, high, 36".....	Each	15.90
28491	Flame spreaders for New Perfection stove.....	Each	.20	28563	Trunks, steamer, 36".....	Each	13.90
25296	Strainers, tea, wire (spout).....	Each	.03	28564	Trunks, steamer, 36".....	Each	10.50
25895	Strainers, tea, wire.....	Each	.03	28565	Trunks, high, 36".....	Each	11.30
26477	Strainers, extension.....	Each	.11	25485	Tubs, wash, galvanized, No. 1.....	Each	.53
26593	Strainers, soup, wire.....	Each	.10	25487	Tubs, wash, galvanized, No. 3.....	Each	.67
28498	Strainers, soup, aluminum.....	Each	.08	27522	Tubs, wash, galvanized, No. 2.....	Each	.64
28495	Straps, trunk, 6-foot.....	Each	.22	28346	Tubs, foot, oval, agate.....	Each	.54
28496	Straps, trunk, 8-foot.....	Each	.24	25371	Turners, cake.....	Each	.04
	Sulkies (see Carriages, baby).			27713	Wax, floor (see Polish).		
25282	Tacks, copper.....	Pkg.	.10	25536	Waxers, flat iron.....	Each	.04
27416	Tacks, carpet, leather head.....	Pkg.	.07	25537	Wicks for Rochester lamps.....	Each	.03
28399	Tacks, carpet, tinned.....	Pkg.	.03	25538	Wicks for Imperial Student lamp.....	Each	.02
28457	Tires, rubber, for baby carriages.....	Each	.17	25539	Wicks for Fletcher lamp.....	Each	.01
28458	Tires, rubber, for baby carriages.....	Each	.25	25541	Wicks for Berlin student lamp.....	Each	.02
28459	Tires, rubber, for baby carriages.....	Each	.26	25542	Wicks for Juno lamp.....	Each	.03
25286	Toothpicks, wood.....	Box.	.03	25544	Wicks for Dietz lantern.....	Doz.	.03
	Tool sets (see Sets).			26594	Wicks for radiant stoves.....	Each	.03
26219	Tops for percolators.....	Each	.05	26594	Wicks for percolators.....	Each	.03
27574	Tops for salt and pepper shakers.....	Each	.02	26725	Wicks for New Perfection stove.....	Each	.15
28419	Traps, mouse.....	Each	.04	28355	Wire, picture, bronze, 25-yard.....	Each	.12
25532	Trays, japanned, oval, 28".....	Each	.35	28354	Wrenches, bicycle.....	Each	.09
27414	Trays, oval, 14" x 11 1/2".....	Each	.08	27997	Wringers, clothes.....	Each	2.70
				28646	Wringers, clothes, "Daisy".....	Each	2.45

## Price Changes.

The following changes in prices of articles in stock at the commissary stores become effective January 24:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Girls shoes.....	2.50	2.10
Men's shoes, pr.....	5.10	5.35
Men's shoes, pr.....	5.25	5.35
Men's shoes, pr.....	4.95	4.00
Men's shoes, pr.....	4.25	3.70
Men's shoes, pr.....	4.40	4.00
Men's shoes, pr.....	4.25	4.30
Men's shoes, pr.....	4.25	4.00
Men's shoes, pr.....	4.25	3.40
Men's shoes, pr.....	3.15	3.49
Women's shoes, pr.....	2.35	2.15
Women's shoes, pr.....	3.15	2.65
Women's shoes, pr.....	4.00	3.75
Women's shoes, pr.....	3.45	3.25
Women's shoes, pr.....	3.80	4.10

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, January 27, 1916:

FISH.		Price.
Corbina, per lb.....		.11
Mackerel, per lb.....		.11
Pan fish, per lb.....		.11
Red snapper, per lb.....		.11
Turtle (wt. 100 to 260 lbs.), per lb.....		.07
FRUITS.		
Coconuts, dry, ea.....		.05
Coconuts, water, ea.....		.05
Pineapples, ea.....		.12
Sugar cane, ea.....		.03
Plantain, ea.....		.01
VEGETABLES.		
Celery, soup, per bunch.....		.04
Chayotes, ea.....		.02
Corn, green, doz.....		.12
Cucumbers, per lb.....		.24*
Egg plant, special, ea.....		.04
Ginger, per lb.....		.05
Lettuce, per lb.....		.11*

Mint, per bunch.....	.04
Okra, ea.....	.004
Onions, green, per bunch.....	.04
Parsley, per bunch.....	.04
Peppers, hot, per doz.....	.05
Peppers, sweet, each.....	.01
Radishes, per bunch.....	.04
Spinach, per bunch.....	.02

Roses (Hospital Farm), per doz..... 50

\* Indicates advance from last list.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascaidas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 1.3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## Wholesale Prices of Fresh Meats.

The following is the wholesale price list No. 207, effective November 11, 1915, and in force until further notice. This list will govern, whether meat is sold from commissaries or from cold storage. The following prices will be increased by 10 per cent in cases of sales to commercial ships and foreign naval vessels, and by 20 per cent in cases of sales to yachts:

Price.	
1. Beef hind, No. 1.....	per lb. \$0.194
2. Beef hind, No. 2.....	per lb. .15
3. Beef hind, native.....	per lb. .094
4. Beef fore, No. 2.....	per lb. .12
5. Beef fore, native.....	per lb. .084
6. Beef, whole round or leg, No. 1.....	per lb. .144
7. Beef, whole round or leg, No. 2.....	per lb. .11
8. Beef, whole round or leg, native.....	per lb. .07

Price.	
9. Beef ribs, No. 1.....	per lb. .24
10. Beef ribs, No. 2.....	per lb. .16
11. Beef ribs, native.....	per lb. .10
12. Beef, short loins, No. 1.....	per lb. .25
13. Beef, short loins, No. 2.....	per lb. .20*
14. Beef, short loins, native.....	per lb. .15
15. Beef, rumps, No. 1.....	per lb. .20*
16. Beef, rumps, No. 2.....	per lb. .17
17. Beef, rumps, native.....	per lb. .12
18. Lamb carcasses.....	per lb. .18
19. Mutton carcasses.....	per lb. .14
20. Pig carcasses.....	per lb. .144
21. Pork, entire loins.....	per lb. .164
22. Veal carcasses.....	per lb. .23*
23. Veal leg.....	per lb. .31*

\* Indicates increase from last list.

\* Indicates decrease from last list.

Above prices do not include cost of special trimming required by United States Army or United States Navy.

The prices quoted in current retail cold storage list will govern for all other items, not included in above.

## Coal.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

## Misdirected Letters.

BALEBOA HEIGHTS, C. Z., January 26, 1916.  
The following insufficiently addressed letters and packages have been received at the office of the Director of Posts and may be procured upon application at the addresses:

Ardea, O.	Gearhart, Otto
Barnett, Harry	Graves, Ned
Bonds, Allen	Hanna, John
Brennan, Willie O.	Hastings, Edward
Captain, John (box 73)	*Henry, H. L.
Captain, Walter B.	*McGuigan, John
*Clark, W. E.	*Mitchell, Emerson R.
Cripps, Ernest T.	Norrow, B. J.
Dunsmuir, M. J.	*Nalton, Walter
Edwards, S. V.	*Shackelford, Arthur
Frishie, Mrs. Etel	Singleton, A. W.
*Card, Wood, Edward (Co. F.)	

## OFFICIAL CIRCULARS.

## Detached Coupons.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., January 14, 1916.

CIRCULAR NO. 663-2.

Any order which may have heretofore been issued by any officer of The Panama Canal or Panama Railroad Company authorizing the acceptance at stores, hotels, messes, or commissaries, of coupons which had been detached from coupon books before being presented in payment of purchases made, is hereby revoked, and in the future clerks and employees will refuse to accept detached coupons for any purpose. Storekeepers, managers of hotels, commissaries, and messes are authorized to personally waive this requirement upon a reasonable showing that the coupons were accidentally detached and are rightfully in the possession of the person presenting them.

GEO. W. GOETHALS,  
Governor.

## Subletting Quarters.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., January 18, 1916.

CIRCULAR NO. 627-11.

1. No employee, either "gold" or "silver," assigned to family or bachelor quarters, has authority to rent his apartment, or any part thereof, to another employee or to a nonemployee, except where The Panama Canal charges rent for a family apartment the occupant may sublet his apartment to a gold employee while the family of the employee to whom quarters are assigned is away on vacation, or he may sublet part of his apartment while occupying same with his family.

2. When family quarters are sublet under the above conditions the party to whom the quarters have been assigned by The Panama Canal may make an additional charge, not to exceed 25 per cent of the amount he pays The Panama Canal, for the rental of dishes, linens, and any other household furnishings sublet with the apartment.

3. When apartments are sublet the district quartermaster must be notified.

GEO. W. GOETHALS,  
Governor.

## Acting Governor.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., January 22, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

With the approval of the Secretary of War, Col. Jay J. Morrow, U. S. Army, will act as Governor of The Panama Canal during the absence of the Governor and the Engineer of Maintenance, effective January 24, 1916.

GEO. W. GOETHALS,  
Governor.

## Acting Head of Panama Railroad.

PANAMA RAILROAD COMPANY,  
PANAMA RAILROAD STEAMSHIP LINE,

OFFICE OF PRESIDENT,

BALBOA HEIGHTS, C. Z., January 24, 1916.

To all concerned—During the absence from the Isthmus of the President and Second Vice President, Col. Jay J. Morrow, U. S. Army, will act as Second Vice President and is authorized to sign such papers as are customarily signed by the President and Second Vice President.

GEO. W. GOETHALS,  
President.

## Books and Catalogues in Library.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., January 22, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

1. Since the establishment of the library in the Administration Building, numerous publications have been acquired which are of interest to the work. It is impracticable at this time to furnish a copy of the library catalogue listing these publications, as it is still in course of preparation; but in order that all who are interested may keep in touch with the class of publications being added to the library, a bulletin will be issued from time to time, setting forth the titles of books received.

2. The library is at your service for any available information or publications which may have a tendency to facilitate the work. To this end, especial effort is being made to procure all publications and catalogues which may be required, and any suggestions offered will be appreciated.

3. Various departments of the Government, as well as a great number of manufacturers, are carrying the library on their mailing lists for literature issued by them. As there are frequently extra copies of such publications

available which may be supplied to other officers for their files, it would be desirable, when otherwise consistent, to make requests on the library (phone No. 224) for any documents and catalogues required. This will obviate a duplication of correspondence which is carried on at present, and spare the annoyance that usually attends the transmission of catalogues by express.

C. A. McILVAINE,  
Executive Secretary.

## Pilots for Cook Inlet, Alaska.

THE PANAMA CANAL,

OFFICE OF CAPTAIN OF THE PORT, CRISTOBAL,

CRISTOBAL, C. Z., January 24, 1916.

To masters of sea ships—The following letter has been received by this department:

SELDOWIA, ALASKA, December 17, 1915.

Ships bound to Anchorage (upper end of Cook Inlet, Alaska) can get a pilot or man with local knowledge, by calling at Seldovia on the lower part of the Inlet. Strangers calling for a pilot at Seldovia should anchor a mile outside the light and blow five whistles, i. e., one long three short, and one long, thus:

Our minimum rate for piloting a vessel up the Inlet, 140 miles, is \$75 for one of 12 feet draft up to and including 17 feet, and \$7.50 per foot for each additional foot draft over 17 feet. There would be no delay if we were notified ahead by mail, or by telegram to Seward, thence here by mail. Steamers wishing pilot services more than four days, will be charged \$3 per day. Steamers can get from water at Port Graham cannery, 17 miles from here, only place on the Inlet.

Yours respectfully,  
(Signed) J. D. NORDYKE, R. V. ANDERSON, H. A. MARKLE.

Respectfully,

P. P. RASSETT,  
Captain of the Port.

## Proposals for Clearing Pastures Near New Culebra.

Sealed proposals will be received at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., February 3, 1916, and then opened, for cutting over and clearing of all growth in accordance with specifications contained in form of contract the areas shown as "A," "B," and "C" on blueprint, copy of which blueprint and form of contract can be obtained upon application to the Chief Quartermaster at any time after noon, January 24. These areas cover approximately 4,000 acres. Bids may be submitted for one, two, or all of the three areas indicated. Bids must be accompanied by cash, post-office money orders, or certified check made payable to the Collector, Panama Canal, in the sum of 10 per cent of the total amount bid as a guarantee that the bidder will, if required by The Panama Canal, enter into a contract with satisfactory security in an amount not less than 20 per cent of the price bid as a guarantee that he will faithfully perform the work covered by the contract. Deposits will be returned to unsuccessful bidders upon rejection of their bids. The Panama Railroad Company reserves the right to accept any bid or to reject any or all bids. Bids must be marked "Proposal for clearing pastures near New Culebra," and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Rainfall from January 1 to 22, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>			
Balboa	.31	4	.89
Balboa Heights	.36	12	.91
Miraflores	.90	18	1.72
Pedro Miguel	.70	14	1.58
Rio Grande	.19	14	.42
<i>Central Section—</i>			
Culebra	.87	14	1.08
Camacho	.63	14	.85
Empire	.45	14	.57
Gambou	1.40	14	1.53
Huan Mir	.36	19	.63
Alhajuela	.40	17	.49
Vigia	.11	18	.15
Frijoles	1.06	14	1.27
Monte Lirio	.65	15	.73
<i>All India Section—</i>			
Gatun	.16	17	.56
Brazos Brook	.49	17	1.03
Colon	1.63	17	2.19
Bocas del Toro			

Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values, midnight to midnight.

Standard rain gage—readings at 8 a. m. daily.

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next six weeks are given in this table:

## JANUARY.

DATE.	Time and height of high and low water.			
Wed., Jan. 26.....	1:34	7:32	13:45	19:51
Thurs., Jan. 27.....	1:9	13:6	2:0	14:4
Fri., Jan. 28.....	2:21	8:15	14:31	20:34
Sat., Jan. 29.....	2:2	13:3	2:5	14:1
Sun., Jan. 30.....	2:5	12:8	3:0	13:8
Mon., Jan. 31.....	4:15	10:11	16:31	22:36
	5:22	11:23	3:3	13:5
	2:7	12:3	3:4	13:6
	6:32	12:40	18:55	
	2:2	13:0	3:0	

## FEBRUARY.

DATE.	Time and height of high and low water.			
Tues., Feb. 1.....	1:15	7:39	13:46	20:03
Wed., Feb. 2.....	1:41	1:4	13:45	2:1
Thurs., Feb. 3.....	2:06	8:38	14:45	21:02
Fri., Feb. 4.....	1:8	0:4	14:0	1:0
Sat., Feb. 5.....	3:05	9:31	15:40	21:54
Sun., Feb. 6.....	1:5	0:5	15:9	0:1
Mon., Feb. 7.....	5:8	10:19	16:31	22:41
Tues., Feb. 8.....	4:50	11:03	17:19	23:27
Wed., Feb. 9.....	16:3	1:4	16:8	-0:7
Thurs., Feb. 10.....	5:35	11:47	18:05	
Fri., Feb. 11.....	16:2	1:1	18:05	
Sat., Feb. 12.....	0:11	6:25	12:29	18:47
Sun., Feb. 13.....	-0:5	15:8	-0:4	16:3
Mon., Feb. 14.....	0:55	7:08	13:14	19:29
Tues., Feb. 15.....	0:1	15:0	0:6	15:3
Wed., Feb. 16.....	1:41	7:53	14:09	20:10
Thurs., Feb. 17.....	1:0	14:1	1:7	14:5
Fri., Feb. 18.....	2:28	8:35	14:48	20:54
Sat., Feb. 19.....	2:1	13:0	3:0	13:9
Sun., Feb. 20.....	3:20	9:23	15:42	21:44
Mon., Feb. 21.....	3:1	12:0	4:0	12:4
Tues., Feb. 22.....	4:17	10:24	16:42	22:19
Wed., Feb. 23.....	3:9	11:2	4:8	11:7
Thurs., Feb. 24.....	5:21	11:40	17:49	
Fri., Feb. 25.....	4:3	10:9	5:1	
Sat., Feb. 26.....	0:04	6:27	12:53	18:55
Sun., Feb. 27.....	1:5	1:0	13:0	1:9
Mon., Feb. 28.....	1:06	7:29	13:50	19:54
Tues., Feb. 29.....	11:8	3:9	11:6	4:4
Wed., Feb. 30.....	1:59	8:21	14:36	20:44
Thurs., Feb. 31.....	1:1	1:1	14:3	1:6
Fri., Feb. 1.....	2:42	9:05	15:16	21:27
Sat., Feb. 2.....	12:9	2:3	13:1	2:7
Sun., Feb. 3.....	3:23	9:44	15:53	22:04
Mon., Feb. 4.....	1:3:5	10:19	16:27	22:40
Tues., Feb. 5.....	4:02	10:19	16:27	22:40
Wed., Feb. 6.....	14:1	1:0	14:4	1:2
Thurs., Feb. 7.....	4:39	10:53	17:02	23:15
Fri., Feb. 8.....	14:4	1:5	14:9	0:8
Sat., Feb. 9.....	5:15	11:27	17:36	23:50
Sun., Feb. 10.....	14:7	0:5	15:2	0:6
Mon., Feb. 11.....	5:52	12:01	18:10	
Tues., Feb. 12.....	14:8	1:4	18:10	
Wed., Feb. 13.....	0:27	6:30	13:28	18:45
Thurs., Feb. 14.....	0:7	14:6	1:0	15:3
Fri., Feb. 15.....	1:07	7:09	13:19	19:24
Sat., Feb. 16.....	1:0	14:3	1:5	15:0
Sun., Feb. 17.....	1:53	7:52	14:07	20:10
Mon., Feb. 18.....	1:5	13:8	2:2	14:4
Tues., Feb. 19.....	2:47	8:44	15:05	21:05
Wed., Feb. 20.....	2:2	9:13	3:0	13:7
Thurs., Feb. 21.....	3:51	9:50	16:13	22:17
Fri., Feb. 22.....	2:7	12:6	3:5	13:2
Sat., Feb. 23.....	5:02	11:11	17:28	23:40
Sun., Feb. 24.....	2:8	12:5	3:6	13:2
Mon., Feb. 25.....	6:15	12:30	18:44	
Tues., Feb. 26.....	2:5	13:0	3:1	

## MARCH.

DATE.	Time and height of high and low water.			
Wed., March 1.....	0:56	7:24	13:36	19:51
Thurs., March 2.....	13:7	1:8	14:0	2:1
Fri., March 3.....	1:59	8:22	14:32	20:48
Sat., March 4.....	14:4	0:8	15:0	1:0
Sun., March 5.....	2:2	9:13	15:22	21:07
Mon., March 6.....	15:2	-0:1	15:9	0:0
Tues., March 7.....	3:43	9:58	16:09	22:22
Wed., March 8.....	15:7	-0:7	16:5	-0:6
Thurs., March 9.....	10:41	16:58	16:58	
Fri., March 10.....	16:0	-0:9	16:7	-0:9
Sat., March 11.....	5:16	11:21	17:34	23:43
Sun., March 12.....	15:9	-0:7	16:5	-0:6
Mon., March 13.....	5:57	12:00	18:57	
Tues., March 14.....	15:6	0:0	16:0	0:0
Wed., March 15.....	0:23	6:37	12:41	18:54
Thurs., March 16.....	0:1	14:9	0:9	15:2

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether the tide is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., January 23, 1916.)

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Jan. 23.....	<i>Polomac</i> (tug).....	American.....	United States Government.....	Cristobal.....	Balboa.....	Ballast.....	.....	Not measured.	.....
Jan. 23.....	<i>Gen. J. M. Schofield</i> .....	American.....	United States Government.....	Cristobal.....	Balboa.....	Ballast.....	.....	Not measured.	.....
Jan. 23.....	<i>C-1, C-2, &amp; C-3</i> .....	American.....	United States Government.....	Cristobal.....	Balboa.....	Ballast.....	.....	Not measured.	.....

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
Jan. 20.....	<i>Belita</i> .....	Dampskacties Belita.....	Philadelphia.....	Jan. 19.....	<i>Jacob Luckenbach</i> .....	Luckenbach Line.....	New York.
Jan. 23.....	<i>Conway</i> .....	Royal Mail S. P. Co.....	Baranquilla.....	Jan. 21.....	<i>Belita</i> .....	Dampskacties Belita.....	New York & way pts.
				Jan. 24.....	<i>Conway</i> .....	Royal Mail S. P. Co.....	Port Limon.

## PORT OF BALBOA.

## ARRIVALS.

## DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
Jan. 15.....	<i>Acajula</i> .....	Pacific Steam Nav. Co.....	Coc's.....	Jan. 16.....	<i>Margam Abbey</i> .....	Williams & Mordey.....	Bordeaux.
Jan. 17.....	<i>O. M. Clark</i> .....	C. H. Higgins Lumber Co.....	San Francisco.....	Jan. 17.....	<i>Peru</i> .....	Pacific Steam Nav. Co.....	Valparaiso.
Jan. 17.....	<i>San Jose</i> .....	Pacific Mail S. S. Co.....	San Francisco.....	Jan. 18.....	<i>Asen</i> .....	South American S. S. Co.....	Valparaiso.
Jan. 17.....	<i>Quilpué</i> .....	Pacific Steam Nav. Co.....	Valparaiso.....	Jan. 19.....	<i>Alfred Nobel</i> .....	Dampskacties Corcoria.....	San Francisco.
Jan. 17.....	<i>Arma</i> .....	Arma Steamship Co.....	Iquique.....	Jan. 20.....	<i>City of Plo</i> .....	Pacific Mail S. S. Co.....	San Francisco.
Jan. 18.....	<i>Alfred Nobel</i> .....	Concordia Steamship Co.....	San Francisco.....	Jan. 20.....	<i>O. M. Clark</i> .....	C. H. Higgins Lumber Co.....	San Francisco.
Jan. 19.....	<i>Logan</i> .....	U. S. Army.....	Mejillones.....	Jan. 21.....	<i>Hualde</i> .....	Peruvian Line.....	San Francisco.
Jan. 19.....	<i>Howick Hall</i> .....	U. S. Steel Products Co.....	San Francisco.....	Jan. 21.....	<i>Harry Luckenbach</i> .....	Luckenbach Line.....	San Francisco.
Jan. 21.....	<i>Coloso</i> .....	Pacific Steam Nav. S. Co.....	Guayaquil.....	Jan. 22.....	<i>Acajula</i> .....	Pacific Steam Nav. Co.....	Taboga.
Jan. 21.....	<i>Cauca</i> .....	Royal Mail S. P. Co.....	Buenaventura.....				
Jan. 22.....	<i>Jamaica</i> .....	C. H. Higgins Co.....	Cristobal.....				
Jan. 23.....	<i>Coaster</i> .....	U. S. Navy.....	Cristobal.....				
Jan. 23.....	<i>Palomac</i> .....	U. S. Navy.....	Cristobal.....				
Jan. 23.....	<i>Gen. J. M. Schofield</i> .....	U. S. Navy.....	Cristobal.....				
Jan. 23.....	<i>C-2</i> .....	U. S. Navy.....	Cristobal.....				
Jan. 23.....	<i>C-1</i> .....	U. S. Navy.....	Cristobal.....				
Jan. 23.....	<i>C-3</i> .....	U. S. Navy.....	Cristobal.....				
Jan. 23.....	<i>Urubamba</i> .....	Peruvian Line.....	Mollendo.....				

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
Jan. 24.....	<i>Masticion</i> .....	Charente Steamship Co.....	San Francisco.....	Jan. 24.....	<i>Erroll</i> .....	J. Warrack & Co.....	Colonel.
Jan. 23.....	<i>Mary</i> (toller).....	U. S. Navy.....	San Francisco.....	Jan. 25.....	<i>Logan</i> .....	U. S. Army.....	Manila.
Jan. 24.....	<i>Thode Fogeland</i> .....	W. Wilhelmsen.....	Tocajilla.....	Jan. 25.....	<i>Quilpué</i> .....	Pacific Steam Nav. Co.....	Valparaiso.
Jan. 24.....	<i>Santa Cecilia</i> .....	Atlantic and Pacific S. S. Co.....	San Francisco.....	Jan. 25.....	<i>San Jose</i> .....	Pacific Mail Steam Co.....	San Francisco.
Jan. 25.....	<i>Limari</i> .....	South American S. S. Co.....	Valparaiso.....	Jan. 25.....	<i>N. Y. &amp; Pacific S. S. Co.</i> .....	South American S. S. Co.....	Valparaiso.
Jan. 25.....	<i>Costano</i> .....	Coast Oil Transport Co.....	San Francisco.....	Jan. 31.....	<i>Limari</i> .....	South American S. S. Co.....	Valparaiso.
Jan. 30.....	<i>Newport</i> .....	Pacific Mail S. S. Co.....	San Francisco.....	Feb. 1.....	<i>Jamaica</i> .....	Royal Mail S. P. Co.....	Buenaventura.

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending midnight, Saturday, January 22, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun Lake	Gatun Lake	Miraflores Lake.
Sun., Jan. 16.....	125.80	92.31	86.76	67.51	79.70
Mon., Jan. 17.....	125.80	92.15	86.75	67.51	80
Tues., Jan. 18.....	126.06	92.91	86.75	67.51	78
Wed., Jan. 19.....	126.08	92.69	86.75	67.51	92
Thurs., Jan. 20.....	125.80	92.28	86.76	67.51	85
Fri., Jan. 21.....	125.80	92.26	86.76	67.51	84
Sat., Jan. 22.....	125.80	92.25	86.76	67.51	83
Heights of low water to nearest foot.....	125	91	0	0	0

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama

Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Alemania* the voyage requires seven days. Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, February 7 and March 6, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the two sailings mentioned above.

\*NOTE—When the vessel sailing Thursday is the *Admiral*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.				
Vessel.	Line.	Sails.	Arrives.	
San Marta.....	U. F. C. Jan.	19.....	Jan. 26	
Advance.....	P. R. R. Jan.	20.....	Jan. 27	
Metapan.....	U. F. C. Jan.	22.....	Jan. 31	
Almirante.....	U. F. C. Jan.	26.....	Feb. 2	
Panama.....	P. R. R. Jan.	27.....	Feb. 2	
Pastores.....	U. F. C. Jan.	29.....	Feb. 6	
Zacapa.....	U. F. C. Feb.	2.....	Feb. 9	
Calamares.....	P. R. R. Feb.	23.....	Feb. 9	
Carrillo.....	U. F. C. Feb.	5.....	Feb. 13	
Colon.....	P. R. R. Feb.	10.....	Feb. 16	
Tenadores.....	U. F. C. Feb.	12.....	Feb. 20	
San Marta.....	U. F. C. Feb.	16.....	Feb. 23	
Advance.....	P. R. R. Feb.	17.....	Feb. 24	
Metapan.....	U. F. C. Feb.	19.....	Feb. 28	
Almirante.....	U. F. C. Feb.	23.....	Mar. 1	
Panama.....	P. R. R. Feb.	24.....	Mar. 1	
CRISTOBAL-COLON TO NEW YORK.				
Colon.....	P. R. R. Jan.	27.....	Feb. 2	
Carrillo.....	U. F. C. Jan.	27.....	Feb. 3	

Tenadores.....	U. F. C. Jan.	31.....	Feb. 7
Advance.....	P. R. R. Feb.	3.....	Feb. 10
San Marta.....	U. F. C. Feb.	3.....	Feb. 10
Metapan.....	U. F. C. Feb.	7.....	Feb. 15
Panama.....	P. R. R. Feb.	10.....	Feb. 16
Almirante.....	U. F. C. Feb.	10.....	Feb. 17
Pastores.....	U. F. C. Feb.	14.....	Feb. 21
Allianca.....	P. R. R. Feb.	17.....	Feb. 23
Zacapa.....	U. F. C. Feb.	17.....	Feb. 24
Calamares.....	U. F. C. Feb.	21.....	Feb. 28
Colon.....	P. R. R. Feb.	24.....	Mar. 1
Carrillo.....	U. F. C. Feb.	24.....	Mar. 2
Tenadores.....	U. F. C. Feb.	28.....	Mar. 6
Advance.....	P. R. R. Mar.	2.....	Mar. 8

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba.....	U. F. C. Jan.	22.....	Jan. 29
Coppename.....	U. F. C. Jan.	26.....	Jan. 31
Abangarez.....	U. F. C. Jan.	29.....	Feb. 5
Carrigo.....	U. F. C. Feb.	2.....	Feb. 7
Atenas.....	U. F. C. Feb.	5.....	Feb. 12
Hereda.....	U. F. C. Feb.	9.....	Feb. 14
Turrialba.....	U. F. C. Feb.	12.....	Feb. 19
Coppename.....	U. F. C. Feb.	16.....	Feb. 21
Abangarez.....	U. F. C. Feb.	19.....	Feb. 26
Carrigo.....	U. F. C. Feb.	23.....	Feb. 28
Atenas.....	U. F. C. Feb.	26.....	Mar. 4
Hereda.....	U. F. C. Mar.	1.....	Mar. 6
Turrialba.....	U. F. C. Mar.	4.....	Mar. 11
Coppename.....	U. F. C. Mar.	8.....	Mar. 13

## CRISTOBAL-COLON TO NEW ORLEANS.

Parishina.....	U. F. C. Jan.	30.....	Feb. 3
Turrialba.....	U. F. C. Jan.	30.....	Feb. 6
Coppename.....	U. F. C. Feb.	6.....	Feb. 11
Abangarez.....	U. F. C. Feb.	6.....	Feb. 13
Carrigo.....	U. F. C. Feb.	13.....	Feb. 18
Atenas.....	U. F. C. Feb.	13.....	Feb. 20
Hereda.....	U. F. C. Feb.	20.....	Feb. 25
Turrialba.....	U. F. C. Feb.	20.....	Feb. 27
Coppename.....	U. F. C. Feb.	27.....	Mar. 3
Abangarez.....	U. F. C. Mar.	5.....	Mar. 10
Atenas.....	U. F. C. Mar.	5.....	Mar. 12



# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, FEBRUARY 2, 1916. No. 24.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, on this basis:

Subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address All Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Canal Not to Be Considered in Routing Shipping at Present.

As in the two weeks preceding, several vessels arrived at Balboa last week in the hope of passing through the Canal, and then sailed for their destinations in the Atlantic by way of the Strait of Magellan. These included the steamship *Valetta*, from Tacoma for Ipswich with 8,480 tons of barley; and the *Karma*, from Victoria for the United Kingdom with 2,677 tons of lumber and explosives.

The Norwegian steamship *Thode Fogelund*, which arrived from Tocopilla with a cargo of 6,800 tons of nitrates in the morning of Thursday, January 27, to take orders at Balboa, received directions to continue to San Francisco, since it was impossible to make the transit of the Canal.

The Danish steamship *Chumpon* of the East Asiatic Company arrived at Balboa at 7 p. m., January 29, in the hope of passing through the Canal on the way to Copenhagen. She sailed on February 2 for Talara.

As has been previously pointed out, the Canal authorities can give vessels no encouragement to wait at the entrances for transit. A statement on the subject was issued by the Governor on January 22, as follows:

"It is not intended to open the Canal until a safe and practically permanent channel is reasonably assured. This can not be assured at present, although the operations of the dredges during the past four months have shown that they are able, when not interrupted in the work by the passage of ships or cleaning of the channel necessary to provide ample depth for navigation, to gain on the slides, and it is desired to have a reasonable

assurance that they can maintain this gain, even with the delay from the above causes.

"It is hoped that before long better information on two main controlling features will be available. The large mass of rock at the base of Gold Hill, on the east bank, is being carefully observed. If the materials behind it move northwardly, as is not unlikely, one danger of interruption to navigation will be removed. The other feature is the rate of motion that will result in the west slide when dredges attack its face, as will shortly be done. It is believed that the dredges can keep well ahead of any probable motion of this mass, provided the east bank is quiescent, or nearly so.

"As soon as this office feels that sufficient information on these two points is at hand to justify it, a prediction will be made. In the meantime it is recommended that the Canal be not considered in routing shipping. The work of restoration of the channel is, however, proceeding most favorably; the office has in mind the desire of commerce to resume navigation through the Canal, and as long advance notice as possible will be given to shippers in order that preparations for such routing of vessels may be adequate."

### Progress of Excavation at the Culebra Slides.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, January 31, amounted to 230,830 cubic yards. Other excavation in the Cut during the same period amounted to 29,361 cubic yards, making a total for the week of 260,191 cubic yards. In addition, 22,834 cubic yards were rehandled by the pipeline suction dredge No. 86, the Belgian ladder dredge *Marmot*, and the seagoing suction dredge *Culebra*.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
<i>Cascadas</i> .....	15-yard dipper.....	59,835
<i>Gambao</i> .....	15-yard dipper.....	63,720
<i>Paraiso</i> .....	15-yard dipper.....	59,325
<i>Corocal</i> .....	Ladder.....	47,950
<i>Culebra</i> .....	Seagoing suction.....	21,418
<i>No. 86</i> .....	Pipeline suction.....	16,232
<i>Cardenas</i> .....	5-yard dipper.....	14,545

The Belgian ladder dredge *Marmot* was taken out of service at 6 a. m. on January 30.

The average aggregate output from the Cut during the 14 weeks preceding that ending at midnight of Monday, January 31, was 258,780 cubic yards, not including re-handled spoil, the total amount of primary excavation during that period having been 3,622,920 cubic yards.

### Arrival of the "Bushnell."

The new submarine tender *Bushnell* of the United States Navy arrived at Balboa from Seattle on Tuesday, February 1. The *Bushnell* is on the way to Boston.

The submarines C-1, C-3, and C-5 were returned from Balboa to Cristobal on January 28 and 29, in tow of the *Potomac*.

## TO EXTEND BREAKWATER.

Length of East Breakwater in Limon Bay to Be Increased Approximately 1,300 Feet.

Arrangements are under way to extend the East Breakwater in Limon Bay 1,300 feet. The original estimate called for a breakwater 7,200 feet in length, extending from a point 2,000 feet from the outer end of the West Breakwater to a point 4,125 feet from the eastern shore of the bay. In July, 1914, it was decided to reduce the length of the breakwater by 1,800 feet, making its inner end 5,925 feet from shore. This arrangement was made in the interests of economy, as the cost of construction was estimated at \$475 per linear foot. The progress of the work has been such, in spite of a loss of approximately \$360,000 in damages done by northers in February and April, 1915, that it is expected that an additional 1,300 feet of breakwater can be built within the original estimate. This will be within 500 feet of the length first proposed. Under the latest plan, the East Breakwater will be a structure 6,700 feet in length, extending from a point 2,000 feet from the outer end of the West Breakwater to a point 4,625 feet from shore. A detached breakwater is feasible on account of the partial protection afforded by Margarita Point and the northwesterly point of Manzanillo Island. This is shown in the accompanying map of the bay. The landward extension will considerably reduce the gap at the east, and augment the protection afforded by the points.

This change of plan has enabled the excess proportion of core rock received from the Sosa Hill quarry along with the required large armor rock to be used. In order to produce the armor rock desired for the 5,400-foot structure it was necessary to excavate a great deal of smaller, or core rock; and as this is in excess of the needs of it on the 5,400-foot structure it has been decided to use it for filling for a 1,300-foot extension. It was at first proposed to dump it along the approach trestle, as a means of disposing of it which would be of at least some aid to the breakwater, and not to armor it; but as it was found that the positive value of the structure could be greatly increased by armor the fill as a part of the original construction it was decided to make the extension a regular part of the breakwater, armor and all, as far as the funds will permit.

The total of armor required has, accordingly, increased. The production of armor rock being relatively slow and expensive, resort will be had to greater use of concrete blocks for armor. The original order for 10,000 concrete cubes, seven feet on the side, containing about 12.3 cubic yards each and weighing approximately 25 tons, to be manufactured by contractors at Gambao, has been increased by 20 per cent in accordance with an optional clause in the original contract, making the total output from this source 12,000 blocks.

or 147,600 cubic yards. In addition, about 75,000 cubic yards of blocks will be manufactured by forces of The Panama Canal.

The blocks to be made by the Canal forces will be smaller than those turned out by the contractor at Gamboa. The East Breakwater forces will make about 4,500 blocks at Coco Solo, each block to be six feet three inches on a side with three-inch corners, and weighing about 18 tons; the aggregate of concrete to be used will be about 40,000 cubic yards. The concrete-mixing organization which has been engaged at the permanent coaling plant at Cristobal will make 4,600 blocks, five feet three inches on a side and containing 5.3 cubic yards, weighing about 10½ tons each, an aggregate of about 24,000 cubic yards of concrete. The organization at Pier 7, Cristobal, will make about 4,000 blocks, four feet three inches on a side, containing 2.8 cubic yards and weighing 5.6 tons each, a total of approximately 11,200 cubic yards. The quantity to be produced by each plant may be varied according to the developments. The coaling plant forces will work at the south end of the plant, and the Pier 7 forces will lay out a yard in the vicinity of the old Mount Hope borrow pit of the Panama Railroad.

It is expected that the manufacture of blocks will begin at the coaling plant on Friday of this week; by the Pier 7 forces, about February 7; and at Coco Solo, about February 10 or 12.

The concrete blocks are not as hard as the rock obtained from Sosa Hill, and weigh about 20 pounds less per cubic foot. As they will meet rough treatment in withstanding the rugged seas that blow in from the north they are liable to considerable deterioration, and it is proposed to use them mostly for the inner and subsurface armoring, and to cover them with armor rock. Blocks are now being placed on the inner side of the breakwater at the land end of the 5,400-foot project, and at the same time other blocks are being placed at the outer end on the sea side, to form the base of the armor. They have been plowed from cars to bring the fill up to approximately five feet below the surface of the water; and armor rock is being placed on them to bring the fill up to about seven feet above the surface. The structure is not being carried to full height at any point now because it is desired to have the armor along the sea side spread over as great a length as practicable.

#### To Remove the Village of Chagres.

Arrangements are being made for the removal of the town of Chagres, situated on the east bank of the Chagres River at its mouth, adjacent to the old Spanish fort of San Lorenzo. This village contains 96 houses at present. The territory lying between the east bank of the Chagres, beyond the Canal Zone, and the present western boundary be-

tween the Canal Zone and the Republic of Panama has been taken over by the United States for military purposes, in accordance with the provisions of Articles II and III of the treaty of November 18, 1903.

A party consisting of the Subsecretary of Foreign Relations of Panama, the governor of the province of Colon, the Special Attorney for The Panama Canal, the Land Agent, and the assistant engineer in charge of land surveys, made a trip from Cristobal to Chagres in the tug *Porto Bello* on Monday, January 31, and continued westward beyond the mouth of the Chagres until a satisfactory situation for the relocation of the village was found. This is at the mouth of the Lagarto River, about eight miles beyond the Chagres. On the west bank the present village of Lagarto is situated, containing more than 100 houses, and a population of about 500. The site selected for the inhabitants of Chagres is directly across the river, on a table-land rising to a height of about 40 feet above the sea. The Panama Canal will clear an area of about 20 acres here and lay it off as a townsite, and furnish transportation for the effects of the inhabitants of Chagres to the new town, after settling with them their claims for improvements at Chagres.

The Lagarto is about 70 feet wide at its mouth, and as deep as 20 feet inside of the bar. The new townsite is considered well situated.

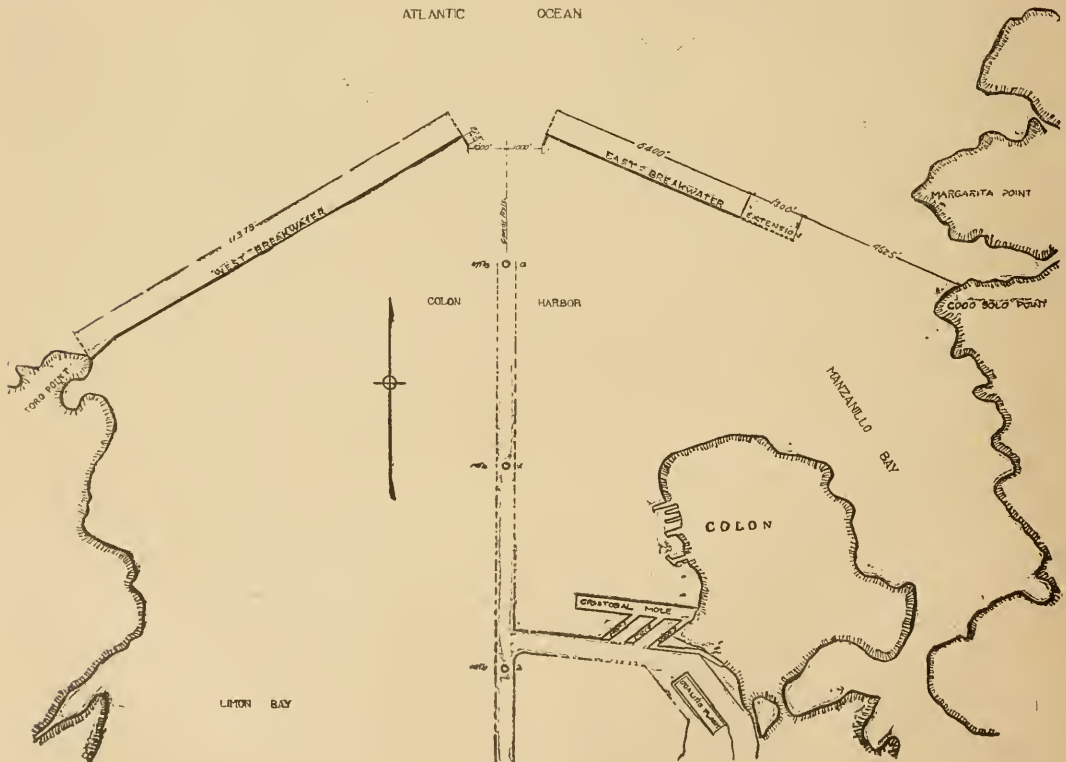


CHART SHOWING LOCATION OF EAST BREAKWATER AND 1,300-FOOT EXTENSION.

## PRESIDENT'S PROCLAMATION

## Appointing a Day for Making Contributions for Aid of Jews in Countries at War.

¶ The President issued, under date of January 11, a proclamation designating January 27 as a day for making contributions to assist the Jews in the various countries now at war. It is similar in general form to the proclamation on behalf of the people of Poland, published in THE CANAL RECORD of January 5, 1916. Copy of the proclamation was received on the Isthmus too late for publication prior to January 27, but contributions may be made at any time. Persons on the Isthmus may send them to the national headquarters of the American Red Cross, as indicated in the proclamation, or to the treasurer of the Canal Zone chapter, Mr. John H. McLean, Balboa Heights. The proclamation follows:

*By the President of the United States of America. A Proclamation:*

Whereas, I have received from the Senate of the United States a resolution, passed January 6, 1916, reading as follows:

"Whereas, in the various countries now engaged in war there are nine millions of Jews, the great majority of whom are destitute of food, shelter, and clothing; and

Whereas, millions of them have been driven from their homes without warning, deprived of an opportunity to make provision for their most elementary wants, causing starvation, disease, and untold suffering; and

Whereas, the people of the United States of America have learned with sorrow of this terrible plight of millions of human beings and have most generously responded to the cry for help whenever such an appeal has reached them; therefore be it

Resolved, That, in view of the misery, wretchedness, and hardships which these nine millions of Jews are suffering, the President of the United States be respectfully asked to designate a day on which the citizens of this country may give expression to their sympathy by contributing to the funds now being raised for the relief of the Jews in the war zones."

And whereas, I feel confident that the people of the United States will be moved to aid the war-stricken people of a race which has given to the United States so many worthy citizens;

Now, therefore, I, Woodrow Wilson, President of the United States, in compliance with the suggestion of the Senate thereof, do appoint and proclaim January 27, 1916, as a

day upon which the people of the United States may make such contributions as they feel disposed for the aid of the stricken Jewish people.

Contributions may be addressed to the American Red Cross, Washington, D. C., which will care for their proper distribution.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington this eleventh day of January, in the year of our Lord one thousand nine hundred and sixteen, and of the independence of the United States the one hundred and fortieth.

[SEAL]

WOODROW WILSON.

By the President:  
ROBERT LANSING,  
Secretary of State.

[No. 1320.]

## Moving Schools in Cristobal.

On account of the additional noise in the neighborhood of the school for white children at Cristobal resulting from the work of construction of the concrete building for the American Bible Society, the school has been transferred to the building previously occupied by the colored school, on the road to Mount Hope. The colored school has been transferred to the lodge hall, across the street from the school. The moving of the schools was begun on Monday, January 31. The noise in the vicinity of the former white school was such as to cause suspension of school during several days of last week.

The Cristobal white school has 171 children in the eight elementary grades and 23 in the first and second years of high school, a total of 194. The colored school has 85 children enrolled, in six grades.

A memorandum has been sent to the Superintendent of the Panama Railroad in this connection, stating in part:

"This will probably result in a great many of the Cristobal children's crossing the railroad tracks above the regular crossing at the commissary, in order to shorten the distance to school. Will you please, therefore, issue instructions to your locomotive engineers to use extreme caution in driving over this section from 8.30 to 9 and 10.30 to 12.15 in the morning, and from 12.30 to 1 and 2.30 to 3.15 in the afternoon, during which times the children will be going to and returning from school. Arrangements have also been made with the police department to have an officer patrol the railroad tracks opposite the colored school building during these hours."

## Deceased Employees.

Name.	Check No.	Native of	Isthmian Residence.	Employed by	Date of death.
Taylor, Joseph.....	110020	Barbados.....	Colon.....	P. R. R.....	Jan. 20, 1916.
Mighty, James.....	95284	Jamaica.....	Paraiso.....	P. R. R.....	Jan. 20, 1916.
Walcott, Isaac.....	47399	Demerara.....	La Boca.....	Term. Cons. Div.	Jan. 24, 1916.
Campbell, Thaddeus.....	89216	Jamaica.....	Colon.....	P. R. R.....	Jan. 17, 1916.
Gomas, Samuel.....	22850	St. Vincent.....	Panama.....	Dredging Div.....	Jan. 26, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## Pouring Concrete for Pontons Being Built on Floor of New Dry Dock.

The pouring of concrete for the first of the reinforced concrete pontoons being constructed on the floor of the dry dock at Balboa was begun in the morning of Friday, January 28, and all of the exterior shell and interior bracing and stiffening members were poured in one operation, to a height of six feet above the floor, which will be about the water line when the pontoon is in use. On Sunday morning the exterior forms were taken down, for inspection of the concrete, and moved, to be reused on the second pontoon. The pouring of the remainder of the walls of the first pontoon to the final height of eight feet, and of the decking, will be done in about two weeks.

The reinforcement for the second pontoon is complete, and that for the third and fourth is well under way. Each pontoon is to contain when finished, a total of approximately 45,106 pieces of reinforcing steel, weighing 67,783 pounds and aggregating 107,493 linear feet. The concrete in a pontoon amounts to 186 cubic yards.

The completed pontoons will be left in place on the floor of the dry dock, to be floated out after the flooding of the dock.

## Coal Barges Transferred from Cristobal to Balboa.

In view of the decreased consumption of coal at Cristobal, following the closing of the Canal, and the increased demand for coal at Balboa, principally from vessels which have come from the Pacific in the hope of passing through the Canal and then require coaling in preparation for a longer voyage, the Panama Railroad Company transferred two 500-ton coal barges, equipped with coal handling apparatus, through the Canal from Cristobal to Balboa on Tuesday, February 1. One of the barges is fitted with two Demayo coal conveyors, suspended from booms and electrically operated, capable of delivering coal through the side ports of vessels; the other is equipped with a long boom carrying a clam-shell bucket, operated by a 3-drum, steam-driven hoisting engine, capable of delivering coal over all through deck hatches. Both barges were loaded with coal when towed through the Canal.

The coal supplied to vessels at Cristobal and Colon during the month of January amounted to 1,698 tons, and that supplied at Balboa amounted to 11,712 tons.

## The "Santa Cecilia" Transshipping Cargo by Rail.

The American steamship *Santa Cecilia*, operated by W. R. Grace & Company, has completed the discharge of a cargo of 8,607 tons of nitrates at Balboa, for shipment across the Isthmus on the Panama Railroad and reshipment at Cristobal. The *Santa Cecilia* arrived in the afternoon of January 24, and following the return of the steamship *Cristobal* of the Panama Railroad Steamship Line from Cartagena on January 26, her cargo has been handled direct into the hold of the *Cristobal*, without storage on the piers.

Following the discharge of her cargo of nitrates, the *Santa Cecilia* is loading a general cargo for the return voyage to Antofagasta and way ports, and will probably sail on February 4.

THE CANAL RECORD acknowledges with thanks the receipt of a pamphlet, "The American Merchant Marine", published by the Boston Chamber of Commerce.



## PANAMA CANAL LIBRARY.

Aim to Make It of Active Service to the Several Divisions of Canal Work.

In order to make the Canal library of greater service to the departments and divisions of The Panama Canal, as well as to individuals, the library solicits suggestions as to the publications which would be of service; and has begun the issue of bulletins, setting forth the additions to the library as they are received. A complete catalogue of the publications at hand, between 7,500 and 10,000 pieces, is in preparation. The divisions of the classification have been designed to make easily available the publications which have especial bearing on the Canal work, and marine information; and also to segregate the information on outside topics in which there may be local interest. It is expected that the library will grow with the demands on it, and that it can be made representative and helpful if the several divisions will co-operate with its management.

The following is the first bulletin of recent additions:

## GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS, ETC.

- Barton, John K., U. S. N., Internal Combustion Engines. An elementary treatise on gas, gasoline, and oil engines for the instruction of midshipmen at the United States Naval Academy. 1907.
- Barton, John K., U. S. N., Mechanical Processes. A practical treatise on workshop appliances and operations, for the instruction of midshipmen at the United States Naval Academy. 1906.
- Barton, John K., U. S. N., Naval Reciprocating Engines and Auxiliary Machinery (Naval Engines and Machinery, revised and enlarged, with plates). 1914.
- Danforth, Geo. W., U. S. N., An Elementary Outline of Mechanical Processes. Arranged for the instruction of midshipmen at the United States Naval Academy and for students in general. 1912.
- Holmes, U. T., U. S. N., Experimental Engineering. 1911.
- Logan, Geo. W., U. S. N., Elements of Hydrographic Surveying. 1911.
- Lyon, Frank, U. S. N., and Hinds, A. W., U. S. N., Marine and Naval Boilers. (Revised by W. P. Beecher, U. S. N., and John S. Barleau, U. S. N.) 1915.
- Muir, W. C. P., U. S. N., A Treatise on Navigation and Nautical Astronomy, including the Theory of Compass Deviations. Prepared for use as a textbook at the United States Naval Academy. 1911.
- Offley, C. N., U. S. N., Engineering Mechanics. A revision of "Notes on Machine Design," prepared by officers of the Department of Marine Engineering and Naval Construction, United States Naval Academy, combined with the mathematics and general principles necessary for the solution of the problems. 1911.
- Department of Agriculture, Willows—Their growth, use, and importance. Bulletin No. 316. By George N. Lamb, forest examiner. 1915.
- Department of Commerce, Annual Report of the Commissioner of Navigation to the Secretary of Commerce for the fiscal year ended June 30, 1915. 1915.
- Department of Commerce, Annual Report of the Supervising Inspector General, Steamboat-Inspection Service, to the Secretary of Commerce for the fiscal year ended June 30, 1915. 1915.
- Department of Labor, The Boot and Shoe Industry in Massachusetts as a Vocation for Women. Bulletin No. 180 of the United States Bureau of Labor Statistics. 1915.
- Department of Labor, Compensation Legislation of 1914 and 1915. Bulletin No. 185 of the United States Bureau of Labor Statistics. 1915.
- Interstate Commerce Commission, Twenty-Ninth Annual Report of the Interstate Commerce Commission. Two parts. 1915.
- Navy Department, Annual Report of the Division of Naval Militia Affairs for the fiscal year 1915. 1915.
- Navy Department, Annual Report of the Chief of the Bureau of Yards and Docks to the Secretary of the Navy for the fiscal year 1915. 1915.
- Navy Department, Annual Report of the Chief of the Bureau of Navigation to the Secretary of the Navy. 1915.
- President of the United States, Address of the President of the United States, delivered at a joint session of the two houses of Congress, December 7, 1915. (H. R. Doc. No. 1, 64th Cong., 1st session). 1915.

## MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.

- Henry A. Dreer. Garden book for 1916. (Plants, flowers, vegetable seeds, etc.).
- D. Van Nostrand Co., Record of scientific literature, technical, industrial, engineering, leaflets.
- Machinery, Machinery's Mechanical Books. How to avoid accidents, etc., leaflets.
- The Draper-Maynard Co., Sporting and athletic goods, etc., catalogue.
- McGill Ticket Punch Company, Ticket punches for all purposes, price list and catalogue.
- K-P-F Electric Co., High tension switches, catalogues.
- Crouse-Hinds Co., Reflectors, for roundhouse and industrial plant lighting. Types Rm & RS, bulletin 300. Imperial arc headlights, catalogue 201. Residence panel boards, bulletin 1-B. Multimeter panel boards, leaflet. Panels and cabinets, bulletin 1. Panels, types "O" and "P," bulletin 1-A. Incandescent headlights—types W, Z, B, 1, and Syracuse changeable, etc., bulletin 56. The Aft-jastarod, types "A" and "B," conduits, bulletin No. 1000-C (including bulletins Nos. 1000-A and B).
- Barnard Stamp Co., Arven time stamp, illustrated catalogue and price list.
- The Cincinnati Time Recorder Company, Autograph bulletin. "Stop the time leaks" (with forms.)
- Ellis Time Stamp Co., Ellis 5¢ time stamp, dates, etc., leaflets.
- Pettes & Randall Co., Automatic intercommunicating telephones—autophone system, bulletins No. 12. Cleveland magneto watchman's clocks, time detectors, etc., catalogues. Standard employees' time recorder, leaflets.
- Atlas Engineering Co., Atlas mixer, leaflets and prices.
- Eureka Machine Co., Eureka concrete mixer, catalogues.
- F. G. Gauntt Mfg. Co., Gauntt batch concrete mixer, with batch charging hopper, catalogue. Gauntt portable adjustable concrete mixer, catalogue.
- Koehring Machine Co., Koehring mixer, catalogues; "More batches per day," leaflet.
- Marsh-Capron Mfg. Co., Marsh-Capron grouter, book No. 32. M-C rail-track mixers for concrete construction of every description, leaflets.
- Milwaukee Concrete Mixer Company, "Wisconsin" low charging mixers, catalogues. The Milwaukee and Wisconsin, catalogues.
- Northwestern Steel and Iron Works, Northwestern concrete machinery, catalogues No. 9.
- Waterloo Cement Machinery Corporation, Wonder mixers, the Wonder paver.
- The following is a list of the periodicals now received at the library regularly and filed:
- Army List and Directory. Monthly. Washington.
- Commerce Reports. Daily. Washington.
- Congressional Record. Daily. Washington.
- Daily Bulletin of Orders Affecting the Postal Service. Washington.
- Hydrographic Bulletin. Weekly. Washington.
- Hydrographic Office Notices to Mariners. Weekly. Washington.
- List of Publications issued by Department of Agriculture. Monthly. Washington.
- List of Publications issued by Department of Commerce. Monthly. Washington.
- Monthly Review of the United States Bureau of Labor Statistics. Washington.
- Navy and Marine Corps List and Directory. Monthly. Washington.
- Philippine Government Monthly Journal. Manila.
- Philippine Bureau of Public Works. Quarterly Bulletin. Manila.
- Pilot Charts—one each for North Atlantic; South Atlantic; North Pacific; South Pacific; and Indian Oceans. Weekly. Washington.
- Postal Guide Supplement. Monthly. Washington.
- Public Health Reports. Monthly. Washington.
- Register of the Department of State. Monthly. Washington.
- Register of Diplomatic and Consular Officials of the United States. Monthly. Washington.
- Treasury Decisions. Weekly. Washington.
- United States Naval Medical Bulletin. Monthly. Washington.
- Weather Map. Daily. Washington.
- The American Contractor. Monthly. Chicago.
- Bulletin of the Panamerican Union. Monthly. Washington.
- Compressed Air Magazine. Monthly. Easton, Pa.
- Diario de Panama. Daily. Panama.
- Electrical World. Monthly. New York.
- Engineering and Contracting. Monthly. Chicago.
- Engineering Record. Weekly. New York.
- Export American Industries. Monthly. New York.
- The Florida Grower. Monthly. Tampa, Fla.
- Gaceta Oficial. Daily. Panama.

The Guide (Shipping). Weekly. San Francisco.

Journal of Commerce. Daily. New York.

La Prensa. Daily. Panama.

Live Stock and Dairy Journal. Monthly. Sacramento, Cal.

Lloyd's List. Weekly. London.

Panama Life. Semi-monthly. Balboa Heights, C. Z.

Pan-American Magazine. Monthly. New York.

Red Cross Magazine. Monthly. Washington.

Shipping Gazette Weekly Summary. London.

Star and Herald. Daily. Panama.

Concrete (Concrete Age) (Concrete Mill edition). Monthly. Detroit.

The Excavating Engineer. Monthly. Milwaukee.

General Electric Review. Monthly. Schenectady.

The Highway Magazine. Monthly. Middletown, Ohio.

Locomotive Engineers' Journal. Monthly. Cleveland.

Lubrication. Monthly. Texas Oil Co. New York.

Steam Shovel and Dredge. Monthly. Chicago.

The Valve World. Monthly. Chicago.

## New Schedule of Launch Service to Taboga.

Following the placing of the new gasoline launch *Taboga* in service, the schedule of launch sailings between Balboa and Taboga Island has been revised, effective February 1, and is now as follows:

From *Taboga*—Daily, launch *Taboga* leaves for Taboga at 9:45 a. m. and at 5:30 p. m.

From *Taboga*—Daily, launch *Taboga* leaves for Balboa at 10:45 a. m. and at 6:45 p. m. The 10:45 a. m. trip from Taboga may be delayed at times to 2 p. m., under orders given by the Chief Quartermaster, the manager of the Hotel Aspinwall, of the Captain of the Port of Balboa.

On Mondays and days following holidays the launch *Aspinwall* will be used to supplement the regular daily service, leaving the dredge landing for Taboga at 5 a. m., and returning from Taboga at 6:30 a. m.

## Exchange of Names between Launches.

The name of the launch *Taboga*, operated by the office of the Captain of the Port of Cristobal, has been changed to *Margarita*; and the new launch which arrived on the Isthmus on the steamship *Cristobal* on January 18, under the name of *Margarita*, has been renamed *Taboga*. The launches exchanged names because the new one is to be used in the service between Balboa and the Hotel Aspinwall, on Taboga Island, and it was considered appropriate to call it the *Taboga*. The earlier launch, originally called the *Taboga*, was purchased last July for this service but turned over to the Port Captain at Cristobal to meet a temporary shortage in launches; and the later launch was sent to the Port Captain at Balboa. The launches are sisters, each capable of carrying 50 passengers.

## Lunch Counter for Silver Employees at La Boca.

Effective February 1, the subsistence branch of the Supply Department has put a lunch counter for silver employees in operation at La Boca. This lunch counter will be attached to the La Boca silver mess, but with separate entrance, and will be operated on lines similar to those adopted for the lunch counters at the Balboa shops and the Administration Building. Commissary coupons will be accepted in payment for meals. Cash and mess meal tickets will not be honored.

## Obituary.

Orville Boyd, an enlisted man in the Tenth Infantry, died at Las Cascadas in the night of January 23 from a fall sustained that day at the camp. He was 35 years of age, and born in Ohio.

## SALE OF MOTOR VEHICLES.

Duty and Difference in Freight Are Collectible on Machines Sold by Employees to Nonemployees.

For the information of owners of automobiles or motorcycles, the following ruling of the Executive Secretary is published:

When application is made for the transfer of a motor vehicle from a Government employee to a nonemployee, or when an employee desires to take out a commercial license on an automobile within three months after the arrival of the machine on the Isthmus, the Chief of the Division of Civil Affairs shall require the owner to submit evidence of the payment of the customs duty thereon to the Panama Government, and the payment to the Panama Railroad Company of the difference between the employees' freight

rate and the full tariff rate on the shipment.

The payment of customs duty to Panama shall be insisted upon in the event of the transfer of the machine to a nonemployee or the issuance of a commercial license, regardless of the time at which this transfer or issuance takes place, but the payment to the railroad of the regular tariff rate will not be insisted upon unless the transfer to a nonemployee, or the obtaining of a commercial license, takes place within three months of the date of the arrival of the machine on the Isthmus.

Considerable time may be saved if owners of motor vehicles who apply for the transfer or change of a license under the conditions above outlined, will comply with the ruling before making application.

## RETAIL GROCERY PRICE LIST.

Of Commissary Branch of Supply Department, Effective February 1, 1916.

There is published below the retail grocery price list No. 4, effective February 1, 1916, governing the prices of articles sold in the grocery departments of the commissary stores, operated by the commissary branch of the Supply Department. Cigarettes, cigars, and tobacco are included in the list.

The prices given are those at which the items will be sold in the stores to Canal employees and other residents of the Isthmus who have commissary privileges.

In cases of sales to commercial vessels at the Canal ports, or to vessels of foreign navies, the prices will be increased by a surcharge of 10 per cent. For sales to yachts, the prices will be increased by 20 per cent. The list follows:

Article.	Size.	Unit.	Price.	Article.	Size.	Unit.	Price.
Alcohol, denatured, P. C.	Qt.	Bot.	\$0.25	Blackberries.	2s	Tin	\$0.14†
One cent refund on return of bottle.				Bloaters, Yarmouth.	1s	Tin	.11
Ammonia, household.	Pt.	Bot.	.13	Blueberries.	2s	Tin	.14
Ammonia, P. C.	Qt.	Bot.	.14	Blue, laundry.		Ball	.04
Anchovies in oil.	½s	Bot.	.45*	Blue, laundry.	1s	Pkg.	.17
Apples.	3s	Tin	.10	Borax, lump.		Lb.	.07
Apples.	Gal.	Tin	.30	Borax, powdered.	4-oz.	Pkg.	.04
Apricots.	2½s	Tin	.13	Borax, powdered.	8-oz.	Tin	.07
Asparagus.	2½s	Tin	.16†	Bread, brown.	Indiv.	Tin	.08*
Asparagus tips.	1s	Tin	.16†	Bread, brown.	3s	Tn	.12
Barley, Pearl.	2s	Tin	.12	Bread, hard.	8-oz.	Ctn.	.06
Barley, Robinson's.	1s	Tin	.19†	Bread, pilot.		Lb.	.03
Beans and tomato sauce, Heinz.	Indiv.	Tin	.05	Bread, pumpernickel.		Loaf	.10
Beans and tomato sauce, Heinz.	Small	Tin	.09	Bricks, bath.		Each	.04
Beans and tomato sauce, Heinz.	Med.	Tin	.13	Butter, apple, Heinz.	1s	Tin	.13
Beans and tomato sauce, Heinz.	Large	Tin	.18	Butter, apple, Heinz.	2s	Tin	.22
Beans, lima.	2s	Tin	.13*	Butter.	1s	Tin	.44*
Beans, lima, Cresca.	2s	Tin	.14	Butter, peach.	2s	Tin	.22*
Beans, lima, dried.	Lb.		.07	Butter, peanut, Heinz.	Small	Jar	.09
Beans, navy or pea.	Lb.		.08*	Butter, peanut, Heinz.	Med.	Jar	.13
Beans, red kidney, Heinz.	Small	Tin	.09	Butter, peanut, Heinz.	Large	Jar	.22
Beans, red kidney, dried.	Lb.		.11*	Candies:			
Beans, string.	2s	Tin	.09	Almonds, shelled.		Lb.	.47
Beans, string.	Gal.	Tin	.42*	Almonds, sugared.		Lb.	.23
Beef, chipped.	½s	Tin	.19*	Chocolate almonds, P. & T.	1s	Box	.12
Beef, corned.	1s	Tin	.20	Chocolates, assorted, Cadbury's.	½s	Tin	.22
Beef, corned.	2s	Tin	.38†	Chocolates, assorted, Lowney's.	Small	Pkg.	.04
Beef, roast.	1s	Tin	.20	Chocolates, assorted, Lowney's.	Large	Pkg.	.07
Beef, roast.	6s	Tin	1.45*	Chocolates, assorted, Lowney's.	½s	Box	.33*
Beefsteak and onions.	½s	Tin	.11	Chocolates, assorted, Lowney's.	1s	Box	.63*
Beefsteak and onions.	1s	Tin	.19†	Chocolates, assorted, Lowney's.	2s	Box	1.25
Beets.	2s	Tin	.11	Chocolates, assorted, P. & T.	½s	Box	.34
Beets.	3s	Tin	.15*	Chocolates, assorted, P. & T.	1s	Box	.67
Biscuits:				Chocolate bonbons, Lowney's.	½s	Box	.26
Arcadian, N. B. Co.	1s	Tin	.21	Chocolate bonbons, Lowney's.	1s	Box	.47
Baronet, N. B. Co.	1s	Tin	.21	Chocolate bonbons, P. & T.	½s	Box	.34
Bent's Wafers.	1s	Tin	.27	Chocolate bonbons, P. & T.	1s	Box	.67
Cameo, N. B. Co.	1s	Tin	.21	Chocolate caramels, P. & T.		Box	.08
Cheese Tidbits, N. B. Co.	1s	Tin	.21	Chocolate, Frys' caracas.	½s	Cake	.08
Chocolate, Cadbury's.	1s	Tin	.43	Chocolate cordial fruits, P. & T.	1s	Tin	.89
Chocolate Wafers, N. B. Co.	1s	Tin	.21	Chocolate fondant cherries, P. & T.	Small	Box	.28
Cream Wafers, N. B. Co.	12-oz.	Tin	.20	Chocolate fondant cherries, P. & T.	Med.	Box	.45
Educator Wafers.	1s	Tin	.16†	Chocolate fondant cherries, P. & T.	Large	Box	.61
Fig Newtons, N. B. Co.	1s	Tin	.21	Chocolate marshmallows.	½s	Pkg.	.06
Five o'clock Tea, N. B. Co.	1s	Tin	.21	Chocolate, milk, Kubes.	Small	Ctn.	.03
Nabisco Wafers, N. B. Co.	1s	Tin	.23	Chocolate, milk, Kubes.	Large	Ctn.	.06
Biscuits, puppy.	1-lb.	Ctn.	.17	Chocolate, milk, Lowney's.		Bar	.03
Royal Lunch, N. B. Co.	1s	Tin	.19	Chocolate, milk, P. & T.		Cake	.04
Saltines.	1s	Tin	.22	Chocolate, milk, plain, Peters'.	Small	Piece	.04
Soda, N. B. Co.	5s	Tin	.54	Chocolate, milk, with toasted almonds, Peters'.	Small	Piece	.04
Sunshine, assorted.	Small	Ctn.	.04	Chocolate, milk, with toasted almonds, Peters'.	Large	Piece	.07
Sunshine, assorted.	Large	Ctn.	.08	Chocolate, nougat, P. & T.		Box	.08
Vanilla Wafers, N. B. Co.	1s	Tin	.21	Chocolate, nut milk, Cadbury's.		Cake	.19
Water Thin, N. B. Co.	1s	Tin	.21	Chocolate, nut milk, Cadbury's.		Stick	.10
Wheat, shredded.	Pkg.		.11†				
Zwieback, N. B. Co.	1s	Tin	.21				

Article.	Size.	Unit.	Price.	Article.	Size.	Unit.	Price.
<b>Candies—Continued.</b>				Coffee, Mocha and Java, No. 3.....	1s	Ctn.	\$0.35
Chorolate, nut milk, Lowney's.....		Bar	\$0.03	Coffee and chicory, No. 4.....	1s	Ctn.	.13
Chocolate peppermint creams,				Coffee, Special, No. 5.....	1s	Ctn.	.14
P. & T.....	½s	Tin	.17	Coffee extract (see Extract).			
Chocolate, vanilla, Cadbury's.....	½s	Cake	.08	Corn, pop.....		Lb.	.06
Chocolate, wafer, milk.....		Ctn.	.06	Corn, sugar.....	2s	Tin	.10
Chu chu.....		Pkg.	.04	Corn, sugar.....	Gal.	Tin	.53*
Caramels, cream.....	Small	Ctn.	.03	Corn on cob.....	Small	Tin	.25
Caramels, cream.....	Large	Ctn.	.06	Corn on cob.....	Large	Tin	.53
Dates, plain.....	1s	Jar	.21	Crabs, deviled.....	1s	Tin	.22
Dates, stuffed.....	1s	Jar	.23	Crabs, deviled.....	2s	Tin	.32
Dates and figs, stuffed.....	1s	Jar	.31	Cubes, vegex.....	10s	Pkg.	.10
Figs, plain.....	1s	Jar	.27*	Dressing, salad, Durkee's.....	Small	Bot.	.22
Figs, stuffed.....	1s	Jar	.31	Dressing salad, Durkee's.....	Large	Bot.	.37
Ginger, crystalized, P. & T.....	½s	Tin	.12	Exterminator, ant P. C.....		Bot.	.10
Ginger, crystalized, P. & T.....	½s	Tin	.23	Exterminator, bedbug, Peterman's.....	Small	Tin	.09
Gum, Beechnut.....		Pkg.	.03	Exterminator, bedbug, Peterman's.....	Large	Tin	.16
Gum, Spearmint.....		Pkg.	.03	Extract beef.....	16-oz.	Jar	3.15
Marshmallows, P. & T.....	3½-oz.	Tin	.07	Extract beef.....	2-oz.	Jar	.34
Mints, cream, P. & T.....		Tin	.08	Extract beef.....	4-oz.	Jar	.67
Mints, lime, P. & T.....		Tin	.08	Extract, almond.....	4-oz.	Bot.	.21
Nuts, filberts, stick.....	4-oz.	Jar	.22	Extract, almond.....	8-oz.	Bot.	.40
Nuts, filberts, Cresca.....	8-oz.	Bot.	.36	Extract, coffee.....	8-oz.	Bot.	.15
Nuts, mixed.....		Lb.	.20	Extract, lemon.....	4-oz.	Bot.	.19
Nuts, walnuts.....		Lb.	.23	Extract, lemon.....	8-oz.	Bot.	.27
Nuts, walnut meat.....	Small	Jar	.26	Extract, orange.....	4-oz.	Bot.	.21
Peanut bars.....		Bar	.04	Extract, orange.....	8-oz.	Bot.	.40
Peanuts, roasted.....	½s	Jar	.10	Extract, pineapple.....	4-oz.	Bot.	.22
Peppermint, stick.....		Lb.	.26	Extract, pineapple.....	8-oz.	Bot.	.43
Stick candy.....		Jar	.07†	Extract, raspberry.....	4-oz.	Bot.	.15†
Sweets, Pascall's.....	1s	Jar	.26*	Extract, raspberry, P. C.....	8-oz.	Bot.	.25
Tidbits.....	½s	Jar	.10	Extract, strawberry.....	4-oz.	Bot.	.23
Toffee, McIntosh.....	4-oz.	Tin	.14	Extract, strawberry.....	8-oz.	Bot.	.40
<b>Candles.</b>				Extract, vanilla.....	4-oz.	Bot.	.20
Capers.....	6-oz.	Bot.	.16	Extract, vanilla.....	8-oz.	Bot.	.33
Caviar.....	1½-oz.	Tin	.15	Fig preserve (see Preserves).			
Caviar.....	3-oz.	Tin	.27	Fish, tuna.....	½s	Tin	.09*
Caviar.....	6-oz.	Tin	.51	Fish, tuna.....	½s	Tin	.13
Cereal cream.....	28-oz.	Pkg.	.17	Fish, tuna.....	1s	Tin	.17
Cherries, Maraschino.....	Small	Bot.	.17	Flakes, corn.....		Ctn.	.08
Cherries, Maraschino.....	Med.	Bot.	.28	Flavoring, kitchen bouquet.....	½-pt.	Bot.	.22
Cherries, Maraschino.....	Large	Bot.	.46	Flour.....		Lb.	.03
Cherries.....	2½s	Tin	.21	Flour.....	7s	Stk	.23†
Chicken, deviled.....	½s	Tin	.19	Flour.....	25s	Tin	1.15†
Chicken, roast.....	2s	Tin	.32	Flour, Buckwheat.....		Ctn.	.09
Chile con carne.....	1s	Tin	.08	Flour, graham.....		Lb.	.03½
Chocolate, Caracas, family.....	6-oz.	Cake	.12	Flour, rye.....		Lb.	.01
Chocolate, Caracas, extra.....	7-oz.	Cake	.32	Food, ant.....	Small	Pkg.	.08
Chocolate, unsweetened, Baker's.....	½s	Cake	.08	Food, Mellin's.....	Large	Jar	.48
Chow Chow, O. K.....	Pint	Bot.	.16	Food roach.....		Tin	.07
Chow Chow, Long Island.....	Pint	Bot.	.09	Formaldehyde.....		Bot.	.35†
Chow Chow, Heinz.....	18-oz.	Bot.	.26	Garlic.....		Lb.	.13*
Chow Chow.....	Qt.		.10	Gelatine.....	1-oz.	Pkg.	.09
Chow Chow.....	5-gal.	Keg	2.00*	Gelatine, C. & B.....	2-oz.	Pkg.	.14
Chowder, clam.....	1s	Tin	.08	Gherkins, sour, Heinz.....	18-oz.	Bot.	.26
Chowder, clam.....	3s	Tin	.17	Gherkins, spiced.....		Qt.	.11
Cinnamon, ground.....	2-oz.	Tin	.04	Gherkins, spiced.....	5-gal.	Keg	2.00
Cinnamon, stick.....		Lb.	.35†	Gherkins, sweet, Heinz.....	18-oz.	Bot.	.31
Clams, Little Neck.....	1s	Tin	.13	Ginger, ground.....	2-oz.	Tin	.04
Clams, Little Neck.....	2s	Tin	.24†	Gold dust.....	Small	Pkg.	.04
Cleanser, Old Dutch.....		Pkg.	.07	Gold dust.....	Large	Pkg.	.17
Cloves, ground.....	2-oz.	Tin	.05	Gooseberries.....	2s	Tin	.07
Cloves, whole.....	2-oz.	Tin	.05	Grapes.....	2½s	Tin	.14*
Cocoa, Caracas.....	½-kilo	Tin	.42	Grape nuts.....	2s	Tin	.16
Cocoa, Lowney's.....	½s	Tin	.16	Haddock, findon.....	1s	Tin	.18*
Cocoa, Omphale.....	½s	Tin	.21	Ham, deviled.....	½s	Tin	.13
Cocoa, Van Houten's.....	½s	Tin	.35	Ham, deviled.....	½s	Tin	.24
Cocoa, Van Houten's.....	½s	Tin	.65	Hash, corned beef.....	1s	Tin	.15
Cocoa (all other brands).....	½s	Tin	.13*	Hash, corned beef.....	2s	Tin	.29
Cocoa (all other brands).....	½s	Tin	.25*	Herring, boneless.....		Jar	.08
Cocoa (all other brands).....	5s	Tin	1.10*	Herring, fresh.....	1s	Tin	.07
Cocoa (all other brands).....	Bulk	Lb.	.23*	Herring, kippered.....	1s	Tin	.14
Coconut, desiccated.....	1s	Tin	.23	Herring in tomato sauce.....		Tin	.18*
Codfish, shredded.....	1s	Tin	.20*	Hominy, granulated.....	2s	Tin	.12*
Coffee, commissary, No. 1.....	1s	Ctn.	.20	Hominy, hulled corn.....	3s	Tin	.07
Coffee, Tivoli Special, No. 2, ground..	1s	Ctn.	.25	Hominy, prepared.....	2s	Tin	.14
Coffee, Tivoli, roasted, whole.....		Lb.	.25	Honey.....	Qt.	Tin	.33



Article.	Size.	Unit.	Price.	Article.	Size.	Unit.	Price.
Hors d'œuvres.....	½s	Bot.	\$0.47	Mustard, prepared.....	Gal.	Tub	\$0.47
Horseradish.....	8-oz.	Bot.	.22	Mutton roast.....	1s	Tin	.20†
Insecticide.....	½-pt.	Tin	.22	Nutmeg, whole.....	.....	Lb.	.21
Jams, American.....	1s	Jar	.13	Oats, rolled.....	2s	Tin	.12
Jams, American.....	1s	Tin	.10	Oatmeal, coarse.....	2s	Tin	.12
Jam, blackberry.....	2s	Tin	.17	Oil, cotton seed.....	5s	Tin	3.90
Jam, fruit, P. C.....	1-pt	Jar	.20	Oil, kerosene.....	5s	Tin	.69
Jams, Morton's.....	1s	Tin	.15*	Oil, olive, No Peer.....	Pt.	Tin	.41
Jams, Morton's.....	2s	Jar	.33*	Oil, olive, Alfonso.....	Qt.	Tin	.62
Jams, Morton's.....	7s	Tin	.72*	Oil, olive, Cresca.....	Qt.	Bot.	.92
Jams, strawberry.....	1s	Tin	.10	Oil, olive, Francesconi.....	½-gal.	Tin	1.60
Jelly, Heinz.....	9-oz.	Jar	.19	Oil, olive, Surfline.....	Pint	Bot.	.37†
Jelly (all other brands).....	10-oz.	Jar	.12	Oil, salad.....	½-gal.	Tin	.53*
Jelly (all other brands).....	18-oz.	Jar	.22	Oil, salad.....	Gal.	Tin	.95*
Jellycon.....	½s	Pkg.	.08	Oil, salad, P. C.....	24-oz.	Bot.	.23
Jelly, guava.....	6½-oz.	Jar	.12†	1 cent refunded on return of bottle.			
Jelly, guava.....	12-oz.	Jar	.19†	Okra.....	3s	Tin	.09
Jelly, guava, Cuban.....	1-lb.	Box	.19	Oleomargarine.....	5s	Tin	.52*
Juice, grape, Top Notch.....	Split	Bot.	.11	Olives, Manzanillo, plain.....	10-oz.	Bot.	.13*
Juice, grape, Welch's.....	Indiv.	Bot.	.07	Olives, Manzanillo, plain.....	6-oz.	Bot.	.08
Juice, grape, Welch's.....	Split	Bot.	.13	Olives, Queen.....	6-oz.	Bot.	.07†
Juice, grape, Welch's.....	Pint	Bot.	.19	Olives, Queen.....	10-oz.	Bot.	.11†
Juice, grape, R. S.....	Pint	Bot.	.14	Olives, Queen.....	18-oz.	Bot.	.19†
Juice, lime, cordial.....	Qt.	Bot.	.30	Olives, Queen.....	28-oz.	Bot.	.33†
Juice, lime.....	Pint	Bot.	.19*	Olives, Queen.....	Pint	Qt.	.25
Ketchup, tomato, Heinz.....	8-oz.	Bot.	.14	Olives, Queen.....	5-gal.	Keg.	4.30†
Ketchup, tomato, Cresca.....	8-oz.	Bot.	.12	Olives, Spanish.....	.....	Qt.	.30
Ketchup, tomato, Heinz.....	Pt.	Bot.	.21	Olives, Spanish.....	.....	Gal.	.98†
Ketchup, tomato, Blue Label.....	Pint	Bot.	.18	Olives, Spanish.....	2-gal.	Keg	1.95
Ketchup, tomato, Blue Label.....	Qt.	Bot.	.28	Olives, ripe.....	12-oz.	Bot.	.21
Ketchup, tomato, Snider's.....	Pint	Bot.	.18	Olives, ripe.....	26-oz.	Bot.	.43
Ketchup, tomato (all other brands).....	Qt.	Bot.	.24*	Olives, stuffed, Manzanillo.....	10-oz.	Bot.	.15*
Ketchup, tomato.....	Gal.	Jar	.94*	Onions, Pearl, Heinz.....	18-oz.	Bot.	.31
Kraut and pork.....	1s	Tin	.13	Onions, pickled.....	.....	Qt.	.25
Lard, compound.....	.....	Lb.	.11*	Onions, pickled.....	5-gal.	Keg	4.95*
Lard, pure.....	1s	Tin	.14	Oysters, cove.....	1s	Tin	.06
Lard, pure.....	2s	Tin	.26	Paper, ant, Magic Hoodoo.....	.....	Sheet	.11
Lard, Crisco.....	2s	Tin	.23*	Paper, fly, Tanglefoot.....	.....	Sheet	.01½
Lard, pure.....	3s	Tin	.39	Paper, parafine, sandwich.....	.....	Roll	.02
Lard, pure.....	5s	Tin	.66*	Paper, toilet.....	.....	Pkg.	.04
Leaves, bay.....	½s	Tin	.13	Paprika.....	2-oz.	Bot.	.07
Liver and bacon.....	1s	Tin	.22*	Paste, Anchovy.....	½s	Jar	.14
Loaf, chicken.....	½s	Tin	.20	Paste, rat and roach.....	.....	Tin	.16
Loaf, ham.....	½s	Tin	.12	Paste, sardine.....	4-oz.	Tin	.22
Loaf, veal.....	½s	Tin	.12	Peaches.....	2½s	Tin	.13
Loaf, veal.....	1s	Tin	.23	Peaches.....	Gal.	Tin	.42
Lobster.....	½s	Tin	.25*	Pearline.....	1s	Pkg.	.08
Lobster.....	1s	Tin	.42*	Pears.....	2½s	Tin	.19†
Macaroni.....	1s	Pkg.	.07†	Pears.....	Gal.	Tin	.64†
Mace, ground.....	2-oz.	Tin	.10	Peas, sifted.....	2s	Tin	.08
Mace, whole.....	2-oz.	Tin	.10	Peas, extra sifted.....	2s	Tin	.12
Macedoine of vegetables.....	1s	Tin	.17*	Peas.....	Gal.	Tin	.50†
Mackerel, soured.....	1s	Tin	.13	Peas, dried, green.....	.....	Lb.	.06
Mackerel, fancy, No. 1.....	.....	Lb.	.11	Peas, Petit Pois.....	1s	Tin	.13
Mackerel, shore, No. 2.....	.....	Lb.	.09	Peas, split.....	.....	Lb.	.07*
Malto brau (See Waters).....	.....	.....	.....	Pepper, black, ground.....	2-oz.	Tin	.05*
Marmalade, Dundee.....	.....	Jar	.14	Pepper, black, ground.....	1s	Tin	.25
Matches.....	.....	Pkg.	.05	Pepper, black, whole.....	½s	Tin	.05†
Meal, corn, white.....	4s	Tin	.19	Pepper, white, ground.....	2-oz.	Tin	.06
Meal, corn, yellow.....	4s	Tin	.20*	Pepper, white, ground.....	1s	Tin	.33
Meal, corn, yellow.....	.....	Lb.	.03	Pepper, Cayenne.....	2-oz.	Bot.	.07*
Meat, potted, ham flavor.....	½s	Tin	.04	Pettijohns' breakfast food.....	.....	Ctn.	.13
Milk, malted, Borden's.....	Small	Bot.	.29	Pi. kles, dill, Heinz.....	Med.	Tin	.12†
Milk, malted, Borden's.....	Large	Bot.	.49	Pi. kles, dill, Heinz.....	28-oz.	Bot.	.31
Milk, malted, Borden's.....	Hosp.	Bot.	2.15	Pickles, dill, sliced.....	.....	Qt.	.12
Milk, malted, Horlick's.....	Small	Bot.	.38	Pi. kles, dill, sliced.....	5-gal.	Keg	2.00†
Milk, malted, Horlick's.....	Large	Bot.	.75	Pickles, dill, whole.....	.....	Qt.	.10
Milk, malted, Horlick's.....	Hosp.	Bot.	3.00	Pickles, dill, whole.....	5-gal.	Keg	1.90
Milk, condensed, Nestle's.....	.....	Tin	.11*	Pi. kles, mixed, Morton's.....	Pint	Bot.	.16
Milk, evaporated, St. Charles'.....	.....	Tin	.08	Pickles, mixed, spiced.....	.....	Qt.	.10
Mince meat.....	2s	Tin	.19	Pi. kles, mixed, spiced.....	5-gal.	Keg	1.95*
Mint, powdered.....	2-oz.	Tin	.07*	Pickles, pin money.....	.....	Jar	.19
Molasses, Duff's.....	Qt.	Tin	.16	Pickles, sour, mixed, Heinz.....	18-oz.	Bot.	.26
Mushrooms, Mombadon.....	1s	Tin	.21	Pickles, sweet mixed, Heinz.....	18-oz.	Bot.	.31
Mustard, Coleman's.....	½s	Tin	.10	Pimientos, Morrones.....	½s	Tin	.07*
Mustard, Dusseldorf.....	8-oz.	Bot.	.07	Pimientos, Morrones.....	1s	Tin	.11
Mustard, Heinz, Polygon.....	Small	Bot.	.09	Pimenton, superior.....	5s	Tin	1.05

Article.	Size.	Unit.	Price.	Article.	Size.	Unit.	Price.
Pineapple.....	2s	Tin	\$0.11	Soap, family, P. C.....		Cake	\$0.03½
Plum pudding.....	Indiv.	Tin	.08	Soap, Fairy.....		Cake	.04
Plum pudding, Heinz.....	Indiv.	Tin	.13	Soap, Fels Naptha.....		Cake	.05
Plum pudding, Heinz.....	Med.	Tin	.26	Soap, Grandpa's.....		Cake	.05
Plum pudding, Heinz.....	Large	Tin	.48	Soap, Ivory.....		Cake	.05
Plum pudding.....	1s	Tin	.22*	Soap, laundry.....		Cake	.05
Plum pudding.....	2s	Tin	.43*	Soap, lava.....		Cake	.04
Plums, egg.....	2½s	Tin	.14†	Soap, Lenox.....		Cake	.03
Plums, greenage.....	2½s	Tin	.13†	Soap, Life Buoy.....	Small	Cake	.06
Polish, stove.....		Cake	.06	Soap, Life Buoy.....	Large	Cake	.07
Pork and beans, Van Camp's.....	1s	Tin	.08	Soap, salt water.....	3-lb.	Bar	.16
Pork and beans, Van Camp's.....	2s	Tin	.12	Soap, Sapolio.....		Cake	.06
Pork and beans, Van Camp's.....	3s	Tin	.16	Soap, Skat.....		Tin	.07
Postum cereal.....	Small	Tin	.12	Soap, white, naptha.....		Cake	.04
Postum cereal.....	Large	Tin	.20*	Soda, bicarbonate.....	4-oz.	Pkg.	.02
Postum, instant.....	4-oz.	Tin	.24	Soda, washing.....		Lb.	.01
Postum, instant.....	8-oz.	Tin	.39	Soup, Campbell's, assorted.....	1s	Tin	.09
Potash or lye.....	1s	Tin	.06*	Soup, cream of celery, Heinz.....		Tin	.16
Potatoes, sweet.....	3s	Tin	.11	Soup, tomato, Heinz.....	Small	Tin	.09
Powder, baking, Reliable.....	½s	Tin	.05*	Soup, tomato, Heinz.....	Med.	Tin	.13
Powder, baking, Reliable.....	1s	Tin	.08*	Soup, tomato, Heinz.....	Large	Tin	.22
Powder, baking, Reliable.....	5s	Tin	.36*	Soup, Van Camp's, assorted.....	1s	Tin	.08
Powder, baking, Royal.....	½s	Tin	.22	Spaghetti, Heinz.....	Med.	Tin	.13
Powder, baking, Royal.....	1s	Tin	.43	Spaghetti.....	Lb.	Pkg.	.07†
Powder, Chili.....	12-oz.	Tin	.57	Spice, pudding.....	2-oz.	Tin	.04
Powder, curry.....	4-oz.	Bot.	.09*	Spinach.....	3s	Tin	.09†
Powder, egg.....	½s	Tin	.14	Squash.....	3s	Tin	.10
Powder, ice cream, jello.....		Pkg.	.08	Starch, corn.....	1s	Tin	.07
Powder, insect, Buhach.....		Tin	.88*	Starch, laundry.....		Lb.	.03
Powder, jelly, Lady Baltimore.....	3-oz.	Pkg.	.08	Starch, Tiger.....	1s	Pkg.	.05
Preserve, fig.....		Jar	.12	Steak, hamburger.....	½s	Tin	.09
Preserves, fruit, Lippincott's.....	1s	Jar	.20	Steak, hamburger.....	1s	Tin	.17
Pudding, fig.....	Med.	Tin	.26	Strawberries.....	2s	Tin	.21†
Puffed rice.....		Ctn.	.13	Strawberries, Heinz.....	Med.	Jar	.22
Puffed wheat.....		Ctn.	.11	Succotash.....	2s	Tin	.10
Pumpkin.....	3s	Tin	.09*	Sugar, granulated.....	5s	Sack	.27†
Relish, India.....	8-oz.	Bot.	.13	Sugar, loaf.....	2s	Ctn.	.19†
Relish, India, Heinz.....	18-oz.	Bot.	.23	Sugar, powdered.....	2s	Tin	.19†
Relish, tomato, Heinz.....	9-oz.	Bot.	.22	Sugar, yellow.....		Lb.	.05
Rice, first grade.....		Lb.	.07*	Syrup, cane, P. C.....	Qt.	Bot.	.15
Rice, second grade.....		Lb.	.04	Syrup, cane, P. C.....	½-gal.	Jar.	.40
Roes, cod.....	1s	Tin	.19	10 cents refunded on return of jar.			
Roes, shad.....	7-oz.	Tin	.21	Syrup, Karo Corn.....	2s	Tin	.10
Sage, powdered.....	2-oz.	Tin	.07	Syrup, Karo Corn.....	10s	Tin	.45
Sago.....	2s	Tin	.20*	Syrup, maple.....	Qt.	Tin	.30*
Sal Hepatica.....		Bot.	.35	Syrup, Mapleline, P. C.....	Pint	Bot.	.20
Salmon, fresh, talls.....	1s	Tin	.15	Syrup, Mapleline, P. C.....	½-gal.	Jar	.60
Salmon, steak, flats.....	1s	Tin	.21	10 cents refunded on return of jar.			
Salt, celery.....	1½-oz.	Bot.	.07	Tamales, chicken.....	½s	Tin	.08
Salt, Cerebos.....	2s	Tin	.12*	Tamales, chicken.....	1s	Tin	.16
Salt, freezing.....		Lb.	.01	Tapioca.....	2s	Tin	.20*
Salt, fruit, Enos.....		Bot.	.49†	Tea, Ceylon.....	1s		.37
Salt, table.....	1s	Sack	.01½	Tea, E. B.....	½s		.08†
Salt, table.....	4s	Jar	.09	Tea, E. B.....	½s		.16†
Sani Flush.....	24-oz.	Tin	.18	Tea, E. B.....	1s		.29†
Sardines, Colomb.....	½s	Tin	.13	Tea, E. B.....	2s		.65†
Sardines in oil.....	½s	Tin	.10*	Tea, E. B.....	2s		.21
Sardines in tomato.....	½s	Tin	.12*	Tea, I. C. T.....	½s		.11*
Sauce, Chili, Heinz.....	13½-oz.	Bot.	.26	Tea, Omphale.....	½s		.21*
Sauce, Chili, other brands.....	16-oz.	Bot.	.21	Tea, Omphale.....	½s		.40
Sauce, cranberry, P. C.....	Pint	Jar	.32	Tea, Orange Pekoe.....	3-oz.		.19
Sauce, cranberry.....	2s	Tin	.13	Tea, Orange Pekoe.....	½s		.37
Sauce, oyster cocktail.....	16-oz.	Bot.	.24	Tea, Temple Garden.....	½s		.11
Sauce, red snapper.....	6-oz.	Bot.	.08	Tea, Temple Garden.....	½s		.21
Sauce, Tabasco.....		Bot.	.24†	Tea, Temple Garden.....	1s		.40
Sauce, Worcestershire.....	Small	Bot.	.24	Tea, Young Hyson.....	½s		.09
Sauce, Worcestershire.....	Large	Bot.	.43	Tea, Young Hyson.....	½s		.16†
Sauerkraut.....	3s	Tin	.08*	Tea, Young Hyson.....	2s		.63
Sauerkraut.....		Lb.	.06	All teas may be in either tins or packages.			
Sauerkraut.....	5-gal.	Keg	1.30†	Thyme, powdered.....	2-oz.	Tin	.04
Sausage, frankfurter, 4 to tin.....		Tin	.20	Tomatoes.....	2s	Tin	.09*
Sausage, Vienna.....	½s	Tin	.07	Tomatoes.....	3s	Tin	.12*
Sausage, Vienna.....	1s	Tin	.13†	Tomatoes.....	Gal.		.31*
Seed, bird.....		Pkg.	.13	Tongue, lamb.....	1s	Tin	.27†
Shimp.....	1s	Tin	.09	Tongue, lamb.....	1s	Tin	.24
Shimp.....	2s	Tin	.17	Triscuits.....	1s	Tin	.23
Soap, Bon Ami.....		Cake	.08				

Article.	Size.	Unit.	Price.	Article.	Size.	Unit.	Price.
Truffles, Brosses.....	2-oz.	Tin	\$0.33	<i>Cigarette Papers:</i>			
Vermicelli.....	Lb.	.07†		Riz la Croix.....	Book	\$0.02	
Vinegar, cider.....	Gal.	.16		Zig Zag.....	Book	.03	
Vinegar, malt, C. & B.....	Bot.	.15		<i>Cigars:</i>			
Vinegar, malt, Heinz.....	Qt.	.22		After Dinner, Mi Gusto.....	Each	.03	
Vinegar, malt, P. C. (Heinz, mfr.).....	Qt.	.13		After Supper, Jamaican.....	Each	.02	
Vinegar, spiced, salad, Heinz.....	Pt.	.22		Bouquets, Jamaican.....	Each	.05	
Vinegar, Tarragon.....	Bot.	.21		Brevas, Bella Vista.....	Each	.04	
<i>Waters:</i>				Brevas de Calidad, Havana.....	Each	.09	
Apenta.....	Qt.	Bot.	.19	Brevas, extra, Balboa.....	Each	.09	
Apollinaris.....	Split	Bot.	.09	Brevas Regalia, Havana.....	Each	.09	
Apollinaris.....	Pint	Bot.	.11	Brevas, Superfinas, La Corona, Havana..	Each	.09	
Champagne Cider, P. C.....	Bot.	.04		Cabinet extra, Jamaican.....	Each	.10	
Club soda, P. C.....	Bot.	.04		Cabinets, Mi Gusto.....	Each	.08	
Cream soda, P. C.....	Bot.	.04		Caprichos, Mi Gusto.....	Each	.06	
Deep Rock.....	Split	Bot.	.05	Cheroots, Jamaican.....	Each	.02	
Deep Rock.....	Pt.	Bot.	.08	Conchas, Bella Vista.....	Each	.03	
Deep Rock.....	Qt.	Bot.	.12	Conchas, Havana.....	Each	.07	
Ginger ale, Clicquot Club.....	Bot.	.09		Conchas, Bouquet, Balboa.....	Each	.07	
Ginger ale, Cochran's.....	Bot.	.09		Conchas, Especiales, Jamaican.....	Each	.04	
Ginger ale, P. C.....	Bot.	.04		Conchas, Finos, Mi Gusto.....	Each	.04	
Ginger ale, dry, Schweppe's.....	Split	Bot.	.07	Corona de la Corona, Havana.....	Each	.30	
Ginger ale, dry, Schweppe's.....	Pt.	Bot.	.10	Cremos, Mi Gusto.....	Each	.05	
Hunyadi.....	Qt.	Bot.	.29	Deleites, Havana.....	Each	.10	
Kola, Cochran's.....	Pt.	Bot.	.09	Diputados, Havana.....	Each	.10	
Lemon soda, P. C.....	Pt.	Bot.	.04	Duquesas, Balboa.....	Each	.10	
Limko, P. C.....	Bot.	.04		Flechas de Oro, Havana.....	Each	.12	
Malto Brau.....	Pt.	Bot.	.09	Flor de Colbeck, Jamaican.....	Each	.09	
Perrier.....	Qt.	Bot.	.14	Flor de Machado, Jamaican.....	Each	.09	
Poland.....	Qt.	Bot.	.16	Formidables, Havana.....	Each	.15	
Poland.....	2-qt.	Bot.	.30	Fumas, Bella Vista.....	Each	.02	
Red Raven.....	Split	Bot.	.09	Gentlemen, Jamaican.....	Each	.10	
Root Beer, P. C.....	Pt.	Bot.	.04	Hermanos, La Carolina, Havana..	Each	.10	
Sarsaparilla, P. C.....	Pt.	Bot.	.04	Ideales, Jamaican.....	Each	.08	
Schweppe's soda.....	Split	Bot.	.07	Imperiales, Jamaican.....	Each	.19	
Schweppe's soda.....	Pt.	Bot.	.10	Lirios, Mi Gusto.....	Each	.06	
Strawberry soda, P. C.....	Bot.	.04		Londres, Bella Vista.....	Each	.03	
Vichy.....	Qt.	Bot.	.18	Londres, Havana.....	Each	.09	
White Rock.....	Pt.	Bot.	.10	Londres, Imperial, Balboa.....	Each	.08	
1 cent refund allowed on return of P. C. aerated water bottles.				Londres, Jamaican.....	Each	.05	
Water, rose, P. C.....	½-pt.	Bot.	.13	Medio Brevas, Havana.....	Each	.07	
Wheat, cream of.....	2s	Tin	.19	Panatelas, Havana.....	Each	.10	
<i>Cigarettes:</i>				Panatelas, Jamaican.....	Each	.03	
Arroz, Especiales, Havana.....	16s	Pkg.	.05	Perfectos, La Carolina, Havana.....	Each	.16	
Bouton Rouge, Egyptian.....	50s	Tin	1.20	Puritanos Extra Finos, Havana..	Each	.10	
Capstan, mild and medium.....	50s	Tin	.23	Regalia Sport, Havana.....	Each	.12*	
Egyptian Luxury.....	10s	Box	.14	Reina Victoria, Bella Vista.....	Each	.03	
Fatima.....	20s	Pkg.	.14	Reina Victoria, Balboa.....	Each	.09	
Half and half.....	10s	Box	.28*	Reina Victoria, Jamaican.....	Each	.07*	
Home Run.....	20s	Pkg.	.05	Reinitas, Balboa.....	Each	.07	
King Bee.....	20s	Pkg.	.05	Salamones, Havana.....	Each	.22	
Kotton.....	20s	Pkg.	.04	<i>Tobacco, Chewing and Smoking:</i>			
La Rose Egyptian, Nos. 4 and 5.....	50s	Tin	.89*	Bull Durham.....	2-oz.	Bag	.10
Lily, Jamaican.....	16s	Box	.05	Capstan, mild, medium, and full.....	4-oz.	Tin	.23
Mecca.....	10s	Box	.04	Climax Plug.....	1-oz.	Tin	.05
Melachrimo, No. 4.....	50s	Tin	1.05	Cross Cut.....	1½-oz.	Pkg.	.07
Mogul, Turkish.....	10s	Box	.12	Dill's Best.....	4-oz.	Tin	.28
Murad.....	10s	Box	.14	Drummond Natural Leaf.....	5½-oz.	Plug	.28*
Needle Point.....	10s	Pkg.	.03	Drummond Natural Leaf.....	½	Plug	.10*
Pall Mall.....	10s	Box	.23	Encore.....	2-oz.	Pkg.	.06
Pectoral, Especiales, Havana.....	16s	Pkg.	.05	Latakia.....	4-oz.	Tin	.30
Philip Morris.....	10s	Box	.22*	Lucky Strike.....	4-oz.	Tin	.25
Piedmont.....	10s	Tin	.04	Old English Curve Cut.....	4-oz.	Tin	.26
Richmond Straight Cut.....	20s	Box	.15	Pride of Reidsville.....	2-oz.	Bag	.10
Rosebud, Jamaican.....	16s	Pkg.	.03	Prince Albert.....	2-oz.	Tin	.10
Three Castles.....	50s	Tin	.32	Red Band.....	2-oz.	Pkg.	.06
Turkish Trophies.....	10s	Box	.10	Star Plug.....	Lb.	.54	
				Velvet.....	2-oz.	Tin	.10†
				Wayback Plug.....	Plug	.04*	
				Zona Plug.....	2-oz.	Plug	.03

\* Denotes increase from last list

† Denotes reduction from last list.

## Cold Storage Price List.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is

published here also the retail cold storage price list, effective February 3 and subject to change each week. This list and the wholesale price list for fresh meats indicate

the costs of all cold storage goods. Copies of these lists may be obtained on application, by mail or from the boarding officers who visit incoming ships, immediately on arrival. These



lists are published in order that the shipping interests may be kept informed of the facilities afforded by the Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions will be effective February 3, 1916:

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.	
Beef suet, special, per lb.	Price, .03
Beef suet, native, per lb.	.03
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.05
Soup bone, special, per lb.	.02
Soup bone, native, per lb.	.02
Stew beef, special, per lb.	.11
Stew beef, native, per lb.	.08
Plate beef, native, per lb.	.08
Chuck roast (3 lbs. 10) special, per lb.	.12
Chuck roast (3 lbs. 10), native, per lb.	.08
Rib roast, 2d cut (3 1/2 lbs. up), special, per lb.	.16
Rib roast, 2d cut (3 1/2 lbs. up), native, per lb.	.09
Rib roast, 1st cut (3 1/2 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 1/2 lbs. up), native, per lb.	.11
Pot roast, special, per lb.	.20
Pot roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse roast, choice, per lb.	.31
Porterhouse roast, special, per lb.	.22
Porterhouse roast, cut, native, per lb.	.22
Chuck steak, special, per lb.	.13
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.12
Porterhouse steak (14 lbs. up), choice, per lb.	.23
Porterhouse steak (14 lbs. up), native, per lb.	.17
Porterhouse steak, short, special, per lb.	.28
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25

FRESH MEATS.	
Lamb, chops, per lb.	.25
Lamb, chops, shoulder, per lb.	.20
Lamb, legs, 5 to 8 lbs., pr lb.	.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.15
Lamb, stewing, per lb.	.12
Mutton chops, short cut, per lb.	.23
Mutton chops, short cut, per lb.	.19
Mutton, leg, 8 to 10 lbs., pr lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.09
Pork, hams, fresh (see footnote), per lb.	.25
Pork, loins, chops, or roast, per lb.	.19
Pork, shoulders, fresh (see footnote), per lb.	.20
Veal, chops, shoulder, per lb.	.27
Veal, cutlets, per lb.	.45
Veal, loin for roasting, per lb.	.40
Veal, shoulder for roasting not under 4 lbs., per lb.	.16

MISCELLANEOUS.	
Brains, calves', per lb.	.07
Calves' heads, ea.	.75
Kidneys, beef, per lb.	.10
Livers, beef, per lb.	.08
Livers, calves', per lb.	.24
Pates de foie gras, jar.	.67
Pigs' feet, fresh, per lb.	.05
Pigs' head, fresh, whole, ea.	.85
Pigs' heads, fresh, 1 head, ea.	.16
Sausage, bologna, per lb.	.19
Sausage, frankfurter, per lb.	.19
Sausage, herbawurst, per lb.	.14
Sausage, pork, whole, per lb.	.24
Sausage, pork, homemade, per lb.	.38
Sausage, Salami, per lb.	.38
Spare ribs, pork, per lb.	.13
Steak, hamburger, pks.	.17
Steak, hamburger, 20-pound container, per lb.	.14
Sweetbread, beef, per lb.	.21
Tails, ox, per lb.	.09
Tongue, beef, whole, white, per lb.	.20
Yeast, per lb.	.31
Yeast, cake.	.02

CURED AND PICKLED MEATS.	
Bacon, breakfast, whole piece, per lb.	.30
Bacon, breakfast, sliced, per lb.	.31
Bacon, sliced, jar.	.30
Bacon, sliced, tin.	.28
Bacon, squares, whole square, per lb.	.19
Bacon, strips, whole strip, per lb.	.20
Beef, corned—No. 1, per lb.	.15
Beef, corned—No. 2, per lb.	.15
Ham, minced "Bologna" style, per lb.	.50
Ham, minced "Bologna" style, pr lb.	.21
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	.17
1. Ham, sugar cured (whole) per lb.	.25
2. Ham, sugar cured (half) per lb.	.25

3. Ham, sugar cured (sliced) per lb.	.30
1. Ham, sugar cured, boiled (whole) per lb.	.33
2. Ham, sugar cured, boiled (half) per lb.	.36
3. Ham, sugar cured, boiled (sliced) per lb.	.41
Pigs feet, pickled, per lb.	.08
Pork, bellies, per lb.	.20
Pork, clear, per lb.	.11
Pork, standard mess, per lb.	.11
Spiced head meat, jar.	.30
Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs', per lb.	.22

POULTRY AND GAME.	
Broilers, corn fed, per lb.	.31
Broilers, milk fed, per lb.	.34
Capons, per lb.	.37
Chickens, fancy brooding, corn fed, per lb.	.27
Chickens, fancy brooding, milk fed, per lb.	.30
Ducklings, per lb.	.26
Fowls, light, per lb.	.22
Fowls, western, dry picked, per lb.	.22
Geese, per lb.	.18
Grouse, ea.	.60
Squabs, ea.	.45
Turkeys, per lb.	.32
DAIRY PRODUCTS.	
Butter, creamery special, per lb.	.46
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.45
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, ea.	.13
Cheese, Gouda, per lb.	.32
Cheese, parmesan, per lb.	.39
Cheese, Philadelphia, per lb.	.09
Cheese, Roquefort, per lb.	.09
Cheese, Swiss, cake.	.09
Cheese, Swiss, per lb.	.43
Cheese, young American, per lb.	.17
Cream, 30 per cent, 1 pt.	.17
Cream, 30 per cent, pt.	.29
Cream, 30 per cent, qt.	.52
Eggs, fresh, per doz.	.45
Eggs, fresh, 1 doz. only.	.21
Fer-mil-lac, bottle.	.25
Ice cream, (see footnote) qt.	.25
Ice cream, (see footnote) gal.	.25
Milk, Sheffield farms, qt.	.15
Oleomargarine, per lb. ctn.	.29

FISH.	
Bluefish, fresh, per lb.	.19
Flounder, dried, per lb.	.17
Haddock, smoked, per lb.	.11
Halibut, fresh, per lb.	.09
Herring, smoked, per lb.	.11
Shrimps, fresh, per qt.	.45
Salmon, fresh, per lb.	.11
Whitefish, smoked, per lb.	.34

VEGETABLES.	
Beans, string, per lb.	.10
Beets, per lb.	.02
Beets, new, per lb.	.07
Brussels sprouts, per qt.	.20
Cabbage, per lb.	.01
Carrots, per lb.	.04
Carrots, new, per lb.	.04
Calliflower, per lb.	.15
Celery, per head.	.02
Corn, green, per doz.	.12
Cucumbers, per lb.	.08
Egg plant, per lb.	.11
Leeks, per lb.	.04
Onions, per lb.	.04
Parsnips, per lb.	.03
Pears, green, per lb.	.12
Peas, per doz.	.04
Potatoes, sweet, American, per lb.	.04
Potatoes, sweet, tropical, per lb.	.02
Potatoes, white, per lb.	.04
Squash, per lb.	.03
Tomatoes, per lb.	.07
Turnips, per lb.	.01
Yams, Inca, per lb.	.03
FRUITS, ORIO.	
Apples, evaporated, per lb.	.12
Apricots, evaporated, per lb.	.15
Currants, cleaned, pkg.	.15
Figs, dried, 15-oz box.	.68
Peas, evaporated, per lb.	.18
Pears, evaporated, per lb.	.18
Peel, citron, per lb.	.20
Pineapple, per lb.	.16
Prunes, stewing, per lb.	.16
Raisins, seeded, pkg.	.11
Raisins, table cluster, per lb.	.15
Apples, fresh, per lb.	.04
Apples, fresh, select, per lb.	.07
Bananas, 8 hands and over, per bunch.	.20
Bananas, 5 and 7 hands, per bunch.	.20
Bananas, ea.	.00
Custard apples, ea.	.24
Grapes, per lb.	.24
Guapefruit, select, ea.	.03
Grapefruit, tropical, ea.	.03
Lemons, per doz.	.15
Oranges, select, ea.	.04
Oranges, tropical, doz.	.15
Pineapples, ea.	.12

Apples, fresh, per lb.	.04
Apples, fresh, select, per lb.	.07
Bananas, 8 hands and over, per bunch.	.20
Bananas, 5 and 7 hands, per bunch.	.20
Bananas, ea.	.00
Custard apples, ea.	.24
Grapes, per lb.	.24
Guapefruit, select, ea.	.03
Grapefruit, tropical, ea.	.03
Lemons, per doz.	.15
Oranges, select, ea.	.04
Oranges, tropical, doz.	.15
Pineapples, ea.	.12
* Indicates advance from preceding list.	
* Indicates five per cent allowed for return of bottle.	
* Indicates reduction from preceding list.	
* Sold only from commissaries, no orders taken for delivery.	
* Not less than 1/2 ham of 1/2 shoulder or fresh pork will be sold.	

Wholesale Prices of Fresh Meats.

The following is the wholesale price list No. 207, effective November 11, 1915, and in force until further notice. This list will govern, whether meat is sold from commissaries or from cold storage. The following prices will be increased by 10 per cent in cases of sales to commercial ships and foreign naval vessels, and by 20 per cent in cases of sales to yachts:

Wholesale Prices of Fresh Meats.	
1. Beef hind, No. 1.	Price, .15
2. Beef hinds, No. 2.	.15
3. Beef hinds, native.	.09
4. Beef fores, No. 2.	.12
5. Beef fores, native.	.08
6. Beef, whole round or leg, No. 1.	.14
7. Beef, whole round or leg, No. 2.	.11
8. Beef, whole round or leg, native.	.10
9. Beef ribs, No. 1.	.27
10. Beef ribs, No. 2.	.16
11. Beef ribs, native.	.10
12. Beef, short loins, No. 1.	.25
13. Beef, short loins, No. 2.	.20
14. Beef, short loins, native.	.15
15. Beef, rumps, No. 1.	.20
16. Beef, rumps, No. 2.	.17
17. Beef, rumps, native.	.12
18. Beef carcasses.	.14
19. Mutton carcasses.	.14
20. Pig carcasses.	.14
21. Pork, entire loins.	.16
22. Veal carcasses.	.14
23. Veal leg.	.31

\* Indicates increase from last list.  
 † Indicates decrease from last list.  
 ‡ Above prices do not include cost of special trimming required by United States Army or United States Navy.

The prices quoted in current retail cold storage list will govern for all other items, not included in above.

Additions to Stock.	
Biscuits, puppy, 1-lb. tin.	\$0.07
Butter, apple, 1-lb. tin.	.13
Collaps, minced, tin.	.32
Gherkins, sweet, Heinz, 5-gal keg.	6.90
Jelly, guava, Cuban, 1-lb box.	.19
Mustard, tin.	.15
Pickles, sweet mixed, Heinz-gal keg.	5.25
Pudding, fig, tin.	.26
Sauce, Worcester, quart bot.	.23
Tea, 10-lb. tin.	2.10
Blouses, middy, short sleeves, ea.	1.10
Blouses, middy, long sleeves, ea.	1.15
Buttons, pearl, large doz.	.16
Buttons, pearl, large doz.	.16
Caps, engineers', ea.	.48
Cloths, tea, H. S. emb., linen, 54", ea.	2.75
Cloths, tea, H. S. emb., linen, 36", ea.	1.45
Cloths, S. B. H. S. emb., linen, 20" x 7", ea.	1.70
Cloths, tea, H. S. emb., linen, 72", ea.	5.10
Cloths, tea, H. S. emb., linen, 18", ea.	.47
Cloths, tea, H. S. emb., linen, 36", ea.	.85
Cloths, tea, H. S. emb., linen, 30", ea.	1.25
Cloths, tea, H. S. emb., linen, 45", ea.	1.90
Cloths, S. B. H. S. emb., linen, 20" x 54", ea.	1.35
Elastic, cotton, white, 1/2", yd.	.09
Elastic, plain, white, 1/2", yd.	.09
Flannel, white, yd.	.09
Hooks, crochet, steel, ea.	.04
Hose, ladies', black, pr.	.20
Hose, ladies', white, pr.	.20
Hose, ladies', tan, pr.	.20
Knickerbockers, blue serge, pr.	1.20
Lace edging, French val., No. 1055, 1/2", yd.	.03
Lace edging, French val., No. 1057, 1/2", yd.	.04
Lace edging, French val., No. 5379, 1/2", yd.	.04
Lace edging, French val., No. 7796, 1/2", yd.	.05
Lace edging, French val., No. 8345, 1/2", yd.	.05
Lace edging, French val., No. 5562, 1/2", yd.	.05
Lace, insertion, yd.	.05
Lace, allover, black, yd.	.23
Lace, allover, black, yd.	.26
Lace, allover, black, yd.	.26
Netting, mosquito, yd.	.11
Rackets, tennis, Sloum, ea.	3.50
Ties, string, ladies', ea.	.16
Veal, veal, hind, blue Vatteau, ea.	.20
Boards, ironing, ea.	.28
Bottles, vacuum, Ivy Hot, qt., ea.	2.20
Bowls, sugar, 36", ea.	.07
Cloth, emery, sheet.	.02
Crayon, school, white, box.	.17
Cups, egg, C-4772, ea.	.01
Eggs, screw, brass, 1/2", ea.	.01
Eggs, screw, brass, 1/2", ea.	.03
Glasses, beer, large, ea.	.06
Hangers, pants, self-adjustable, ea.	.04
Haps and staples, hinged, 6", ea.	.09
Jugs, 12s, D-3550, Concord, ea.	.74
Jugs, 12s, D-3647, Concord, ea.	1.00
Paper, sand, 40 sheets, ea.	.06
Plates, tea, V 6923, 7", ea.	.38
Plates, B. & Y. 6923, 5", ea.	.21
Polish, Japalac, pint, tin.	.26
Rugs, congleum, 36" x 44", ea.	.64
Rugs, congleum, 36" x 72", ea.	.85
Rugs, congleum, 72" x 72", ea.	1.70
Rugs, congleum, 72" x 108", ea.	2.70
Screwdrivers, 6", ea.	.19
Screwdrivers, 10", ea.	.33

## OFFICIAL CIRCULARS.

## Fishing Below Gatun Spillway.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., January 22, 1916.  
To all concerned.—1. Effective at once, fishing in the Chagres River below the spillway at Gatun, will be permitted only with a rod and reel, and the use of hand lines, spears, nets, seines, dynamite, or any other means, is prohibited. Nets and seines may be used, however, for the purpose of obtaining bait.

2. All others than gold employees in Canal service will be required to have a pass, unless accompanied by a gold employee. The superintendent of Gatun Locks is authorized to issue passes.

Geo. W. Goethals,  
Governor.

## Rates for Service of Locomotive Cranes.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 1, 1916.  
CIRCULAR No. 692-2 (superseding circular No. 692-1 of January 1, 1914):

Effective January 1, 1916, the following rates will be charged for service of locomotive cranes of less than 75-ton capacity, including engineer, fireman, and the cost of coal, oil, waste, and repairs:

	Per hour.
Between departments and divisions of The Panama Canal and the Panama Railroad.....	\$2.00
For overtime service.....	2.75
For individuals and companies.....	2.50
For overtime service.....	3.50

Geo. W. Goethals,  
Governor.

## Time for Occupying Quarters on Original Assignment.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 26, 1916.  
CIRCULAR No. 627-12:

Paragraph 21 of circular No. 627-9 is hereby amended so that an employee who has accumulated leave in excess of 63 days and is granted this leave at the time he is tendered quarters on original assignment may, upon application at the time of submitting request for leave of absence, be allowed time for occupancy of his quarters equal to the amount of leave granted but in no case to exceed a total of 90 days from the date of tender of quarters.

Jay J. Morrow,  
Acting Governor.

## Surveyed Padlocks.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 28, 1916.  
To all concerned.—Effective at once, all surveyed padlocks will be returned to the Mechanical Division without charge. The Mechanical Division will issue a shop order covering repairs to these padlocks, and a manufacturing invoice will be made each month on the storehouse for the padlocks recovered at the value of new material. The difference between the cost of repairs and the amount of the invoice will be charged or credited on the Mechanical Division work report each month under the heading of "Accounting Department miscellaneous."

Jay J. Morrow,  
Acting Governor.

## Annual Reports Received.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., January 25, 1916.  
To all concerned.—The supply of Annual Reports has been received, and the usual distribution is being made through the post-offices.

Employees receiving reports through the post-offices will return the address slip to the postmaster, receipted on the back.

C. A. McIlvaine,  
Executive Secretary.

## Lidgerwood Cars for East Breakwater Service.

PANAMA RAILROAD COMPANY,  
OFFICE OF MASTER OF TRANSPORTATION.

BALBOA HEIGHTS, C. Z., January 25, 1916.  
CIRCULAR No. 276:

To all heads of departments.—In view of the fact that the work at Sosa Hill has again been restored to a 12-hour basis, it is requested that all departments do everything possible to release Lidgerwood cars marked "E. B.," so they may be returned to the transportation department for the East Breakwater service. During the time the Sosa Hill work was on the 8-hour basis,

which required less cars, a number of EB Lidgerwoods were given to the various departments with the understanding that if they were needed for the East Breakwater work they would be returned as early as possible. Please make every effort to return these cars to the transportation department, in order that there may be no delay to the steamshovels working at Sosa Hill.

S. W. HEALD,  
Master of Transportation.

Approved:  
C. H. Motsett,  
Superintendent.

## Accountable Official of Panama Railroad.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., January 27, 1916.  
CIRCULAR No. 114:

Effective this date, Mr. D. E. Wright is designated an accountable official of the Panama Railroad Company and as such will account for such nonexpendable property as may be required in the service of furnishing water to vessels in Colon.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
Jay J. Morrow,  
Acting Governor.

## Sailing of the "Cristobal."

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT.

BALBOA HEIGHTS, C. Z., January 29, 1916.  
To all concerned.—The steamship Cristobal will sail for New York from Pier No. 9, Cristobal, at 3 p. m., Saturday, February 5, 1916.

C. H. Motsett,  
Superintendent.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, February 9, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeur's licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeur's licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, February 11, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By order of the chairman of the board.

Geo. J. Vanderslice, Recorder.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., February 2, 1916.  
The following insufficiently addressed letters and packages have been received at the office of the Director of Posts and may be procured upon application of the addressees:

Dulsky, I. A.  
Masters, H. A.  
Everetts, Mrs. E. A.  
McCoy, John  
Pustulnick, Luis  
Reguer, Mrs. R.  
Schimmel, Mrs. Dora  
Stikeleather, Mrs. Graves  
Thomas, Cyril  
Torres, José V.  
Wells, Mrs. M. A.  
Wilyback, Oscar  
Wilson, Ralph B.  
Willett, Mrs. R.

\*Card. †Paper. ‡Photo.

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next six weeks are given in this table:  
FEBRUARY.

DATE.	Time and height of high and low water.			
Wed., Feb. 2.....	2:06	8:38	14:45	21:02
Thurs., Feb. 3.....	14.8	0.4	14.9	1.0
	3:05	9:31	15:40	21:54
	15.5	1.5	15.6	2.1
Fri., Feb. 4.....	3:58	10:19	16:31	22:41
	16.0	2.1	16.5	2.5
Sat., Feb. 5.....	4:50	11:03	17:19	23:27
	16.3	2.7	16.8	3.1
Sun., Feb. 6.....	5:39	11:47	18:05	24:10
	16.2	3.1	16.8	3.5
Mon., Feb. 7.....	0:11	6:25	12:29	18:47
	10.5	15.8	0.2	16.3
Tues., Feb. 8.....	0:55	7:08	13:14	19:29
	0.1	15.0	0.6	15.5
Wed., Feb. 9.....	1:41	7:53	14:00	20:10
	1.4	14.1	1.7	14.5
Thurs., Feb. 10.....	2:28	8:35	14:48	20:54
	2.1	13.0	3.0	13.4
Fri., Feb. 11.....	3:20	9:23	15:42	21:44
	3.1	12.0	4.0	12.4
Sat., Feb. 12.....	4:17	10:24	16:42	22:19
	3.9	11.2	4.8	11.7
Sun., Feb. 13.....	5:21	11:10	17:49	23:00
	4.3	10.9	5.9	10.9
Mon., Feb. 14.....	0:03	6:27	12:53	18:55
	11.5	4.5	11.0	5.0
Tues., Feb. 15.....	1:06	7:29	13:50	19:54
	1.4	13.4	11.6	3.4
Wed., Feb. 16.....	1:59	8:21	14:36	20:44
	12.3	3.1	12.3	3.6
Thurs., Feb. 17.....	2:42	9:05	15:16	21:27
	12.9	4.4	12.3	4.0
Fri., Feb. 18.....	3:23	9:44	15:53	22:04
	13.5	1.6	13.8	1.9
Sat., Feb. 19.....	4:02	10:19	16:27	22:40
	14.1	1.4	14.1	1.2
Sun., Feb. 20.....	4:39	10:53	17:02	23:15
	14.5	0.6	14.9	0.8
Mon., Feb. 21.....	5:15	11:27	17:36	23:50
	14.7	0.5	15.0	0.6
Tues., Feb. 22.....	5:52	12:01	18:10	24:20
	14.8	0.7	15.4	0.4
Wed., Feb. 23.....	0:27	6:30	12:38	18:45
	15.3	1.6	16.0	1.0
Thurs., Feb. 24.....	1:07	7:09	13:19	19:34
	1.0	14.3	1.5	15.3
Fri., Feb. 25.....	1:53	7:52	14:07	20:10
	1.5	13.8	2.5	14.5
Sat., Feb. 26.....	2:45	8:34	15:02	21:05
	2.1	13.1	3.0	13.7
Sun., Feb. 27.....	3:31	9:10	16:13	22:17
	2.7	12.6	3.5	13.2
Mon., Feb. 28.....	4:22	9:51	17:08	23:40
	2.8	12.5	3.6	13.2
Tues., Feb. 29.....	5:15	12:30	18:44	24:20
	2.5	13.0	3.1	12.8

## MARCH.

DATE.	Time and height of high and low water.			
Wed., March 1.....	0:56	7:24	13:36	19:51
	13.7	1.8	14.0	2.1
Thurs., March 2.....	1:42	8:25	14:32	20:48
	14.4	0.8	15.0	1.0
Fri., March 3.....	2:23	9:13	15:22	21:37
	15.2	0.1	15.9	0.0
Sat., March 4.....	3:03	9:58	16:09	22:22
	15.7	-0.7	16.5	-0.5
Sun., March 5.....	3:41	10:41	16:53	23:04
	16.0	-0.9	16.7	-0.9
Mon., March 6.....	4:16	11:21	17:34	23:43
	15.9	-0.7	16.5	-0.6
Tues., March 7.....	5:27	12:08	18:14	24:20
	15.6	0.0	16.0	0.0
Wed., March 8.....	0:37	6:37	12:41	18:54
	15.8	0.9	16.9	0.9
Thurs., March 9.....	1:03	7:16	13:22	19:31
	1.0	14.0	2.0	14.2
Fri., March 10.....	1:47	7:57	14:07	20:11
	2.1	13.0	2.9	13.4
Sat., March 11.....	2:36	8:39	15:00	20:57
	3.2	11.9	4.3	12.1
Sun., March 12.....	3:33	9:36	16:04	22:00
	4.3	11.1	5.1	11.4
Mon., March 13.....	4:40	10:55	17:14	23:20
	4.7	10.7	5.5	11.1
Tues., March 14.....	5:49	12:18	18:23	24:20
	4.7	10.9	5.2	10.9
Wed., March 15.....	0:31	6:54	13:19	19:25
	11.3	4.3	11.6	4.5

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., January 30, 1916.)

## THROUGH THE CANAL—ATLANTIC OCEAN TO GATUN LAKE.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Jan. 30.....	<i>Diana</i> (launch)....	American.....	Cristobal Hunt Club.....	Cristobal.....	Gatun Lake.....	Miscellaneous.....	3	3	.....
Jan. 30.....	<i>Kent, Jr.</i> (launch)....	American.....	Cristobal Hunt Club.....	Cristobal.....	Gatun Lake.....	Miscellaneous.....	3	3	.....

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Jan. 28.....	<i>Potomac</i> ( tug )....	American.....	United States Government.....	Balboa.....	Cristobal.....	Ballast.....	.....	Not measured.	.....
Jan. 28.....	<i>C-2, C-3, &amp; C-5</i> (submarines)	American.....	United States Government.....	Balboa.....	Cristobal.....	Ballast.....	.....	Not measured.	.....

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
Jan. 27.....	<i>Sylvanian</i> .....	Leyland Line.....	Liverpool.
Jan. 27.....	<i>Counselor</i> .....	Harrison Line.....	Liverpool.
Jan. 29.....	<i>Puerto Rico</i> .....	French Line.....	Bordeaux.
Jan. 29.....	<i>Camilo</i> .....	Elders & Fyffes.....	Port Limon.
Jan. 30.....	<i>Fred'k Luckenbach</i> .....	Luckenbach Line.....	New York.

## \*DEPARTURES.

Date	Vessel	Line	For
Jan. 28.....	<i>Counselor</i> .....	Harrison Line.....	Galveston.
Jan. 29.....	<i>Camilo</i> .....	Elders & Fyffes.....	Bristol & Jamaica.
Jan. 29.....	<i>Sylvanian</i> .....	Leyland Line.....	New Orleans.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From
.....	<i>Fred'k Luckenbach</i> .....	Luckenbach Line.....	New York.
.....	<i>Puerto Rico</i> .....	French Line.....	Bordeaux, way ports.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	For
.....	<i>Fred'k Luckenbach</i> .....	Luckenbach Line.....	New York.
.....	<i>Puerto Rico</i> .....	French Line.....	Bordeaux, way ports.

## PORT OF BALBOA.

## \*ARRIVALS.

Date	Vessel	Line	From
Jan. 23.....	<i>Mars</i> (collier).....	U. S. Navy.....	San Francisco.
Jan. 24.....	<i>Musicien</i> .....	Charente Steamship Co.....	San Francisco.
Jan. 25.....	<i>Sonia Cecilia</i> .....	N. Y. & Pacific S. S. Co.....	South Pacific ports.
Jan. 25.....	<i>Karma</i> .....	Union Steamship Co.....	Valparaiso.
Jan. 26.....	<i>Limari</i> .....	South American S. S. Co.....	Valparaiso.
Jan. 27.....	<i>Monloro</i> .....	Peruvian Line.....	Valparaiso.
Jan. 27.....	<i>Thode Faglund</i> .....	W. Wilhelmson.....	Tocopilla.
Jan. 27.....	<i>Valetta</i> .....	Valetta Steamship Co.....	Tacoma.
Jan. 29.....	<i>Florence Luckenbach</i> .....	Luckenbach Line.....	New York.
Jan. 29.....	<i>Chumpon</i> .....	East Asiatic Company.....	Antofagasta.
Jan. 29.....	<i>Edith</i> .....	Luckenbach Line.....	San Francisco.
Jan. 30.....	<i>Newport</i> .....	Pacific Mail S. S. Co.....	San Francisco.

## EXPECTED ARRIVALS.

Date	Vessel	Line	From
Feb. 1.....	<i>Bushnell</i> .....	U. S. Navy.....	Seattle.
Feb. 1.....	<i>Inveric</i> .....	Inveric S. S. Co., Ltd.....	Seattle.
Feb. 5.....	<i>Paraiso</i> .....	Long Beach S. S. Co.....	Los Angeles.

## \*DEPARTURES.

Date	Vessel	Line	For
Jan. 23.....	<i>Erroll</i> .....	J. Warrack & Co.....	Colonel.
Jan. 25.....	<i>San Jose</i> .....	Pacific Mail S. S. Co.....	San Francisco.
Jan. 24.....	<i>Arna</i> .....	Arna Steamship Co.....	Avonmouth.
Jan. 25.....	<i>Logan</i> (transport).....	U. S. Army.....	Manila.
Jan. 25.....	<i>Karma</i> .....	Union Steamship Co.....	United Kingdom.
Jan. 25.....	<i>Heath Hall</i> .....	U. S. Steel Products Co.....	New York.
Jan. 25.....	<i>Coecker</i> .....	C. H. Higgins Co.....	San Francisco.
Jan. 26.....	<i>Musicien</i> .....	Charente Steamship Co.....	United Kingdom.
Jan. 28.....	<i>Thode Faglund</i> .....	W. Wilhelmson.....	San Francisco.
Jan. 29.....	<i>Quilene</i> .....	Pacific Steam Nav. Co.....	Valparaiso.
Jan. 29.....	<i>Florence Luckenbach</i> .....	Luckenbach Line.....	San Francisco.
Jan. 29.....	<i>Valetta</i> .....	Valetta Steamship Co.....	Ipswich.
Jan. 30.....	<i>Urubamba</i> .....	Peruvian Line.....	Callao.

## EXPECTED DEPARTURES.

Date	Vessel	Line	For
.....	<i>Erroll</i> .....	J. Warrack & Co.....	Colonel.
.....	<i>San Jose</i> .....	Pacific Mail S. S. Co.....	San Francisco.
.....	<i>Arna</i> .....	Arna Steamship Co.....	Avonmouth.
.....	<i>Logan</i> (transport).....	U. S. Army.....	Manila.
.....	<i>Karma</i> .....	Union Steamship Co.....	United Kingdom.
.....	<i>Heath Hall</i> .....	U. S. Steel Products Co.....	New York.
.....	<i>Coecker</i> .....	C. H. Higgins Co.....	San Francisco.
.....	<i>Musicien</i> .....	Charente Steamship Co.....	United Kingdom.
.....	<i>Thode Faglund</i> .....	W. Wilhelmson.....	San Francisco.
.....	<i>Quilene</i> .....	Pacific Steam Nav. Co.....	Valparaiso.
.....	<i>Florence Luckenbach</i> .....	Luckenbach Line.....	San Francisco.
.....	<i>Valetta</i> .....	Valetta Steamship Co.....	Ipswich.
.....	<i>Urubamba</i> .....	Peruvian Line.....	Callao.

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Proposals for Purchase of a Lot of Old Series Metal Checks.

Sealed bids will be received in the office of the Chief Quartermaster, Balboa Heights, Canal Zone, until 10 a. m., February 10, 1916, and then opened in public, for the purchase of a miscellaneous lot of approximately 50,000 old series metal checks. These checks may be inspected on any working day during office hours at the obsolete store, Mount Hope. Bids will be considered for all or any part of the lot. The Panama Canal reserves the right to accept any or reject any or all bids. Certified check, post-office money order, or currency in amount of 20 per cent of amount bid must accompany proposal. Bids must be plainly marked "Proposal for purchase of old metal checks—to be opened February 10, 1916," and addressed to the Chief Quartermaster, Balboa Heights, C. Z.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, February 7 and March 6, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the two sailings mentioned.

†NOTE—When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Sails	Arrives
Almirante.....	U. F. C. Jao.	26.....Feb. 2	.....Feb. 2
Panama.....	P. R. R. Jan.	27.....Feb. 2	.....Feb. 2
Pastores.....	U. F. C. Jan.	29.....Feb. 6	.....Feb. 6
Zacapa.....	U. F. C. Feb.	28.....Feb. 9	.....Feb. 9
Alcázar.....	P. R. R. Feb.	3.....Feb. 9	.....Feb. 9
Calamares.....	U. F. C. Feb.	5.....Feb. 13	.....Feb. 13
Carrillo.....	U. F. C. Feb.	9.....Feb. 16	.....Feb. 16
Carrillo.....	U. F. C. Feb.	9.....Feb. 16	.....Feb. 16
Colon.....	P. R. R. Feb.	10.....Feb. 16	.....Feb. 16
Tenadores.....	U. F. C. Feb.	12.....Feb. 20	.....Feb. 20
Santa Marta.....	U. F. C. Feb.	16.....Feb. 23	.....Feb. 23
Advance.....	P. R. R. Feb.	17.....Feb. 24	.....Feb. 24
Metapan.....	U. F. C. Feb.	19.....Feb. 28	.....Feb. 28
Almirante.....	U. F. C. Feb.	23.....Mar. 1	.....Mar. 1
Panama.....	P. R. R. Feb.	24.....Mar. 1	.....Mar. 1

## CRISTOBAL-COLON TO NEW YORK.

Advance.....	P. R. R. Feb.	3.....Feb. 10	.....Feb. 10
Santa Marta.....	U. F. C. Feb.	3.....Feb. 10	.....Feb. 10
Metapan.....	U. F. C. Feb.	7.....Feb. 15	.....Feb. 15
Panama.....	P. R. R. Feb.	10.....Feb. 16	.....Feb. 16
Almirante.....	U. F. C. Feb.	10.....Feb. 17	.....Feb. 17
Pastores.....	U. F. C. Feb.	14.....Feb. 21	.....Feb. 21

Allianca.....	P. R. R. Feb.	17.....Feb. 23	.....Feb. 23
Zacapa.....	U. F. C. Feb.	17.....Feb. 24	.....Feb. 24
Calamares.....	U. F. C. Feb.	21.....Feb. 28	.....Feb. 28
Colon.....	P. R. R. Feb.	24.....Mar. 1	.....Mar. 1
Carrillo.....	U. F. C. Feb.	24.....Mar. 2	.....Mar. 2
Tenadores.....	U. F. C. Feb.	28.....Mar. 6	.....Mar. 6
Advance.....	P. R. R. Mar.	2.....Mar. 9	.....Mar. 9
Santa Marta.....	U. F. C. Mar.	2.....Mar. 9	.....Mar. 9
Metapan.....	U. F. C. Mar.	6.....Mar. 14	.....Mar. 14

## NEW ORLEANS TO CRISTOBAL-COLON.

Abangarez.....	U. F. C. Jan.	29.....Feb. 5	.....Feb. 5
Cartago.....	U. F. C. Feb.	2.....Feb. 7	.....Feb. 7
Atenas.....	U. F. C. Feb.	5.....Feb. 12	.....Feb. 12
Heredia.....	U. F. C. Feb.	9.....Feb. 14	.....Feb. 14
Turrialba.....	U. F. C. Feb.	12.....Feb. 19	.....Feb. 19
Coppename.....	U. F. C. Feb.	16.....Feb. 16	.....Feb. 16
Abangarez.....	U. F. C. Feb.	19.....Feb. 26	.....Feb. 26
Cartago.....	U. F. C. Feb.	23.....Feb. 28	.....Feb. 28
Atenas.....	U. F. C. Feb.	26.....Mar. 4	.....Mar. 4
Heredia.....	U. F. C. Mar.	1.....Mar. 6	.....Mar. 6
Turrialba.....	U. F. C. Mar.	4.....Mar. 11	.....Mar. 11
Coppename.....	U. F. C. Mar.	8.....Mar. 13	.....Mar. 13
Abangarez.....	U. F. C. Mar.	11.....Mar. 17	.....Mar. 17
Cartago.....	U. F. C. Mar.	15.....Mar. 20	.....Mar. 20

## CRISTOBAL-COLON TO NEW ORLEANS.

Coppename.....	U. F. C. Feb.	6.....Feb. 11	.....Feb. 11
Abangarez.....	U. F. C. Feb.	6.....Feb. 13	.....Feb. 13
Cartago.....	U. F. C. Feb.	13.....Feb. 18	.....Feb. 18
Atenas.....	U. F. C. Feb.	13.....Feb. 20	.....Feb. 20
Heredia.....	U. F. C. Feb.	20.....Feb. 25	.....Feb. 25
Turrialba.....	U. F. C. Feb.	20.....Feb. 27	.....Feb. 27
Coppename.....	U. F. C. Feb.	27.....Mar. 3	.....Mar. 3
Abangarez.....	U. F. C. Feb.	27.....Mar. 5	.....Mar. 5
Cartago.....	U. F. C. Mar.	5.....Mar. 10	.....Mar. 10
Atenas.....	U. F. C. Mar.	5.....Mar. 12	.....Mar. 12
Coppename.....	U. F. C. Mar.	12.....Mar. 17	.....Mar. 17
Abangarez.....	U. F. C. Mar.	12.....Mar. 19	.....Mar. 19





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, on this basis:

Subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Vessels Calling at Canal Terminals.

The steamships *Cape Corso* and *Inveric* arrived at Balboa from north Pacific ports during the past week, coming on the chance of making the transit of the Canal or to take coal and supplies at Balboa in case the passage could not be made. The vessels which sail from the north Pacific ports for Europe or the Atlantic coast of the United States by way of the Strait of Magellan find Balboa a cheap and fairly convenient place for taking coal and supplies. The direct voyage from San Francisco to Mejillones, for instance, is increased by approximately 767 miles by a call at Balboa.

The *Cape Corso* arrived in the afternoon of February 2 and sailed on February 5. She is on the way from San Francisco to Garston, England, with a cargo of 3,280,091 feet of lumber, and the *Inveric*, which arrived in the morning of February 7 and is still in port, is carrying 6,900 tons of lumber from Eureka to Avonmouth.

The steamship *Windber* arrived at Cristobal from the United States on February 5, on the chance of going through the Canal, and is still waiting in the harbor.

#### Excavation from the Cut during the Past Week.

Excavation at the bases of the Culebra slides, north of Gold and Contractor's Hills, during the week ending at midnight of Monday, February 7, amounted to 232,040 cubic yards. Other excavation in the Cut during the same period amounted to 2,460 cubic yards, making a total of 234,500 cubic yards of primary excavation. In addition, 19,280

cubic yards were rehandled by the pipeline suction dredge *No. 86*, and 12,946 cubic yards by the seagoing suction dredge *Culebra*, making a total of rehandled spoil of 32,226 cubic yards.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
<i>Cascados</i> .....	15-yard dipper.....	61,125
<i>Gamboa</i> .....	15-yard dipper.....	65,653
<i>Paraiso</i> .....	15-yard dipper.....	53,715
<i>Corozal</i> .....	Ladder.....	54,005
<i>Culebra</i> .....	Seagoing suction.....	12,946
<i>No. 86</i> .....	Pipeline suction.....	19,280

The average aggregate output of the dredges in the Cut during the 15 weeks preceding that ending at midnight of February 7 was 257,161 cubic yards, the total amount of primary excavation during that period having been 3,857,420 cubic yards.

#### Excavation in the Cut in January.

The material excavated from the bases of the Culebra slides, which have caused the suspension of traffic through the Canal, amounted to 972,800 cubic yards in the month of January. This is 35,031 cubic yards less than the 1,007,831 cubic yards excavated from these slides in the month of December. The decreased yardage was caused principally by a greater proportion of hard rock and by the 15-yard dredges *Gamboa* and *Paraiso* each being out of service a week for repairs and overhauling. They were absent at different periods and the 5-yard dredge *Cardenas* was used in the place of the absent dredge, but its excavation was about one-fourth as fast as the work of the new dredges.

The work of primary excavation by the several dredges in the Cut was as follows:

Culebra slides—		
Dredge.	Type.	Yardage.
<i>Cascados</i> .....	15-yard dipper.....	292,675
<i>Gamboa</i> .....	15-yard dipper.....	232,855
<i>Paraiso</i> .....	15-yard dipper.....	195,515
<i>Cardenas</i> .....	5-yard dipper.....	37,545
<i>Corozal</i> .....	Ladder.....	171,870
<i>Marmot</i> .....	Belgian ladder.....	42,340
Total, Culebra slides.....		972,800

Cucaracha slide—		
<i>Marmot</i> .....	Belgian ladder.....	11,965
Miscellaneous, Cut—		
<i>Culebra</i> .....	Seagoing suction.....	88,273

Total removed.....1,073,038  
In addition, 65,557 cubic yards were rehandled in disposal, as follows: *No. 86*, 57,290 cubic yards; *Marmot*, 3,770 cubic yards; *Culebra*, 4,022 cubic yards; *Cardenas*, 475 cubic yards.

#### Dismantling Old Steam Electric Station at Gatun.

Work is in progress for the removal of the remaining equipment from the old steam-driven electric power plant on the west side of Gatun Locks. Following the beginning of operation of the hydroelectric station at the Gatun Spillway, the steam plant was closed. In January, 1914, one of its three generating units had been transferred to the twin steam plant at Miraflores, and now all

the remaining equipment is to be installed there. The Miraflores plant is operated in connection with the hydroelectric plant and the high voltage transmission system, and kept in readiness for immediate service in case of breakdown of the hydroelectric plant or intervening transmission line.

The equipment now to be transferred from the old Gatun steam station includes two 1,500-kilowatt turbogenerators, with the four 400-horsepower boilers supplying them, and all the auxiliary equipment, consisting of hot well pumps, condensers, vacuum pumps, switchboard apparatus, etc.

It has not been determined what disposition will be made of the building at the Gatun station. This is a frame and corrugated iron structure, 150 feet by 77 feet in plan, with a height of 48 feet from the floor to the peaks of the gables.

#### Opening of National Exposition of Panama.

The Panama National Exposition was opened formally on Sunday, February 6. The President of Panama delivered the principal address, in the presence of officials of the Republic, representatives of exhibiting governments, Canal officials, and others who were invited to be present.

#### Earthquake Shocks.

A heavy seismic disturbance of comparatively close origin began at 10:55:39 a. m., Tuesday, February 8, and ended at 11:09:05 a. m. The pen on the east-west 100-kilogram instrument in the observatory at Balboa Heights was thrown off, leaving the sheet to the east but recording a movement of 103 millimeters to the west, before it was thrown off. The damper on the north-south instrument was thrown off and interfered with the true record, but previous to the interference a movement of 106 millimeters to the north was recorded. Good records were obtained by both the smaller instruments, the north-south showing 10 millimeters amplitude and the east-west a movement of 38 millimeters to the east and 25 millimeters to the west. The distance of the epicenter of the disturbance was about 130 miles, and the indicated direction was westerly.

This shock was similar to the heavy shocks of October, 1913, and May, 1914, and had an intensity of V on the Rossi-Forel scale. In order to make true comparisons it would be necessary to have complete records and the records of all the heavy quakes are broken, owing to the pens being thrown off the drums. Using this fact as a basis for comparison, the disturbance of February 8 was not quite as severe as some of the heavier shocks on record, when the pens were thrown off of all four instruments.

A slight after-shock occurred between 12:57:50 and 1:03:28 p. m., having a maximum amplitude of six millimeters. The distance and direction of the epicenter were the same as for the heavy shock.

## LABOR FORCE AND QUARTERS.

**Smallest Force on the Isthmus in December since 1906.**—Comparisons with Previous Years.

The force report for the second half-month of December, 1915, made out as of December 23, shows the total force employed by The Panama Canal, the Panama Railroad Company, and contractors with the Canal or railroad, on the Isthmus to have been 21,915. This is the smallest force which has been engaged on the Canal since 1906; it is the lowest mark which has been reached in the diminution of the force since the height of construction, as shown in the accompanying graph of maximum forces employed in the years of American Canal construction.

When the United States assumed the occupation of the Canal Zone, on May 4, 1904, the Isthmian Canal Commission took over the employment of "some 600 or 700 men, employed principally in continuing in a feeble way the work of excavation on the Culebra or summit divide; but a considerable number of men were employed as caretakers of machines, tools, apparatus, stores, and supplies of all kinds," according to the first annual report of the Governor of the Canal Zone, dated November 1, 1904. By the end of that year the force had grown to approximately 5,500; a year later, November, 1905, it was approximately 19,500. In November of 1906 the men employed on the Isthmus were reported as "approximately 21,000." In 1907 the number reached 31,967, in October. Considering these figures, and those available for the succeeding years, the high marks of employment in the years of construction may be summarized as follows:

Year.	Month.	Number
1904	November.....	5,500
1905	November.....	19,500
1906	November.....	21,000
1907	October.....	31,967
1908	April.....	33,170
1909	October.....	35,405
1910	March.....	38,676
1911	December.....	37,826
1912	November.....	40,159
1913	March.....	44,733
1914	January.....	33,619
1915	July.....	26,905

The decline of the force from its peak, attained in March, 1913, is shown in this tabulation of the forces reported for the second half-month of each month since that time:

DATE.	I. C. C. or Panama Canal.			P. R. R. total.	Comsy. total.	Contractors.	Grand total.
	Silver.	Gold.	Total.				
March 26, 1913.....	28,080	4,487	32,567	5,248	1,274	5,644	44,733
April 30, 1913.....	28,467	4,358	32,825	5,020	1,299	5,048	44,192
May 28, 1913.....	27,918	4,337	32,255	4,894	1,319	4,565	43,033
June 25, 1913.....	28,931	4,282	33,213	3,757	1,331	3,961	42,262
July 30, 1913.....	28,394	4,173	32,567	3,897	1,338	3,276	42,484
August 27, 1913.....	30,918	4,087	35,005	3,538	1,419	2,923	42,885
September 24, 1913.....	28,480	3,786	32,266	3,810	1,424	2,282	37,782
October 29, 1913.....	26,032	3,685	29,717	3,657	1,404	1,648	36,426
November 26, 1913.....	26,367	3,695	30,062	3,723	1,406	1,123	34,967
December 23, 1913.....	23,029	3,414	26,953	3,723	1,472	415	32,563
January 28, 1914.....	23,824	3,944	27,768	4,079	1,423	349	33,619
February 25, 1914.....	22,890	3,908	26,817	3,412	1,307	265	31,801
March 25, 1914.....	22,536	3,850	26,386	3,478	1,297	34	31,201
April 29, 1914.....	22,869	4,005	27,391	3,662	1,277	84	31,694
May 27, 1914.....	22,349	3,901	26,250	4,771	1,29	31,050	
June 24, 1914.....	21,499	3,790	25,289	4,343	1,129	41	29,673
July 22, 1914.....	22,332	3,722	27,054	3,276	1,188	79	32,374
August 26, 1914.....	20,753	4,009	24,762	4,059	1,199	62	28,883
September 23, 1914.....	20,421	3,806	24,227	3,914	1,155	58	28,199
October 28, 1914.....	19,751	3,694	23,445	3,274	1,195	40	26,759
November 25, 1914.....	19,587	3,566	23,153	1,164	1,076	57	26,271
December 23, 1914.....	18,176	3,433	21,509	3,662	1,277	84	25,255
January 20, 1915.....	17,592	3,334	20,926	3,638	1,190	289	24,853
February 24, 1915.....	17,023	3,088	20,111	2,978	1,193	356	23,445
March 24, 1915.....	17,110	3,034	20,144	3,276	1,244	360	23,774
April 21, 1915.....	18,352	3,123	21,475	2,936	1,218	374	25,415
May 26, 1915.....	17,294	3,271	21,565	4,590	1,303	279	26,434
June 23, 1915.....	18,465	3,212	21,677	4,845	1,338	375	26,897
July 21, 1915.....	17,722	3,208	21,190	5,349	1,353	366	26,905
August 25, 1915.....	17,631	3,172	20,803	4,261	1,402	360	26,124
September 23, 1915.....	17,342	3,159	20,501	2,921	1,350	339	23,761
October 27, 1915.....	16,538	3,270	19,808	3,916	1,470	343	24,067
November 24, 1915.....	15,905	3,303	19,208	5,151	1,440	343	24,702
December 23, 1915.....	15,697	3,196	18,893	2,878	1,648	144	21,915

Beginning with April, 1914, the commissary force is included with that of the Supply Department of The Panama Canal. It was not reported separately in April and May of that year. For the years 1904, 1905, and 1906, November is quoted as the month of highest employment, because it is the last month for

which figures are given in the reports.

The 21,915 employees on December 23, 1915, and the occupants of Panama Canal and Panama Railroad quarters on December 31, 1915, numbering 16,493, were distributed as shown in the accompanying tables. Of the occupants of quarters, 6,660 were Americans, 346 Europeans, and 9,487 West Indians:

DEPARTMENT OR DIVISION.	SILVER EMPLOYEES*															Total silver.	Total gold.	Grand total.
	Artisans.										Laborers.							
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Euro- pean 16 cents.	13 cents.	10 cents.	7 cents.	5 cents.	Total silver.	Total gold.	Grand total.			
Operation and Maintenance; locks & office	315	12	3	23	10	1			8	46	4	15	418	137	555			
Terminal Construction	431		63	201	440	74		79	262	426	8	4	1,697	301	2,098			
Building Division.....	104	2	349	493	482	17		4	181	122	2	11	1,767	180	1,947			
Electrical.....	87		32	46	84	91				5	1		346	177	523			
Municipal Eng.....	286		59	156	186	151		14	100	588	8	28	1,666	87	1,753			
Dredging.....	1,886		9	43	131	42		107	37		4		2,260	329	2,589			
Mechanical.....	142	8	77	129	544	613		13	50	162	6	7	1,751	807	2,558			
Marine Division.....	135												135	33	168			
Fortifications.....	60		32	54	93	9		1	90	64	1	2	405	81	486			
General Construction	5					1			9	56	1	1	74	2	76			
Total.....	3,451	25	624	1,145	1,970	999		112	897	1,506	27	60	10,819	2,134	12,953			
Supply: main office														13	13			
Commissary.....	957			5	6	18	13	248	3	251	17		1,518	130	1,648			
Subsistence.....	421			2	3	8							443	21	464			
Quartermaster.....	774	60	67	81	85	12	35	9	145	632	1	7	1,896	83	1,979			
Accounting.....	23												23	210	233			
Health.....	395		3	4	8				24	396	11	19	870	179	1,049			
Executive.....	126												128	26	354			
Panama Railroad.....	354	99	40	152	267	331	161	24	261	538	5	14	2,546	332	2,878			
Contractors.....	25	2	9	18	1				28	35			118	26	144			
Grand total.....	6,526	187	751	1,409	2,354	1,355	754	148	1,355	3,358	55	109	18,361	3,554	21,915			
Month previous.....	6,575	222	747	1,471	2,694	2,042	1,798	183	1,773	3,250	61	117	20,939	3,763	24,702			
Changes.....	-49	-35	+7	-62	-340	-687	-1,044	-35	-418	+99	-6	-8	-2,578	-209	-2,787			

\*The wages are stated in United States currency.

## QUARTERS.

PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa.....	925	332	302	126*	8	15	1,623*	491	678
Ancon.....	967	441	355	7	.....	.....	246	15	3
Corozal.....	6	3	4	5	.....	.....	29	9	13
Pedro Miguel.....	210	113	136	9	.....	.....	347	113	149
Paraiso.....	306	79	90	47	.....	.....	481	113	158
Culebra.....	20	12	12	1	7	39*	258	329	.....
Gambou.....	43	4	9	.....	.....	.....	168	20	34
Gatun.....	207	175	224	30	4	492	366	684	.....
Cristobal.....	922	345	416	64	.....	.....	1,625*	213	429
<b>Total.....</b>	<b>3,608</b>	<b>1,504</b>	<b>1,548</b>	<b>289</b>	<b>17</b>	<b>40</b>	<b>5,410</b>	<b>1,600</b>	<b>2,477</b>

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 12 Asiatics. (3) Includes 17 American negroes, 84 Colombian and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores and Red Tank. (5) Includes Empire, Las Cascadas, and Bas Obispo. (6) Includes 11 Panamanians. (7) Includes Colon Beach and Colon Hospital. (8) Includes 23 East Indians, 16 colored American citizens, and 139 Panamanians.

## Readjusting Range Lights at Gatun Locks.

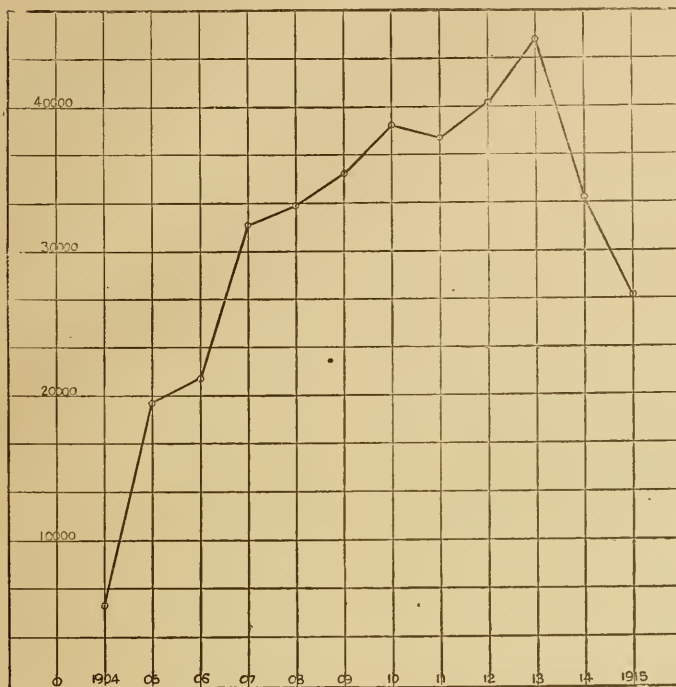
The lighthouse section of the Marine Division has completed certain adjustments of the range lights Nos. 1 and 2, governing the approach to Gatun Locks from Gatun Lake, for the purpose of increasing their intensity when seen from a remote distance. The correction of the lights has been made by adjustments of the lenses, and substitution of helical reflectors for parabolic. As the lights had been before, the pilots complained that they were hardly distinguishable from the illuminating lights on the lock walls, to anyone on a ship in the remote reaches of the range.

Range light No. 1 is situated on the west backfill of Gatun Locks, near the north end of the upper level, and No. 2 is on the upper approach wall.

Work was begun last week on the removal of the old passenger and freight station of the Panama Railroad at New Gatun, which was sold to a contractor.



Graph of Maximum Forces Employed on the Isthmus in the Years of American Occupation.

**Motor Busses May Be Chartered by Private Parties.**

Private parties of Government employes may charter the motor busses of the Panama Railroad Company for excursions. The charge will be \$3 for the first hour and \$2 for each additional hour or fraction, with a minimum charge of \$3. Request for the use of a bus should be made at least 24 hours in advance of the time at which it is to be used, and should be directed to the motor car inspector of the Panama Railroad, Balboa Heights; telephone call, Balboa 322. The busses will take

parties to any of the points that can be reached by highway from Balboa.

**Oils and Greases for Steamship Use.**

A full stock of oils and greases suitable for steamship use is handled at the Canal ports. The oils are carried in stock at the Supply Department storehouse at Balboa and at the dry dock at Cristobal, but orders may be placed through the offices of the Captains of the Ports.

The cable ship *Cyrus W. Field* returned from Balboa to Cristobal on Tuesday, February 8.

**Civil Service Examinations.**

Examinations for the following positions are scheduled to be held, probably on March 5 (date to be left blank in applications): General mechanic, Departmental Service; guard, United States Penitentiary Service; press feeder, Hydrographic Office, men only; telephone operator, Departmental Service.

The spring edition of the manual of examinations has arrived and is ready for distribution.

Announcement will be made later of the examinations to be held in April.

Applications should be secured from and filed with the office of the Board of Civil Service Examiners, Balboa Heights, C. Z. Applications will not be received after February 16; this date may be changed if necessary. A card of admission will be sent to those found eligible to be admitted, upon the receipt of the questionnaires from the Civil Service Commission.

In answer to questions as to residence, applicants must show residence in a State or Territory of the United States, and county thereof, up to the time of filing application, a ruling having been made that employes of The Panama Canal can claim residence in the United States while temporarily employed on the Isthmus.

**Levelman and Transitman Examination.**

An examination for promotion to the position of levelman and transitman will be held in the board room at the Administration Building on Sunday morning, February 20, 1916, beginning at 9 o'clock.

The examination will be divided into four sections as follows, with the relative weight of each section represented by the numbers in parentheses:

Section No. 1—Give your name in full. Give your age. Give names and addresses of not more than three of your former employers. (10) State the extent of your education, with names of preparatory schools and colleges, also advise dates of graduation. (15) Give an outline of your experience and length of service qualifying you for promotion.

Section No. 2—(50)—Written examination.

Section No. 3—(20)—Oral examination.

Section No. 4—(5)—Give sample of your free hand lettering, any 10 words and 10 figures.

Sections 2 to 4, inclusive, will be given in the board room between 9 a. m. and 12 m. on February 20. Section 1 should be submitted with the application for permission to take the examination and should be sent through the head of the division to the Office Engineer, Balboa Heights, on or before February 17, 1916.

C. J. EMBREE, O. E. MALSBRURY, A. WILSON,  
Board of Examiners.

**Legibility in Requests for Reduced Freight Rate and Free Entry.**

Employes of the Government submitting requests for reduced freight rate and free entry of parcels shipped to them from the United States are cautioned to submit the forms filled out legibly, in typewriting if possible. When the forms are not filled out clearly it happens at times that shipments are billed at the regular tariff rates because those handling the shipments are unable to decipher the names, and consequently unable to make the authority for reduced rate cover the shipment for which it was intended.

It is suggested that the heads of departments or divisions, who endorse such requests to the Executive Secretary for approval, see that they are made out legibly before forwarding.

**Deceased Employes.**

Name.	Check No.	Native of	Isthmian Residence.	Employed by	Date of death.
Anderson, David H.....	77856	Jamaica.....	Paraiso.....	Panama Canal..	Jan. 11, 1916.
Andrews, Esau.....	25024	St. Vincent.....	Panama.....	Building Div....	Jan. 28, 1916.
Daley, Thomas.....	88986	Jamaica.....	Colon.....	Colon agency....	Feb. 1, 1916.
Jordon, Samuel.....	56780	Barbados.....	Panama.....	Term. Cons. Div.	Jan. 24, 1916.
Parris, Hudson.....	42799	Barbados.....	Panama.....	Term. Cons. Div.	Jan. 24, 1916.
Watson, David.....	87965	Jamaica.....	Colon.....	P. R. R.....	Jan. 27, 1916.
Windson, Paul.....	77225	Guadeloupe.....	Colon.....	Health Dept....	Jan. 30, 1916.

**Insane Employes.**

Name.	Check No.	Native of	Isthmian Residence.	Employed by	Date of commitment.
Phillips, Joseph.....	102807	Barbados.....	Corozal.....	Electrical Div....	Jan. 24, 1916.

The estates of the abovenamed deceased or insane employes of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



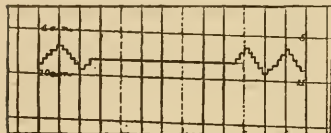
## PARTIAL ECLIPSE OF SUN.

Atmospheric Changes Recorded at Observatories during Period of Obscuration.

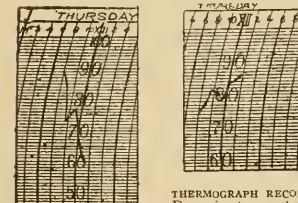
A partial eclipse of the sun by the moon during the forenoon of Thursday, February 3, which attracted considerable attention from the people on the Isthmus, affected to a noticeable extent some of the automatic recording instruments of the Meteorological Division.

The eclipse, as observed at the Balboa Heights observatory, began about 9.10 a. m., and ended about 11.55 a. m., with the maximum obscuration at 10.26 a. m., at which time the sun was a little more than three-fourths obscured. During this period, abnormal conditions were recorded by several of the meteorological instruments. The thermograph, which records the variations of temperature automatically, showed a drop in the temperature at a time of day when, under normal conditions, a steady rise is recorded. The hygrograph, which records the varying percentage of moisture in the air, at the same time showed a rise in the percentage of moisture, where ordinarily the conditions are just the reverse. The sunshine recorder, which indicates the number of minutes the sun is visible and obscured, also showed a break in the record of sunshine, although this was due in part to clouds, which were numerous on the Pacific side at the time of the eclipse.

Only a slight effect was noticeable on the barograph, the maximum atmospheric pres-



SUNSHINE RECORD AT BALBOA HEIGHTS. Between 10 and 11 a. m., February 3. Straight line shows time recorder was affected by eclipse.



HYGROGRAPH RECORD. Showing effect of eclipse on relative humidity.

THERMOGRAPH RECORD. Drop in trace shows drop in temperature during period of obscuration.

sure, due to the diurnal change of temperature, being slightly lower, and the trace being more on the order of a straight line than in the form of a curve, as during normal conditions.

All the effects mentioned above were also noticeable at the Colon observatory, and the automatic traces at the Colon station were similar to those at Balboa Heights.

The effect on the hygrograph and barograph were due indirectly to the abnormal temperature, as this factor influences the per cent of moisture and the atmospheric pressure.

Reproductions of the thermograph and hygrograph sheets during the period of eclipse, and of the trace made by the sunshine recorder are presented herewith.

## Additions to the Panama Canal Library.

The following is bulletin No. 2 of recent additions to the Canal library at Balboa Heights:

GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS, ETC.

Boston Chamber of Commerce, "American Merchant Marine—What it has been, what it is, what it ought to be." Carnegie Hero Fund Commission, Annual reports, 1914-15.

Silk Association of America, 42d annual report, 1914. Silk Association of America, Silk essays.

Bureau of Mines, Approximate melting points of some commercial copper alloys. Technical paper No. 60. By H. W. Gillett and A. B. Horton. 1913.

Bureau of Mines, Deterioration and spontaneous heating of coal in storage. Preliminary report. Technical paper No. 16. By H. C. Porter and F. K. Oviitz. 1912.

Bureau of Mines, Electrolytic method of preventing corrosion of iron and steel. Technical paper No. 15. By J. K. Clement and L. V. Walker. 1913.

Bureau of Mines, Escape of gas from coal. Technical paper No. 2. By H. C. Porter and F. K. Oviitz. 1911.

Bureau of Mines, Flash point of oils. Methods and apparatus for its determination. Technical paper No. 49. By I. C. Allen and A. S. Crossfield. 1914.

Bureau of Mines, Fuller's earth. Bulletin No. 71. By Chas. X. Parsons. 1913.

Bureau of Mines, Hazards in handling gasoline. Technical paper No. 127. By Geo. A. Burrell. 1915.

Bureau of Mines, Heavy oil as fuel for internal-combustion engines. Technical paper No. 37. By I. C. Allen. 1913.

Bureau of Mines, Limits of inflammability of mixtures of methane and air. Technical paper No. 119. By G. A. Burrell and G. G. Overfelt. 1915.

Bureau of Mines, Methods for the determination of water in petroleum and its products. Technical paper No. 25. By I. C. Allen and W. A. Jacobs. 1912.

Bureau of Mines, Study of oxidation of coal. Technical paper No. 65. By P. C. Porter and O. C. Ralston. 1914.

Department of Agriculture, Ashes—Their characteristics and management. Professional paper bulletin No. 299. By W. D. Sterrett, forest examiner. 1915.

Department of Agriculture, Duck raising. Farmers' bulletin No. 697. By Alfred R. Lee. 1915.

Department of Agriculture, Trenching machinery used for the construction of trenches for tile drains. Farmers' bulletin No. 698. By D. L. Yarnell, drainage engineer, Division of Drainage Investigations.

Government Printing Office, Correct orthography of geographic names. Revised to January, 1915.

Navy Department, Movements of vessels. 1915.

Smithsonian Institution, Reports of wind tunnel experiments in aerodynamics. Miscellaneous collections No. 2368. By L. C. Hunsaker, E. Buckingham, H. E. Rossell, D. W. Douglas, C. L. Brand, and E. B. Wilson.

United States Civil Service Commission, Annual report of the United States Civil Service Commission for the fiscal year ending June 30, 1915.

United States Geographic Board, Decisions of the United States Geographic Board. 1910-14.

MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.

Aluminum Cooking Utensil Co., catalogue and price list of "Wear-Ever" aluminum hotel ware.

Diamond Expansion Bolt Co., leaflets on telephone and electrical specialties, catalogue No. 98.

Gohen Mfg. Co., "The Scientist," leaflets of paint information.

Theo. A. Kochs & Son, catalogue of barbers' supplies.

McCray Refrigerator Co., refrigerators for residences, catalogue No. 92.

National Affiliated Safety Organizations, leaflet describing arc welder's helmet.

Wheeler Reflector Company, catalogues of porcelain enameled reflectors and lighting specialties.

## ARTICLES ABOUT THE CANAL.

Engineering Record, New York—Page 87, January 15, 1916, issue: "Panama Slides."

Pacific Marine Review, San Francisco—Page 45, January, 1916, issue: Dredge Cascados; page 62, "Closing the Canal."

Steam Shovel and Dredge, Chicago—Page 19, January, 1916, issue: "The Slides at Panama."

Bulletin of the Panamanian Union, Washington—Page 220, December, 1915, issue: "La Quica-Tupiza. Rival to Panama Canal."

The Excavating Engineer, Milwaukee—Page 140, January, 1916, issue: "Dredging in the Cut."

## DREDGING AT ENTRANCES.

Reduced to Most Important Features While Canal Is Blocked.

During the blocking of the Canal all of the dredging equipment which can be used to advantage on the slides has been concentrated in Gaillard Cut, leaving for the work in the Atlantic and Pacific entrances only a small part of the fleet. At the Atlantic terminus excavation for core fill for the new East Breakwater is being carried on at Coco Solo by the 18-inch pipeline suction dredge No. 4, the spoil being handled along the trestle through two relay stations to the breakwater proper; and at the new coaling plant, the slips alongside the wharves and a widened turning basin are being excavated by the 20-inch pipeline suction dredges No. 83 and No. 84 and the Belgian ladder dredge Marmot, transferred to Cristobal from the Cut on January 30. No maintenance work is being done in the 7-mile sealevel section of the Canal extending from deep water in Limon Bay, just within the breakwaters, to Gatun Locks.

At the Pacific entrance the rockbreaker Vulcan has been engaged in breaking to grade a few rock ledges remaining in the Canal prism. Ladder dredge No. 5 was engaged during the entire month of January in the slip to the north of pier No. 18, and is removing a part of the old abandoned Sosa-Corozal dam. Pipeline suction dredge No. 85 was engaged from January 1 to 19 in deepening high areas in the inner harbor to -39 feet; from the 20th to the 23rd in removing silt from rock shoal near the south end of the old Panama Railroad pier; and from the 23rd to the 31st, in excavating silt from the prism, between stations 2149 and 2160-50 west.

The channel at the Pacific entrance has been completed to a depth of -45 feet from deep water to a point 600 feet south of the old Panama Railroad dock; from this point to Miraflores Locks, the minimum depth is about -42 feet, the channel having been completed except in a few rock patches. However, there has been some silting in this area.

The inner harbor excavation is at this time being carried to a depth of -39 feet as a temporary expedient because of lack of funds, except around the docks, where it is carried to -45 feet. There is no difficulty in handling ships to the wharves which are ready to be used.

In the Atlantic entrance channel, and channels leading to the terminals, construction of channel has been completed to a depth of 42 feet below mean tide, though this minimum depth has been decreased at places by silting. The tidal variations on the Atlantic side of the Isthmus are so slight as to be negligible; on the Pacific side, with a fluctuation as high as 20 feet, a depth of 45 feet below mean tide means approximately 35 feet at extreme low tide.

## Applications for Family Quarters.

Applications for married quarters were on file on January 31, 1916, as follows:

STATIONS.	Number of applications.
Ancon .....	389 (80)
Ancon Hospital .....	3
Paraiso .....	163 (21)
Gatun .....	122 (14)
Cristobal .....	154 (37)
Total .....	831 (152)

NOTE—The figures in parentheses show the number of applicants already occupying regular or nonhouse-keeping family quarters at stations other than those at which applications are filed.

# OFFICIAL CIRCULARS.

## Notice to Mariners.—Derelict Reported.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., February 5, 1916.

CIRCULAR No. 643-18:

The master of the steamship *Heracles* reports that on December 24, 1915, he passed a derelict, apparently three masted ship, partly above water, in latitude 7° 40' North, longitude 79° 34' West. Large amount of lumber floating nearby.

JAY J. MORROW,  
Acting Governor.

## Schedule of Laboratory and Miscellaneous Hospital Charges for Employees.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 31, 1916.

CIRCULAR No. 618-10:

The schedule of laboratory and miscellaneous charges on page 7 of circular No. 618-5 of May 15, 1915, is hereby amended, effective February 1, 1916.

EMPLOYEES OF THE PANAMA CANAL OR THE PANAMA RAILROAD COMPANY OR OF CONTRACTORS UNDER THE PANAMA CANAL.

	(a) Monthly pay \$50 or less.	(b) Monthly pay more than \$50.
Coffin:		
Adult's.....	(1a) \$3.25	(1a) \$3.25
Child's.....	(1a) 1.25	(1a) 1.25
Cremation.....	Free	Free
Disinterment.....	(1a) 5.00	(1a) 5.00
Embalming.....	(1a) 10.00	(1a) 10.00
Funeral direction.....	Free	Free
Hearse.....	(1) 3.00	(1) 3.00
Interments.....	(1a) 3.00	(1a) 3.00
Lining and sealing caskets:		
Adult's.....	(1a) 10.00	(1a) 10.00
Child's.....	(1a) 5.00	(1a) 5.00
Preparation of salmagundi:		
ized serum.....	5.00	10.00
Receptacles for ashes of cremated.....	Free	Free

(1) Free for American employees only. For all other employees, from Ancon Hospital morgue to Coruzal cemetery, \$5; from Ancon Hospital morgue to Panama cemetery, free. (1a) Free for American employees only.

JAY J. MORROW,  
Acting Governor.

## Rates for X-ray Service.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 31, 1916.

CIRCULAR No. 618-9:

Circular No. 618-6 of November 13, 1915, fixing rates and regulations for hospital and medical service, is hereby amended.

Effective February 1, 1916, the basis of charges to employees, dependent members of their families, and others entitled to the same rates, for X-ray examinations (elective), other than for dental work, will be the same as for elective operative operations, except that the minimum charge will be 50 cents for employees receiving \$50 or less per month, and \$1 for all others who are charged on a percentage basis.

JAY J. MORROW,  
Acting Governor.

## Use of Coupon, Mileage, and Pass Books.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 31, 1916.

CIRCULAR No. 709:

1. Employees using coupon books, mileage books, or pass books are required to surrender them to collectors or cashiers at any time when use is being made of the book, without question or argument.

2. This rule is necessary to prevent unauthorized use of books and is for the protection both of employees and the Government.

JAY J. MORROW,  
Acting Governor.

## Board of Health Ordinance.—Bathing Beaches.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 29, 1916.

CIRCULAR No. 708:

The resolution quoted below, adopted by the Board of Health, is approved, and published for the information of all concerned:

JAY J. MORROW,  
Acting Governor.

1. The Board of Health of the Canal Zone respectfully state that it has come to their knowledge that private bathing places are being maintained in Canal Zone

waters without authority from the Governor; the Board, therefore, requests that the Police Department be instructed to advise the persons so maintaining bathing places, and the public in general, that such bathing places without authority from the Governor are prohibited.

2. It is suggested that all persons desiring to establish bathing houses or bathing places in the waters of the Canal Zone for profit be required to obtain a permit from the Governor or from such official as he may designate, upon condition that the person obtaining the permit shall make provision for the safety of the bathers in accordance with the following rules:

(a) In order to secure the safety of bathers two lines of sound, serviceable, and strong manila hemp rope, not less than one inch in diameter, anchored at some point above high water, the same distance apart as the width of the space occupied by the owner of the bathing place fronting on such beach, which is deemed suitable for bathing; and from the two points at which such line is so anchored, such line shall be made to extend as far into the water as bathing therein is ordinarily safe and free from danger of drowning persons not expert in swimming, at limit points of safety such lines shall be anchored and buoyed. From such lines so extended, anchored, and buoyed, a cross line shall be extended enclosing the area regarded as safe for swimmers.

(b) At locations where the variations of the tide are great, additional lines, enclosing the area regarded as safe for swimmers at low tide, may be directed by the Governor, or by the official authorized to issue permits in his name.

(c) Every keeper, proprietor, or person in charge of bathing beach, bathing house, or bathing place in the waters of the Canal Zone, under permit from the Governor, shall cause to be painted and put up in some prominent place upon the shore or beach near such bathing house or bathing place the following words: "BATHING BEYOND THE LIFE LINES IS DANGEROUS."

(d) A copy of these rules shall be posted in a conspicuous place at all bathing houses or bathing places to which they apply.

(e) A failure to comply with any of the foregoing regulations shall be sufficient cause for the revocation of permit held by the delinquent.

3. The foregoing resolution was adopted at a meeting of the Board of Health, held at Balboa Heights, C. Z., on the 22nd day of January, 1916.

CHAS. F. MASON,  
Chairman, Board of Health.

## Board of Health Ordinance.—Swimming Pools.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 29, 1916.

CIRCULAR No. 708-1:

The ordinance quoted below, enacted by the Board of Health, is approved, and published for the information of all concerned:

JAY J. MORROW,  
Acting Governor.

### ORDINANCE No. 6\*.

Be it ordained by the Board of Health of the Canal Zone: Section 1. It shall be unlawful for any person, firm, association, or corporation to conduct, manage, or maintain any natatorium, swimming pool, or tank in any place in the Canal Zone, or for any person to bathe in or use any such natatorium, swimming pool, or tank without complying with all of the rules and regulations for the protection and safety of the health of the patrons of such natatorium, pool, or tank.

Sec. 2. All enclosed pools or tanks, with nonporous bottoms, shall be thoroughly cleaned at least once each week, with soap or lye and water, and when necessary an additional cleaning with bichloride of mercury or carbolic acid solution or other disinfectant, as the Health Department may direct, and all such pools or tanks shall be emptied and the water therein completely changed at least twice each week.

Sec. 3. The manager of any natatorium, swimming pool, or tank must also have sufficient water and porous bottoms must also have sufficient outlet pipes to insure adequate change of water, and at all times to be maintained in a sanitary condition.

Sec. 4. The bottoms and sides of all tanks or pools where fresh water is used shall be white, so that objects may be clearly seen, so far as possible, in all portions of the pool or tank; where salt water is furnished the bottom and sides need not be white.

Sec. 5. The manager of any natatorium, swimming pool, or tank shall provide a sufficient number of attendants, instructors, and life-savers, with qualifications and training sufficient to enable them, in case of necessity, to render aid to those using such pools or tanks, in order to avoid accidents.

Sec. 6. No intoxicated person, or one afflicted with tuberculosis, abscess, venereal, or other infectious or contagious disease, shall use or be permitted to use any

\*Previous ordinances of the Board of Health are published in pamphlet form.

swimming pool or tank and anyone so offending shall be punished as provided in section 13 hereof.

Sec. 7. All persons, before entering any swimming pool or tank, shall be required to thoroughly cleanse the body with soap and water, through the use of shower bath or other similar device maintained and used for such purpose.

Sec. 8. All swimming pools shall be provided with sufficient cuspidors, kept and maintained in all dressing rooms and at the edge of all pools, and proper and convenient toilet accommodations, and drainage shall be provided around all pools or tanks so as to keep unclean water or other material from flowing into said pools or tanks.

Sec. 9. No person, attendant, instructor, or other person, while bathing or while engaged or working about or in any pool or tank, shall smoke or chew tobacco in any form, and it shall be unlawful for any person to expectorate in the water of any tank or pool or to blow the contents of his nose therein; the cuspidors are provided for such purpose. All persons are expected to use the toilet accommodations, and nuisances committed in the pool or tank or in or about the bath house shall be punishable as an offense hereunder.

Sec. 10. The water of the pool must be maintained in a condition suitable for bathing purposes at all times. Sec. 11. A copy of this ordinance shall be posted and kept in a conspicuous place near all natatoriums, swimming pools, and tanks, for the guidance and information of the public and patrons of such places.

Sec. 12. Before the construction of any natatorium, swimming pool, or tank, the plans and specifications for such structure shall be submitted to and approved by the Board of Health before a permit therefor shall be issued for same.

Sec. 13. Any person failing to comply with any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction, shall be fined in any sum not more than \$100.

The foregoing ordinance was duly adopted at a meeting of the Board of Health of the Canal Zone held at Balboa Heights, Canal Zone, on the 20th day of December, 1915.

CHAS. F. MASON,  
Chairman, Board of Health.

## Board of Health Ordinance.—Keeping of Fowls and Small Animals.

THE PANAMA CANAL,  
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 29, 1916.

CIRCULAR No. 708-2:

The ordinance quoted below, enacted by the Board of Health, is approved, and published for the information of all concerned:

JAY J. MORROW,  
Acting Governor.

### ORDINANCE No. 7.

Be it ordained by the Board of Health of the Canal Zone: Section 1. It shall be unlawful for any person to keep within the limits of the Canal Zone any live hares, rabbits, guinea pigs, monkeys, squirrels, chickens, turkeys, geese, ducks, or other small animals or fowls, without a permit therefor issued by the Board of Health, or otherwise than in accordance with the terms of said permit and the regulations of said Board.

Sec. 2. The fowls and animals referred to in section 1 shall not be kept in any building which is not rat-proof in the manner provided for the rat-proofing of buildings, unless same are kept in a rat-proof coop.

Sec. 3. Within the area embraced in the limits of the Canal Zone towns, said coops shall be portable and elevated at least two feet from the ground.

Sec. 4. All food for such fowls and animals shall be kept in closed metal receptacles so constructed that the contents shall be inaccessible to rats, and within towns no such food shall be thrown or scattered on any floor, area or open space, but shall be placed only in coops hereinbefore provided for.

The foregoing ordinance was duly adopted at a meeting of the Board of Health of the Canal Zone held at Balboa Heights, Canal Zone, on the 10th day of December, 1915.

CHAS. F. MASON,  
Chairman, Board of Health.

## COMMISSARY DEPARTMENT.

### Numbers on Commissary Books and Coupons.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., January 31, 1916.

To all salesmen and cashiers—In detaching coupons from the new form coupon books, care must be taken to see that the number on the coupons agrees with the number on the cover of the book. This is necessary in order to detect any fraudulent use of detached coupons. In any case where it is found that the number on the coupons does not agree with the number on the



book cover, the book and coupons should be immediately taken up and forwarded direct to the Auditor.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
WM. R. GROVE,  
Chief Quartermaster.

### Native Rib Steak.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT.

CRISTOBAL, C. Z., February 1, 1916.

#### MEMORANDUM No. 2:

To commissary managers—Attention is invited to the item of rib steak, native, at 11 cents per pound, which appears for the first time on retail cold storage price lists sent out tonight.

Please bring this to the attention of your trade.

BENI. L. JACOBSON,  
Deput Commissary.

### Proposals for Furnishing Beef Cattle to the Commissary Branch.

Sealed proposals will be received at the office of the Depot Commissary, Panama Canal, until 4 p. m., April 15, 1916, and then opened, for furnishing the commissary branch of the Supply Department of The Panama Canal with beef cattle during the 12 months beginning July 1, 1916, the estimated requirements being 1,000 steers per month. Specifications and general conditions under which cattle must be furnished are contained in circular invitation No. 1, dated February 1, 1916, and bids must be submitted in accordance therewith. Copies of this circular may be obtained upon application to the Depot Commissary, Cristobal, C. Z. Bids must be marked "Proposal for furnishing beef cattle, to be opened April 15, 1916," and addressed to the Depot Commissary, Cristobal, C. Z. The right is reserved to reject any or all bids.

### Cold Storage Price List.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective February 10 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. Copies of these lists may be obtained on application, by mail or from the boarding officers who visit incoming ships, immediately on arrival. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by the Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions will be effective February 10, 1916. The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.	
Beef suet, special, per lb.	Price. \$0.33
Beef suet, native, pm, native, per lb.	.03
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.05
Soup bone, special, per lb.	.024
Soup bone, native, per lb.	.023
Stew beef, special, per lb.	.11
Stew beef, native, per lb.	.08
Plate beef, native, per lb.	.08
Chuck roast (3 lbs. up) special, per lb.	.11
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (34 lbs. up) special, per lb.	.16
Rib roast, 2d cut (34 lbs. up), native, per lb.	.09
Porterhouse roast (11 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Pot roast, special, per lb.	.20
Pot roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse roast, choice, per lb.	.31
Porterhouse roast, special, per lb.	.22
Porterhouse roast, native, per lb.	.16
Chuck steak, special, per lb.	.13
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.12
Porterhouse steak (11 lbs. up), special, per lb.	.34
Porterhouse steak (11 lbs. up), native, per lb.	.23
Porterhouse steak (11 lbs. up), native, per lb.	.17

Porterhouse steak, short, choice, per lb.	Price. .28
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25
Rib steak, native, per lb.	.11
FRESH MEATS.	
Lamb, chops, per lb.	.29
Lamb, chops, shoulder, per lb.	.20
Lamb, legs, 3 to 8 lbs., per lb.	.24
Lamb, shoulder, trimmed, not less than 34 lbs. per lb.	.15
Lamb, stewing, per lb.	.12
Mutton chops, short cut, per lb.	.23
Mutton chops, shoulder, per lb.	.17
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs. per lb.	.12
Mutton, stewing, per lb.	.09
Pork, hams, fresh (see footnote), per lb.	\$.25
Pork, loins, chops, or roast, per lb.	.19
Pork, shoulders, fresh (see footnote), per lb.	\$.20
Veal, chops, per lb.	.27
Veal, chops, shoulder, per lb.	.27
Veal, cullets, per lb.	.45
Veal, loin for roasting, per lb.	.40
Veal, shoulder for roasting not under 4 lbs. per lb.	.16
MISCELLANEOUS.	
Brains, calves', per lb.	.07
Calves' heads, ea.	.78
Kidneys, fresh, per lb.	.08
Livers, beef, per lb.	.13
Livers, calves', per lb.	.24
Pates de foie gras, jar.	.67
Pigs' head, fresh, whole, per lb.	.83
Pigs' heads, fresh, 1/2 head, half.	.42
Sausage, bologna, per lb.	.16
Sausage, frankfurter, per lb.	.19
Sausage, heberwurst, per lb.	.14
Sausage, pork, per lb.	.23
Sausage, pork, homemade, per lb.	.24
Sausage, salami, per lb.	.33
Stare ribs, per lb.	.13
Steak, hamburger, pkg.	.17
Steak, hamburger, 20-pound container, per lb.	.14
Kidneybread, beef, per lb.	.09
Tails, beef, per lb.	.11
Tongue, beef, native, whole, per lb.	.20
Yeast, per lb.	.31
Yeast, cake.	.02
CURED AND PICKLED MEATS.	
Bacon, breakfast, whole piece, per lb.	.284
Bacon, breakfast, sliced, per lb.	.294
Bacon, sliced, jar.	.30
Bacon, sliced, tin.	.28
Bacon, squares, whole square, per lb.	.19
Bacon, strips, whole trip.	.20
Beef, corned—No. 1, per lb.	.15
Beef, corned—No. 2, per lb.	.12
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.21
Ham, shoulders, bonedless, sugar cured, whole shoulder, per lb.	.17
1. Ham, sugar cured (whole) per lb.	.22
2. Ham, sugar cured (half) per lb.	.22
3. Ham, sugar cured (sliced) per lb.	.30
1. Ham, sugar cured, boiled (whole) per lb.	.33
2. Ham, sugar cured, boiled (half) per lb.	.36
3. Ham, sugar cured, boiled (sliced) per lb.	.36
Pigs feet, pickled, per lb.	.08
Pork, bellies, per lb.	.20
Pork, clear, per lb.	.11
Pork, standard mess, per lb.	.11
Spiced head meat, jar.	.30
Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs', per lb.	.22
POULTRY AND GAME.	
Broilers, corn fed, per lb.	.31
Broilers, milk fed, per lb.	.34
Capons, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.27
Chickens, fancy roasting, milk fed, per lb.	.30
Ducks, per lb.	.22
Fowls, light, per lb.	.22
Fowls, western, dry picked, per lb.	.254
Geese, per lb.	.254
Squabs, ea.	.65
Turkeys, per lb.	.32
DAIRY PRODUCTS.	
Butter, creamery special, per lb.	.46
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.45
Butter, Shiloh farms, extra fancy, per lb.	.50
Cheese, Edam, ea.	.39
Cheese, Edam, tin.	.39
Cheese, Gouda, per lb.	.32
Cheese, parmesan, per lb.	.39
Cheese, Philadelphia cream, per lb.	.09
Cheese, Roquefort, per lb.	.59
Cheese, Snappy, cake.	.09
Cheese, Swiss, per lb.	.264
Cheese, Swiss America, per lb.	.264
Cream, 30 per cent, 1 pt.	.174
Cream, 30 per cent, pt.	.294
Cream, 30 per cent, qt.	.524
Eggs, fresh, per doz.	.44
Eggs, fresh, 1/2 doz. only.	.234
For-mil-lac, bottle.	.254
Ice cream, (see footnote) 1 gal.	.804
Milk, Sheffield farms, qt.	.154
Oleomargarine, per lb. ctu.	.29

FISH.		Price.
Bluefish, fresh, per lb.		.19
Cod fish, dried, per lb.		.11
Haddock, smoked, per lb.		.11
Halibut, fresh, per lb.		.09
Herring, smoked, per lb.		.11
Oysters, fresh, per qt.		.44
Salmon, fresh, per lb.		.11
Whitefish, smoked, per lb.		.34
VEGETABLES.		
Beans, string, per lb.		.10
Beets, per lb.		.03
Beets, new, per lb.		.07
Brussels sprouts, per qt.		.20
Cabbage, per lb.		.024
Cauliflower, per lb.		.04
Carrots, new, per lb.		.04
Cauliflower, per lb.		.15
Celery, per head.		.10
Chocho, each.		.12
Corn, green, per doz.		.12
Cucumbers, per lb.		.204
Egg plant, per lb.		.094
Lettuce, per lb.		.12
Onions, per lb.		.04
Onions, young, per bunch.		.02
Parsnips, per lb.		.03
Peas, green, per lb.		.04
Plantains, per doz.		.12
Potatoes, sweet, American, per lb.		.04
Potatoes, sweet, tropical, per lb.		.024
Potatoes, white, per lb.		.04
Squash, per lb.		.04
Tomatoes, per lb.		.07
Turnips, per lb.		.024
Yams, luca, per lb.		.03
FRUITS, DRIED.		
Apples, evaporated, per lb.		.12
Apricots, evaporated, per lb.		.15
Currants, cleaned, per lb.		.15
Figs, dried, 15-oz box.		.21
Peaches, evaporated, per lb.		.08
Pears, evaporated, per lb.		.18
Peel, citron, per lb.		.16
Peel, lemon, per lb.		.16
Peel, orange, per lb.		.16
Prunes, stewing, per lb.		.13
Raisins, seeded, per lb.		.11
Raisins, table cluster, per lb.		.15
FRUITS, FRESH.		
Apples, fresh, per lb.		.04
Apples, fresh, select, per lb.		.064
Bananas, 8 hands and over, per bunch.		.28
Bananas, 6 and 7 hands, per bunch.		.28
Bananas, ea.		.004
Custard apples, ea.		.02
Grapes, per lb.		.04
Grapefruit, select, ea.		.07
Grapefruit, tropical, ea.		.034
Lemons, per doz.		.174
Oranges, select, ea.		.12
Oranges, tropical, doz.		.12
Pineapples, ea.		.114

\* Indicates advance from preceding list.  
\*\* Indicates five cents allowed for return of bottle.  
† Indicates reduction from preceding list.  
‡ Sold only from commissaries, no orders taken for delivery.  
§ Not less than 1/2 ham of 1/2 shoulder or fresh pork will be sold.

### Price Changes.

The following changes in prices of articles in stock at the commissary stores become effective February 7:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Coca Cola, bot.	\$0.08	\$0.04
Cream soda, bot.	.08	.04
Clear ale, bot.	.08	.04
Lemon soda.	.08	.04
Root beer, bot.	.08	.04
Sarsaparilla, bot.	.08	.04
Tea, plain, bot.	.08	.04
*Cigars, Corona de Golofina, ea.	.13	.10

\* Formerly sold by box of 25 at \$3.25, they may now be sold singly at 10 cents each.

### Midnight Letters.

BALBOA HEIGHTS, C. Z., February 9, 1916.  
The following insufficiently addressed letters and packages have been received at the office of the Director of Posts and may be procured upon request of the addressee:

Cartier, Henry F.	†Krogdahl, A. A.
Catts, G. R.	†Liebers, Jack
Chamberlain, John	McNelly, Alvie
Chetty, Mrs. John	Murphy, Guy
*Clawson, Fred	Owen, N. J.
*Develin, Joseph	Rees, Emmet
*Donald, John (Box 146)	Ripberger, J. J.
Durham, J. H.	Vannah, L. C.
Hensler, Otto	†Wilson, R. B.
Jones, Frank	

\* Package. † Paper. ‡ Card.



## SHIPPING INFORMATION.

## March Weather Probabilities.

During the month of March the following weather conditions may be expected at the Canal entrances. These predictions express average conditions and are based on the records at Colon and Balboa Heights (formerly Ancon) for the past eight and 10 years, respectively.

**Winds**—There should be a slight increase in the wind movement as compared with February conditions, and fresh northerly dry season winds may be expected throughout the month. North and northeast winds will prevail at the Atlantic entrance, with an average hourly velocity of about 15 miles an hour. The maximum velocity for the month is not likely to exceed 35 miles an hour.

Northwest winds will prevail over the interior and the Pacific coast, with an average hourly velocity of about 11 miles an hour. Probabilities of a maximum velocity of more than 30 miles are slight.

**Rain**—March is almost invariably the month of least rainfall, and no heavy rains are likely to occur during the month, although light showers may be expected occasionally at both Canal entrances. The average rainfall at the Atlantic entrance is 1.71 inches, while on the Pacific side the average is 0.67 inches. The average numbers of days on which 0.01 inch or more of rain is recorded are 15 and two, respectively.

**Fogs**—No fogs are likely to occur at either Canal entrance, but night and early morning fogs may be expected to form occasionally over the interior. The average number of nights with fog over the Gaillard Cut section of the Canal is four. No dense fogs are likely to occur, and practically all light fogs may be expected to lift or become dissipated before 8.30 a. m.

**Temperature**—An average shade air temperature of 80 degrees Fahrenheit can be expected at the Atlantic entrance, while on the Pacific side it should be slightly higher, about 82° F. The temperature is not likely to rise above 88° F. or fall lower than 67° F. on the Atlantic coast, while on the Pacific it may be as high as 96° F. and as low as 65° F. The mean daily range in temperature is much greater on the Pacific coast than on the Atlantic, especially during the dry season months. For the month of March it should be about 20° F. and 7° F., respectively.

**Barometric pressure**—As the Canal Zone lies without the regions affected by violent atmospheric disturbances, the barometric pressure is remarkably constant and uniform, and except for the well marked diurnal change caused by the variation in temperature, changes in pressure are so slight as to have little value as indicators of future weather conditions. The average March sea level pressure is 29.88 inches. A maximum pressure of over 30.00 inches, or a minimum less than 29.73 inches, is not likely to occur at either Canal entrance.

**Relative humidity**—The average percentage of moisture in the air (zero for absolute dryness and 100 for complete saturation) should be about 70 per cent on the Pacific coast and 77 per cent on the Atlantic. On the Pacific coast the humidity will vary between 90 per cent and 45 per cent, while on the Atlantic side the variation will be less, between 85 per cent and 65 per cent.

**Storms**—Fair weather may be expected on

both coasts and probabilities of any severe general storms are slight. However, a rough sea and heavy swell may at times be produced outside the breakwaters at Colon by the fresh northerly trades, and during this period of the year the so-called "northerns" occasionally reach as far south as the Isthmus. Smooth to moderate seas may be expected at the Pacific entrance to the Canal.

**Tides**—Owing to the fact that the average fluctuation at Colon is less than one foot and the maximum approximately two feet, tidal fluctuations at the Atlantic entrance need not be considered in navigation. Panama (Balboa) tide predictions for the remainder of February and for the month of March are given below:

Tide Predictions.  
FEBRUARY.

DATE.	Time and height of high and low water.			
Wed., Feb. 9.....	1:41	7:53	14:00	20:10
Thurs., Feb. 10.....	1:0	14:1	1:7	14:5
	2:28	8:35	14:48	20:54
Fri., Feb. 11.....	2:1	13:0	3:0	13:4
	3:29	9:23	15:42	21:44
Sat., Feb. 12.....	3:1	12:0	4:0	12:4
	4:17	10:24	16:42	22:49
Sun., Feb. 13.....	3:9	11:2	4:8	11:7
	5:25	11:40	17:49	23:49
Mon., Feb. 14.....	4:03	10:9	5:1	10:55
	6:27	12:53	18:55	24:55
Tues., Feb. 15.....	11:5	4:5	11:0	5:0
	12:7	7:29	13:50	19:54
Wed., Feb. 16.....	11:8	3:9	11:6	4:4
	12:9	8:21	14:36	20:44
Thurs., Feb. 17.....	12:4	1:1	12:4	8:6
	12:9	9:05	15:32	21:27
Fri., Feb. 18.....	12:9	2:3	13:1	2:7
	3:23	9:44	15:53	22:04
Sat., Feb. 19.....	13:5	1:6	13:8	1:9
	4:42	10:19	16:27	22:40
Sun., Feb. 20.....	14:1	1:0	14:4	1:4
	4:39	10:53	17:02	23:15
Mon., Feb. 21.....	14:5	0:6	14:9	0:8
	5:35	11:27	17:36	23:50
Tues., Feb. 22.....	14:7	0:5	15:2	0:6
	5:52	12:01	18:10	24:27
Wed., Feb. 23.....	14:8	0:7	15:4	0:7
	6:27	6:30	12:38	18:48
Thurs., Feb. 24.....	0:7	14:6	1:0	15:3
	1:07	7:09	13:19	19:24
Fri., Feb. 25.....	1:0	14:3	1:5	15:0
	1:53	7:52	14:07	20:10
Sat., Feb. 26.....	1:37	13:8	1:8	14:3
	2:47	8:44	15:05	21:45
Sun., Feb. 27.....	2:1	13:1	3:0	13:7
	3:51	9:50	16:13	22:57
Mon., Feb. 28.....	2:7	12:6	3:5	13:2
	5:02	11:11	17:28	23:40
Tues., Feb. 29.....	2:8	12:5	3:6	13:2
	6:15	12:30	18:44	24:15
	2:5	13:0	3:1	13:2

## MARCH.

DATE.	Time and height of high and low water.			
Wed., March 1.....	0:56	7:24	13:36	19:51
	13:7	1:8	14:40	2:1
Thurs., March 2.....	1:39	8:22	14:52	2:48
	14:4	0:8	15:0	1:0
Fri., March 3.....	2:53	9:13	15:22	2:137
	15:2	-0:1	15:9	0:0
Sat., March 4.....	3:43	9:58	16:22	2:22
	15:7	-0:7	16:5	-0:6
Sun., March 5.....	4:31	10:41	16:53	23:04
	16:0	-0:9	16:7	-0:9
Mon., March 6.....	5:16	11:21	17:34	23:43
	15:9	-0:7	16:5	-0:6
Tues., March 7.....	5:57	12:00	18:14	24:1
	15:6	0:0	16:0	0:0
Wed., March 8.....	6:37	12:41	18:54	24:54
	1:0	14:9	0:9	15:2
Thurs., March 9.....	1:03	7:16	13:22	19:21
	1:0	14:0	2:0	14:2
Fri., March 10.....	1:47	7:53	14:12	20:11
	2:1	13:0	3:2	13:1
Sat., March 11.....	2:36	8:39	15:00	20:57
	3:2	11:9	4:3	12:1
Sun., March 12.....	3:33	9:36	16:04	22:00
	4:3	11:1	5:1	11:3
Mon., March 13.....	4:40	10:55	17:14	23:10
	4:7	10:7	5:5	11:2
Tues., March 14.....	5:49	12:15	18:28	24:22
	4:7	10:9	5:2	11:0
Wed., March 15.....	6:31	6:54	13:19	19:25
	11:3	4:3	11:6	4:3
Thurs., March 16.....	1:30	7:48	14:12	20:15
	12:0	5:3	12:4	3:5
Fri., March 17.....	2:14	8:34	14:42	20:57
	12:8	2:6	14:4	2:4
Sat., March 18.....	2:55	9:13	15:17	21:36
	13:6	1:7	14:3	1:3
Sun., March 19.....	3:33	9:49	15:52	22:12
	14:4	1:6	15:0	0:5

DATE.	Time and height of high and low water.			
Mon., March 20.....	4:11	10:25	16:26	22:48
	14:9	0:5	15:6	-0:1
Tues., March 21.....	4:49	11:00	17:03	23:24
	15:2	0:2	16:0	-0:3
Wed., March 22.....	5:28	11:37	17:41	24:00
	15:4	0:2	16:0	0:0
Thurs., March 23.....	6:03	6:07	12:16	18:21
	-0:2	13:2	0:6	15:8
Fri., March 24.....	6:44	6:51	13:00	19:04
	0:3	14:8	1:2	15:2
Sat., March 25.....	1:32	7:37	13:51	19:53
	1:0	14:2	2:1	14:4
Sun., March 26.....	2:28	8:32	14:52	20:52
	1:8	13:4	3:0	13:5
Mon., March 27.....	3:35	9:40	16:04	22:07
	2:6	12:8	3:5	12:9
Tues., March 28.....	4:47	11:01	17:21	23:32
	2:9	12:7	3:6	12:8
Wed., March 29.....	5:59	12:19	18:32	24:07
	2:7	13:3	4:0	13:2
Thurs., March 30.....	6:48	7:05	13:22	19:37
	13:2	2:1	14:1	2:0
Fri., March 31.....	1:49	8:03	14:15	20:31
	14:0	1:2	15:0	1:0

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the actual reckoning; for instance, 15:47 is 3:47 p. m.

## Rainfall from January 1 to 31, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>	<b>Ins.</b>		<b>Ins.</b>
Balboa.....	.31	4	1.15
Balboa Heights.....	.36	18	1.41
Miraflores.....	.90	18	2.19
Pedro Miguel.....	.70	14	1.71
Rio Grande.....	.19	14	.68
<b>Central Section—</b>			
*Culebra.....	.87	14	1.30
*Camacho.....	.63	14	1.42
Empire.....	.50	1	1.07
Gambou.....	.140	14	1.26
*Juan Mina.....	.72	31	1.46
Alhajuela.....	.40	11	.66
*Vigia.....	.11	8	.22
Frijoles.....	1.06	14	1.32
*Trinidad.....	.54	18	2.03
*Monte Lirio.....	.65	15	.75
<b>Atlantic Section—</b>			
Gatun.....	.16	17	1.05
*Brazos Brook.....	.49	17	1.50
Colon.....	1.63	17	2.33
*Bocas del Toro.....	3.21	5	13.04

## Rainfall from February 1 to 5, 1916, Inclusive.

STATIONS.	Ins.	Date.	Ins.
<b>Pacific Section—</b>			
Balboa.....	.01	1	0.01
Balboa Heights.....	.01	1	0.01
Miraflores.....	.01	1	0.01
Pedro Miguel.....	.01	1	0.00
Rio Grande.....	.01	1	0.00
<b>Central Section—</b>			
*Culebra.....	.01	1	0.01
*Camacho.....	.10	1	0.10
Empire.....	.01	1	0.00
Gambou.....	.01	1	0.01
*Juan Mina.....	.01	1	0.01
Alhajuela.....	.02	1 & 3	0.04
*Vigia.....	.05	4	0.07
Frijoles.....	.02	5	0.02
*Monte Lirio.....	.01	5	0.00
<b>Atlantic Section—</b>			
Gatun.....	.05	5	0.08
*Brazos Brook.....	1.12	4	1.14
Colon.....	.08	3	0.40
*Bocas del Toro.....	.34	3	0.49

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values, midnight to midnight.

†Standard rain gage—readings at 8 a. m. daily.

## New Schedule of Launch Service to Taboga.

Following the placing of the new gasoline launch *Taboga* in service, the schedule of launch sailings be-

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., February 6, 1916.)

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Feb. 4.....	Potomac (tug).....	American.....	United States Navy.....	Cristobal.....	Gamboa.....	Ballast.....	.....	.....	.....
Feb. 4.....	Barge No. 149.....	American.....	Panama Railroad Co.....	Cristobal.....	Balboa.....	Miscellaneous.....	.....	173	173
Feb. 4.....	Barge No. 150.....	American.....	Panama Railroad Co.....	Cristobal.....	Balboa.....	Miscellaneous.....	.....	173	173

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
Feb. 4.....	Windber.....	Pac. American Fisheries...	Baltimore.	Feb. 3.....	Puerto Rico.....	French Line.....	Bordeaux.
Feb. 7.....	Peron.....	French Line.....	St. Nazaire.				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Feb. 12.....	Coronado.....	Elders & Fyffes.....	Port Limon.	Feb. 11.....	Peron.....	French Line.....	St. Nazaire.
				Feb. 12.....	Coronado.....	Elders & Fyffes.....	Bristol & Kingston
					Fred's Luckenbach.....	Luckenbach Line.....	New York.
					Windber.....	Pac. American Fisheries...	
					A. J. West.....	Manila Import Company...	

## PORT OF BALBOA.

## ARRIVALS.

## DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
Jan. 31.....	Fair Oaks.....	Slade Lumber Company.....	Iquique.	Jan. 31.....	Fair Oaks.....	Slade Lumber Company.....	Los Angeles.
Jan. 31.....	Gisella.....	British Government.....	Victoria.	Feb. 2.....	Colusa.....	N. Y. & Pacific S. S. Co.....	Paleta.
Feb. 1.....	Bushnell.....	United States Navy.....	Seattle.	Feb. 1.....	Chumco.....	Pacific Steam Nav. Co.....	Guayaquil.
Feb. 1.....	Ucayali.....	Peruvian Line.....	Mollendo.	Feb. 1.....	Limari.....	South American S. S. Co.....	Valparaiso.
Feb. 2.....	Cape Corso.....	Cape Corso Steamship Co.....	San Francisco.	Feb. 1.....	Campora.....	East Asiatic Company.....	Talara.
				Feb. 2.....	Gisella.....	British Government.....	United Kingdom.
				Feb. 2.....	Jamaica.....	Pacific Steam Nav. Co.....	Buenaventura.
				Feb. 4.....	Manana.....	United States Navy.....	Chile.
				Feb. 4.....	Santa Cecilia.....	N. Y. & Pacific S. S. Co.....	Arica.
				Feb. 5.....	Cape Corso.....	Cape Corso Steamship Co.....	Coronel.
				Feb. 5.....	Salvador.....	Pacific Steam Nav. Co.....	Guayaquil.
				Feb. 6.....	Montano.....	Peruvian Line.....	Callao.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

Feb. 6.....	Pacific.....	Emery Steamship Co.....	San Francisco.				
Feb. 6.....	Manana.....	Pacific Steam Nav. Co.....	Guayaquil.				
Feb. 7.....	Inveric.....	Inveric Steamship Co.....	Seattle.				
Feb. 15.....	Paraiso.....	Slade Steamship Co.....	Los Angeles.				
Feb. 15.....	Leelanaw.....	Leelanaw Steamship Co.....	San Francisco.				
	Mana (yacht).....	W. Scoresby Routledge.....	San Francisco.				

\*Other than United Fruit Company's vessels and vessels in regular service to the United States.

between Balboa and Taboga Island has been revised, effective February 1, and is now as follows:

From Balboa—Daily, launch Taboga leaves for Taboga at 9.45 a. m. and at 5.30 p. m.

From Taboga—Daily, launch Taboga leaves for Balboa at 10.45 a. m. and at 6.45 p. m. The 10.45 a. m. trip from Taboga may be delayed at times to 2 p. m., under orders given by the Chief Quartermaster, the manager of the Hotel Aspinwall, or the Captain of the Port of Balboa.

On Mondays and days following holidays the launch Aspinwall will be used to supplement the regular daily service, leaving the dredge landing for Taboga at 5 a. m., and returning from Taboga at 6.30 a. m.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lakes.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the two weeks ending at midnight, Saturday, February 5, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alajuela	Gamboa.	Gatun Lake.	Miraflores Lake.
Sun., Jan. 23.....	126.80	92.00	65.86	60.53	10
Mon., Jan. 24.....	126.30	92.85	68.86	60.53	30
Tues., Jan. 25.....	126.70	92.95	68.86	60.53	04
Wed., Jan. 26.....	126.10	92.55	67.86	60.53	65
Thurs., Jan. 27.....	125.75	92.16	67.86	60.53	40
Fri., Jan. 28.....	125.70	92.80	68.86	60.53	04
Sat., Jan. 29.....	125.65	92.03	66.86	60.53	77
Sun., Jan. 30.....	125.60	92.01	66.86	60.53	61
Mon., Jan. 31.....	125.50	92.00	66.86	59.53	98
Tues., Feb. 1.....	125.45	91.92	66.86	46.53	08
Wed., Feb. 2.....	125.40	91.87	66.86	4.41	53.84
Thurs., Feb. 3.....	125.45	91.98	66.86	6.40	53.65
Fri., Feb. 4.....	125.45	92.00	66.86	6.40	53.65
Sat., Feb. 5.....	125.35	91.87	66.86	6.38	53.56

Heights of low water to nearest foot..... 125.0 91.0

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the Advance the voyage requires seven days.† Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*Note—The sailings on Monday, March 6 and April 3, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the sailings on March 6 and April 3.

When the vessel sailing Thursday is the Advance, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Zacapa.....	U. F. C. Feb.	2.....Feb. 9	
Allianca.....	P. R. R. Feb.	3.....Feb. 9	
Calumet.....	U. F. C. Feb.	5.....Feb. 13	
Carrillo.....	U. F. C. Feb.	9.....Feb. 16	
Colon.....	P. R. R. Feb.	10.....Feb. 16	
Tenadores.....	U. F. C. Feb.	12.....Feb. 20	
Santa Marta.....	U. F. C. Feb.	16.....Feb. 23	
Advance.....	P. R. R. Feb.	17.....Feb. 24	

## CRISTOBAL-COLON TO NEW ORLEANS.

Cartago.....	U. F. C. Feb.	13.....Feb. 18
Atenas.....	U. F. C. Feb.	13.....Feb. 20
Heredia.....	U. F. C. Feb.	20.....Feb. 25
Turrialba.....	U. F. C. Feb.	20.....Feb. 27
Coppename.....	U. F. C. Feb.	27.....Mar. 3
Abangarez.....	U. F. C. Feb.	27.....Mar. 5
Cartago.....	U. F. C. Mar.	5.....Mar. 10
Atenas.....	U. F. C. Mar.	5.....Mar. 12
Coppename.....	U. F. C. Mar.	12.....Mar. 17
Abangarez.....	U. F. C. Mar.	12.....Mar. 19

## CRISTOBAL-COLON TO NEW ORLEANS.

Cartago.....	U. F. C. Mar.	12.....Mar. 17
Atenas.....	U. F. C. Mar.	12.....Mar. 19





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, on this basis:

Subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Unloader Towers at Cristobal Coaling Plant Ready for Tests.

It is expected that the first tests of the four unloader towers of the new coaling plant at Cristobal can be made on the Navy collier *Jason*, which arrived at Cristobal on Tuesday, February 15, with a cargo of coal from Norfolk for the Panama Railroad Company.

#### Arrival of Barges for the Dredging Division.

Of the six barges purchased recently from towing companies operating in New York Bay, two have arrived from the United States in tow of Canal colliers coming from Norfolk and a third arrived at Cristobal on Tuesday, February 15, in tow of the Navy collier *Jason*, which sailed from Norfolk on February 6. The barges which have arrived are three of the four purchased from the Moran Towing and Transportation Company, of New York.

Immediately after arrival the barges were taken in tow by Canal tugs and added to the dredging fleet in Gaillard Cut.

#### Vessels Coaling at Canal Terminals.

The steamship *Polyphenus*, carrying a general cargo amounting to 8,240 tons from San Francisco to London, arrived at Balboa on February 12, coaled, and cleared for Colon on the next day. The master stated that it had not been his expectation to pass through the Canal, his call at Balboa being for coal and supplies.

Two sailing yachts, equipped with auxiliary motors, arrived at Balboa during the past week, and are waiting for transit through the Canal. The first to arrive was the *Adrea*, coming from Amapala on the way to New

York, and the second was the *T. Ellis*, bound from Los Angeles to New York.

The yacht *Wisdom* arrived at Cristobal on February 12, from Limon, seeking transit through the Canal. The steamship *Windber*, which arrived at Cristobal from Baltimore on February 5, on the way to South Bellingham, Wash., is lying in the bay awaiting the opening of the Canal, though advice has been cabled to her owners that no assurances can be given as to the probable time of opening. The *Windber* is operated by the Pacific American Fisheries, and her operators wish to despatch her to the Bering Sea for the Alaskan canning season by the end of March.

The *Windber* was one of the vessels which arrived at Balboa shortly after the closing of the Canal, and she completed the voyage to Baltimore by way of the Strait of Magellan, sailing from Balboa on October 25. The *Edison Light*, which had arrived at Balboa shortly before the *Windber* and was also on the way to Baltimore, waited for transit through the Canal, which she made on December 23, and reached Baltimore one day earlier than the *Windber*.

#### Excavation from the Cut during the Past Week.

Excavation at the bases of the Culebra slides, north of Gold and Contractor's Hills, during the week ending at midnight of Monday, February 14, amounted to 255,130 cubic yards. In addition, 17,531 cubic yards were rehandled by the pipeline suction dredge No. 86; 30,144 cubic yards by the seagoing suction dredge *Culebra*; and 2,879 cubic yards by the Belgian ladder dredge No. 5, making a total of rehandled spoil of 50,545 cubic yards.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	84,260
Gamboa.....	15-yard dipper.....	66,090
Paraiso.....	15-yard dipper.....	56,920
Corozal.....	Ladder.....	47,840
Culebra.....	Seagoing suction.....	30,144
No. 86.....	Pipeline suction.....	17,531
No. 5.....	Belgian ladder.....	2,870

The average aggregate output of the dredges in the Cut during the 16 weeks preceding that ending at midnight of February 14 was 257,035 cubic yards, the total amount of primary excavation during that period (since October 19) having been 4,112,550 cubic yards. This has been an average of 36,719 cubic yards for each of the 112 days. The record excavation in one day by the fleet in the Cut is 48,622 cubic yards.

#### French Line to Discontinue Reduced Rates for Canal Employees.

Advice has been received from the Colon office of the Compagnie Generale Transatlantique that on and after February 29, 1916, the company will discontinue the granting of reduced rates to employees of The Panama Canal and the Panama Railroad Company.

#### GASOLINE STORED IN BULK.

##### Two Hundred Thousand Gallons to Be Placed in Canal Storage Tank at Balboa.

The first shipment of gasoline in bulk for The Panama Canal, consisting of 2,380 barrels, or approximately 123,700 gallons, arrived at Balboa in the morning of Wednesday, February 16, on the tank steamship *J. A. Moffett* of the Standard Oil Company.

The remainder of the cargo of the *Moffett* and of barge No. 93, which arrived with her, is crude oil.

The gasoline is being discharged into the new gasoline storage tank erected by The Panama Canal on a site adjoining the tank farm at Balboa. A second shipment is expected in March, of about 100,000 gallons. No gasoline will be stored in the recently erected storage tank at Mount Hope for the present, as the demands from the Atlantic end will be met by drafts on the storage at Balboa.

Gasoline has been kept on hand, before this, in drums. The present stock in drums is about a five months' supply.

There are now stored at Balboa, available for sale to steamship lines, gasoline, crude oil, and Diesel oil. They are handled at present by The Panama Canal, the Union Oil Company of California, and the Panama Agencies Company, the tanks of other lessees of lots not being ready for service. At the Atlantic entrance oil is handled by the Huasteca Oil Company and The Panama Canal.

The conditions governing the storage of fuel oil at the Canal terminals have been set forth in the following circular letters, which were sent to various oil companies and others interested in the situation:

1. The following information is issued for the guidance of all concerned relative to the erection of tanks and the storage and handling of fuel oil by individuals and companies at the Atlantic and Pacific terminals of The Panama Canal:

2. The grade of oils brought to the Isthmus for storage shall be restricted to Diesel engine oil, and fuel oils of the character generally known in the oil trade as "topped" oils. They shall not be heavier than 16 degrees Baumé at 60 degrees Fahrenheit, and the flash point, as determined by the Pensky-Martins closed-cup tester, Bureau of Mines standard, shall not be lower than 150 degrees Fahrenheit. The limit fixed on the gravity of the oil arises from the desire to limit the minimum rate of flow in the gravity flow oil lines from storage tanks to handling plant. At the Pacific terminal it may be possible to make special arrangements as regards the design of the pipe lines between tanks and pumping plant in individual cases to permit the handling of slightly heavier oils than the above. At the Atlantic terminal no variation will be practicable. The safety of the tank farms will not permit any variation from the flash point fixed above. Storage of gasoline,



kerosene, or other distillates in bulk by individuals and companies will not be permitted.

3. The general location of the fuel oil berths, handling plants, and tank farms is shown on the following drawings: Atlantic terminal, plan No. 4198; Pacific terminal, plan No. 4199.

4. Lots for the erection of tanks will be leased in accordance with a revocable license issued by The Panama Canal. A blank form of the revocable license is appended below. In general, the tank lots at the Atlantic terminal are 300 feet square and the annual rental is \$300. At the Pacific terminal, on account of the more restricted area, the tank lots are 280 feet in diameter, for which the annual rental is \$300. The above lots will accommodate tanks up to 55,000 barrels capacity. Before these rules were established, a few smaller lots were leased at the Pacific terminal. These smaller lots are 230 feet in diameter, and will accommodate tanks up to 37,500 barrels capacity. The rental of these smaller lots is \$200 per annum.

5. One tank only can be erected on a lot. Each tank shall be located in the center of the lot.

6. All material and labor, or work of any nature, required in connection with the installation of tanks, including the grading of tank sites, preparation of tank foundations, fire wall construction, installation of water connections for test purposes, and for drainage inside of fire walls, shall be supplied by and at the expense of the licensee. The water lines furnished by The Panama Canal are shown on drawings Nos. 4197 and 4160-B.

7. Tank roofs must form a tight metallic connection with the sides of the tank, and as a protection against lightning a metallic connection must be made from tank to ground outside of tank foundations. Tank roofs must be equipped with manhole cover plates, and vents protected with 30-mesh copper screenings. Details of these requirements are shown on Panama Canal drawing No. 4195.

8. All oil pipe lines and necessary connections between storage tanks and handling plant shall be installed by and at the expense of the licensee. The route of the lines and the diameter of the pipe which the licensee will be allowed to install will be designated by The Panama Canal. In the majority of cases the lines will be 12-inch diameter. Connections at the plant manifolds shall be made as shown on Panama Canal drawing No. 4195.

9. Requirements as to fire walls for tanks of the Pacific terminal tank farm are shown on drawing No. 4197. Requirements as to fire walls for tanks of the Atlantic terminal tank farm are described in Panama Canal circular, dated March 11, 1915, to licensees of lots at the Atlantic terminal, a copy of which is appended.

10. All oils will be handled to and from storage through The Panama Canal's pumping plant, for which service a charge, based upon the actual cost of such service to The Panama Canal and subject to such change as may be ordered from time to time, will be made. The present rate is four cents per barrel of 42 U. S. gallons, each way, to and from storage.

11. Authorized representatives of The Panama Canal shall have access at all times to any tanks or other equipment pertaining to the storage and handling of oils.

12. All valves at the plant manifolds, including valves connecting private lines to

manifolds, shall be operated exclusively by The Panama Canal. The Panama Canal assumes no responsibility for the operation of any valve between the valves connecting private lines to the plant manifold and the tanks of licensees.

13. While The Panama Canal does not assume any responsibility for the safety or policing of tank farms, the Police and Fire Division of The Panama Canal will, in case of fire or other contingency, render such assistance as is practicable.

14. Licensees shall be subject to any and all rules or regulations that may be issued at any time by the Governor of The Panama Canal, relative to oil storage or the operation and maintenance of equipment pertaining thereto. This covers any future changes or improvements which, in the opinion of The Panama Canal, may be considered necessary.

15. The Panama Canal can not act as resident agent of any licensee in connection with the sale of oils.

16. On request, sales of oil from Panama Canal tanks to licensees to complete their deliveries, made necessary by shortage in licensees' stocks, will be made when practicable. The regular prices, without reduction, shall apply to all such sales.

17. Under the present arrangement between the United States and the Republic of Panama, known as the Taft Agreement, fuel oil intended for sale to seagoing vessels is admitted free of duty at the Canal terminal ports. Any of this oil that is sold for delivery or use in Panamanian territory may be liable for payment of duty to Panama.

18. The following drawings, referred to above, may be obtained upon application to this office or to the Washington office of The Panama Canal:

4199, General plan, Pacific terminal; 4198, General plan, Atlantic terminal; 4197, Detail of tank farm, Pacific terminal; 4160-B, Detail of tank farm, Atlantic terminal; 4195, Details of pipeline connections at manifolds and vents, manholes, and lightning protectors for tanks.

The following is the form of the revocable license issued to holders of lots in the terminal tank farms:

License is hereby granted to....., a corporation organized under the laws of the State of....., represented by....., to occupy an area of land at....., Canal Zone, said area being described as follows:

Lots..... and..... at the site reserved for oil fuel storage, as shown on Panama Canal blueprint file....., dated....., which lots measure approximately..... square feet each, or a total of..... square feet for the..... lots.

The purpose of this license is to permit the said..... company to erect and maintain tanks for fuel oil storage purposes, and it is granted, on

the condition that the said..... company will construct and maintain such tanks in accordance with the building, sanitary, and police rules and regulations and other laws of the Canal Zone, and that the said..... company will pay the sum of..... dollars (\$.....) United States currency, annually, to the Panama Railroad Company or The Panama Canal for the use of said area from the first day of....., 191....., until this license is terminated.

Nothing in this license shall be construed as exempting the licensee from the payment of any taxes lawfully assessed against it or against any improvements that it may construct upon said area.

The license may be revoked at any time by authority of the President of the Panama Railroad Company or the Governor of The Panama Canal, upon written notice to the licensee, and in that event the licensee agrees to remove all improvements from said area within a reasonable time at its own expense, and upon its failure to do so, the Panama Railroad Company or The Panama Canal may remove such improvements at the cost of the licensee, to be recovered in a court of competent jurisdiction in the Canal Zone.

#### Land Agent.

Following is the notice to licensees of lots at the Mount Hope fuel oil tank farm, Atlantic terminal, Panama Canal, referred to above:

In view of the high cost and difficulty of constructing adequate fire walls of earth about each tank of the Atlantic terminal tank farm, as a measure of protection against fire, and to form a basin of sufficient capacity to retain, if necessary, the entire contents of the tank, it will be satisfactory for the licensees to grade off their lots to the extent necessary for the tank foundation, and to perform such other work as is described generally hereinafter:

The minimum elevation of each tank will be fixed by The Panama Canal. Material removed in grading tank site will be used so far as necessary in throwing up an earth wall around the tank. The height of the wall will depend upon the location. Where the slope of the ground is too steep, this wall may be omitted. Between this wall and the tank a ditch will be excavated to turn any oil escaping from the tank into certain valleys or depressions in the immediate vicinity of the tank. These ditches should be of sufficient cross-section and have such a slope as will enable them to perform their functions suitably. It is considered that these ditches should be not less than four feet deep and eight feet wide at the top. Their size will depend upon the condition at each tank.

Where the topography in the valley or depression selected as a catch basin to retain the contents of the tank is such as to result in any oil which might be spilled flowing onto or through territory which it is desired to protect, a small earth fill will be required across the lower end of the valley or depression in question. The cost of construction of this fill will be prorated between the licensees of the tanks which would drain into this valley or depression.

The Panama Canal will determine the particular valley or depression to which the oil from any tank may be drained, and will determine the diameter and approximate route of all pipelines between storage tanks and the Panama Canal oil handling plants. A general plan, No. 4160-B, gives these data for a number of lots, and licensees may proceed with grading and preparation of lots for their tanks in general accordance therewith as soon as desired.

#### Deceased Employees.

Name.	Check No.	Native of	Isthmian Residence.	Employed by	Date of death.
Edwards, James.....	60780	Barbados.....	Panama.....	Term. Con. Div.	Feb. 2, 1916.
Graves, Preston.....	35935	Barbados.....	Pedro Miguel...	Pacific Locks...	Feb. 8, 1916
Hogan, John.....	22471	Montserrat.....	Panama.....	Dredging Div....	Feb. 7, 1916.
Quinton, Ralph.....	23092	Barbados.....	Culebra.....	Dredging Div....	Feb. 5, 1916.
Wynter, Fred.....	89923	Jamaica.....	Colon.....	P. R. R. Div....	Feb. 5, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## RECEIPTS AND EXPENSES.

Small Levy of Tolls in December.—Deficit for Fiscal Year Amounts to \$1,855,307.33.

The complete closure of the Canal which began on September 18 and continued through October and November was interrupted in December, when it became possible to handle through the Canal the smaller vessels which had been waiting at the entrances for passage. The tolls collected in December for these vessels, nine in number, amounted to \$10,732.40. As the average of tolls on the 1,519 vessels passing through the Canal to October 1 was \$3,788.46 per ship, it is seen that the vessels making the transit in December had dues less than a third of the normal.

Of the three vessels making the transit from

the Atlantic, only one, the yacht *Adrea* with tolls amounting to \$93.60, contributed to the December collections. The *Acajula* had paid her tolls on September 18, the day she went from the Atlantic entrance to Gatun Lake, where she lay at anchor while waiting for passage through the Cut; and no tolls were levied on the cable ship *Cyrus W. Field*, a Government ship engaged in Canal work. The vessels from the Pacific, which paid tolls aggregating \$10,732.40, were the *Sultana*, *Newport*, *San Diego*, *Edison Light*, *Navajo*, *Admiral*, and *Newton*, though the *Newton*, which is larger than the others and has a net Canal tonnage of 3,579, did not pass the slides until January 6.

The expenses charged to operation and

maintenance during December amounted to \$580,253.71, leaving a net loss in this account of \$369,427.71 for the month. This increased the deficit for the fiscal year to \$1,855,307.33.

The costs of dredging in the Cut amounted to 53 per cent of the total operation and maintenance expenses in December.

"Operation and maintenance" is supposed to cover the cost of operations designed to keep the Canal open and in order and necessary to the work of handling ships through; to which is added a proportion of overhead expenses (approximately a third of the total overhead expense of the Canal organization), being costs of sanitary work, civil government, and administration. A summary of the charges in December is given below:

ITEMS.	December.	November.	December, 1914.	Fiscal Year to Date.	
				1916.	1915.
<b>Marine Division:</b>					
Admeasurement of vessels.....	\$287.45	\$407.48	\$937.59	\$4,547.94	\$4,807.06
Local inspection.....	568.21	537.57	308.43	2,211.12	1,786.97
Aids to navigation.....	4,602.42	7,440.40	5,657.22	27,708.85	21,938.19
Pilotage.....	243.28	.....	5,881.12	20,513.60	21,766.82
Operation of harbor tug—Balance.....	6,012.56	3,292.75	.....	22,260.62	.....
<b>Total, Marine Division.....</b>	<b>11,713.92</b>	<b>11,678.20</b>	<b>10,784.36</b>	<b>77,239.13</b>	<b>50,299.04</b>
<b>Lock operation and maintenance—</b>					
<b>Gatun Locks:</b>					
Superintendence.....	1,228.71	1,302.37	1,571.87	6,924.88	8,964.05
Operation.....	4,216.25	6,074.99	13,252.74	48,191.61	54,182.67
Maintenance of machinery and equipment.....	8,829.22	7,796.61	6,295.32	105,908.28	101,637.30
Maintenance of structure.....	1,882.71	1,413.91	4,072.18	6,433.42	13,833.91
Miscellaneous supplies and expenses.....	46.22	154.84	386.44	1,132.67	1,721.30
<b>Total, Gatun Locks.....</b>	<b>13,203.11</b>	<b>16,742.72</b>	<b>25,578.55</b>	<b>168,590.86</b>	<b>110,339.23</b>
<b>Gatun Spillway:</b>					
Operation.....	131.93	115.19	2.90	697.52	584.72
Maintenance of machinery and equipment.....	816.59	229.40	1,621.80	2,007.58	3,337.51
Maintenance of structure.....	.....	.....	1,194.23	104.52	1,809.14
<b>Total, Gatun Spillway.....</b>	<b>948.52</b>	<b>344.59</b>	<b>2,818.93</b>	<b>2,809.62</b>	<b>5,731.37</b>
<b>Pedro Miguel Lock:</b>					
Superintendence.....	1,296.12	1,404.53	1,291.02	8,478.75	6,471.62
Operation.....	2,257.40	2,733.92	6,641.86	27,108.72	43,944.65
Maintenance of machinery and equipment.....	3,827.21	3,642.13	3,866.04	30,188.66	18,811.44
Maintenance of structure.....	892.91	1,542.11	3,468.16	9,181.04	8,030.26
Miscellaneous supplies and expenses.....	194.24	174.31	103.96	1,211.67	810.06
<b>Total, Pedro Miguel Lock.....</b>	<b>8,477.88</b>	<b>11,897.00</b>	<b>15,371.04</b>	<b>76,871.84</b>	<b>78,058.03</b>
<b>Pedro Miguel Dam:</b>					
Maintenance.....	.....	.....	.....	.....	42.00
<b>Miraflores Locks:</b>					
Superintendence.....	1,287.80	1,320.65	1,806.49	8,175.83	8,199.46
Operation.....	3,742.08	3,345.41	9,245.88	34,823.77	55,595.78
Maintenance of machinery and equipment.....	4,048.78	5,166.71	11,106.38	29,400.69	29,136.97
Maintenance of structure.....	718.98	1,160.77	2,848.16	8,932.84	9,264.81
Miscellaneous supplies and expenses.....	189.65	269.76	339.05	1,407.85	1,622.76
<b>Total, Miraflores Locks.....</b>	<b>9,987.29</b>	<b>11,263.30</b>	<b>25,345.96</b>	<b>79,740.98</b>	<b>103,819.78</b>
<b>Miraflores Spillway and East Dam:</b>					
Operation.....	113.44	6.97	.....	166.50	634.95
Maintenance of machinery and equipment.....	532.97	325.08	166.00	1,135.38	7,106.18
Maintenance of structure.....	9.58	184.05	142.12	328.91	290.02
<b>Total, Miraflores Spillway and East Dam.....</b>	<b>655.99</b>	<b>516.10</b>	<b>308.12</b>	<b>1,630.79</b>	<b>8,031.15</b>
<b>Miraflores West Dam:</b>					
Maintenance.....	70.26	30.80	.....	340.21	377.17
<b>Total, lock operation and maintenance.....</b>	<b>33,343.05</b>	<b>40,794.51</b>	<b>69,422.60</b>	<b>329,984.30</b>	<b>306,398.73</b>
<b>Dredging:</b>					
Atlantic entrance.....	534.73	624.22	19,755.11	5,939.39	59,349.51
Gatun Lake.....	.....	.....	.....	.....	.....
Gaillard Cut.....	307,187.32	334,656.53	188,628.56	1,613,910.19	642,898.93
Miraflores Lake.....	.....	.....	.....	.....	.....
Pacific entrance.....	.....	.....	5.75	9,286.43	4,978.80
<b>Total, dredging.....</b>	<b>307,722.05</b>	<b>335,280.75</b>	<b>208,389.42</b>	<b>1,629,136.01</b>	<b>707,227.24</b>
<b>Gatun Dam, maintenance:</b>					
Removal of floating obstructions.....	1,109.32	1,723.05	3,400.52	11,193.03	10,781.56
Gatun-Mindí levee, maintenance.....	1,761.06	1,683.91	992.34	10,374.10	6,128.89
Colon West Breakwater, maintenance.....	.....	237.98	40.77	237.98	22,241.50
Colon East Breakwater, maintenance.....	15,993.16	17,405.78	.....	41,266.31	.....
Naos Island Breakwater, maintenance.....	.....	.....	5.66	58.45	461.93
Damages to vessels in locks.....	.....	125.10	119.07	1,328.64	192.23
Damages to vessels in Canal.....	.....	.....	.....	.....	.....
Operation of floating derricks.....	12,127.21	4,178.62	.....	16,352.17	.....
Maintenance of transportation tracks.....	1,350.82	1,778.89	7,020.36	9,327.06	15,367.85
<b>Total, operation and maintenance.....</b>	<b>385,120.59</b>	<b>414,976.79</b>	<b>300,175.10</b>	<b>2,126,497.18</b>	<b>1,119,098.97</b>
<b>Proportion of overhead expenses.....</b>	<b>195,133.12</b>	<b>228,968.42</b>	<b>141,734.99</b>	<b>1,159,292.15</b>	<b>633,487.36</b>
<b>Total.....</b>	<b>580,253.71</b>	<b>643,945.21</b>	<b>441,910.09</b>	<b>3,285,789.33</b>	<b>1,752,586.33</b>
<b>Tolls earned.....</b>	<b>10,826.00</b>	<b>.....</b>	<b>407,914.80</b>	<b>1,430,482.00</b>	<b>1,505,463.56</b>
<b>Tolls earned in excess of expenses.....</b>	<b>.....</b>	<b>.....</b>	<b>.....</b>	<b>.....</b>	<b>.....</b>
<b>Expenses in excess of tolls earned.....</b>	<b>569,427.71</b>	<b>643,945.21</b>	<b>33,995.29</b>	<b>1,855,307.33</b>	<b>247,122.77</b>



## CANAL TRIPS BY LAUNCH.

Facilities for Sightseeing and Pleasure Trips  
Afforded by Marine Division.

The Marine Division has made arrangements to furnish launches for sightseeing or pleasure trips over various parts of the Canal and in the bays at Balboa and Cristobal. Pilot launches will be used for parties of 12 persons or less, at the rate of \$5 for the first hour and \$2.50 for each succeeding hour or fraction; and for larger parties, containing as many as 40 people, the launches *Margarita* and *Taboga* are available, at Cristobal and Balboa, respectively, for \$7.50 for the first hour and \$5 for each succeeding hour or fraction.

The following is a list of some of the trips which can be taken, with the approximate time required for each of them, and the approximate cost for the use of the two types of launch:

TRIP	*Number of hours required.	*Cost for pilot launch.	*Cost for 40-pass g'r launch.
About Cristobal harbor.....	2	\$7.50	\$12.50
Cristobal to Gatun Locks and return, through French and American Canals.....	2	7.50	12.50
Cristobal to Fort San Lorenzo.....	4	12.50	22.50
Cristobal to Porto Bello.....	4	12.50	22.50
Cristobal to Gatun Spillway, via Fort San Lorenzo.....	7	20.00	37.50
Through Gatun Lake, from Gatun Locks to Gamboa.....	4	12.50	22.50
Through Gatun Lake and Gaillard Cut from Gatun Locks to Pedro Miguel Lock.....	7	20.00	37.50
Through Gaillard Cut, Gamboa to Pedro Miguel Lock.....	3	10.00	17.50
Side trips up Chagres River in connection with other trip.....	2	5.00	10.00
About Balboa inner harbor.....	1	5.00	7.50
Balboa to Miraflores Locks.....	2	7.50	12.50
Balboa to Taboga Island.....	2	7.50	12.50
Around Panama Bay.....	4	12.50	22.50

\*Approximate.

Applications for launch service for any of the trips may be made to the office of the Captain of the Port, Cristobal or Balboa. The request for service may be made by telephone, but should reach the office not later than 5 o'clock in the afternoon of the day preceding that on which the trip is to be taken. Guests at the Washington and Tivoli Hotels may ask the clerk in the hotel office to arrange trips for them, and have the cost charged on their account with the hotel. Others will make a deposit in advance to cover the cost of the trip. This deposit can be made with the deputy collector or Captain of the Port at Cristobal, the Collector at Balboa Heights, the Captain of the Port at Balboa, the agent of the Panama Railroad at Gatun or Gamboa, or the timekeeping foreman in the office of the Dredging Division at Paraiso. A memorandum receipt covering the deposit will be issued pending the completion of the service, and if a refund is due the depositor it will be made upon application to the official with whom the deposit was placed.

#### The "Santa Clara" Salvaged.

Advice has been received that the *Santa Clara*, belonging to W. R. Grace & Company, which ran on a reef in Smyth Channel, Strait of Magellan, early in January, has been floated after the discharge of 2,000 tons of cargo and is on her way to New York for the permanent repairs made necessary by the accident. The *Santa Clara* is one of the Atlantic and Pacific Line ships which were in regular service through the Canal prior to its closing in September.

#### Civil Service Examinations.

An examination for the position of copyist marine engine and boiler draftsman (male) in the Navy Department, to fill vacancies as they occur at any navy yard or naval establishment of the United States, will be held about April 16, 1916 (date to be left blank in applications).

The entrance salaries range from \$2 to \$3.28 per diem.

The opportunity for appointment of qualified eligibles is excellent, as difficulty has been experienced in securing a sufficient number of eligibles to meet the needs of the service.

Applicants are referred to announcement No. 187, posted at all clubhouses and post-offices on the Isthmus, giving fuller information concerning this examination.

Applications will not be received after March 22, 1916.

An examination for the position of stenographer and typewriter, The Panama Canal service, will be held in the board room, Administration Building, Balboa Heights, about April 2, 1916 (date to be left blank in applications). The local board has received authority from the Civil Service Commission to admit women to this examination.

The spring edition of the manual of examinations has arrived and is ready for distribution.

Announcement will be made later of other examinations to be held in April.

Applications should be secured from and filed with the office of the Board of Civil Service Examiners, Balboa Heights, C. Z. Applications will not be received after March 8; this date may be changed if necessary. A card of admission will be sent to those found eligible to be admitted, upon the receipt of the questions from the Civil Service Commission.

In answer to questions as to residence, applicants must show residence in a State or Territory of the United States, and county thereof, up to the time of filing application, a ruling having been made that employees of The Panama Canal can claim residence in the United States while temporarily employed on the Isthmus.

#### American Day at Panama National Exposition.

Washington's Birthday, February 22, will be celebrated as American Day at the Panama National Exposition. A committee of Americans in Panama and the Canal Zone is co-operating with the management of the exposition in the preparation of the program, which, beginning at 9 in the morning, will include a military parade, with at least 2,000 of the United States troops from Canal Zone garrisons, a parade of school children, athletics, trap-shooting, band concerts, addresses, fireworks, etc. On account of the close relations between the Republic of Panama and the United States, and the numbers of Americans already identified with the business and agricultural life of Panama, the committee in charge places emphasis on the opportunity which the American Day will afford Americans on the Canal Zone to observe something of the progress of the country, as well as of the extent of its undeveloped resources, as exemplified in the exhibits at the exposition.

#### Congress on Christian Work in Latin America.

A "Congress on Christian Work in Latin America," representing Protestant churches of North, Central, and South America and

Europe, began its sessions at the Hotel Tivoli, Ancon, on Thursday, February 10. Approximately 420 delegates and visitors, the latter having semi-official standing in the congress, are in attendance. The congress is technical in nature, discussing the previously prepared and printed reports of eight commissions, dealing with various features of their problems in extending missionary work in Latin America.

#### Laying of Cornerstone of American Bible Society's Building.

A cornerstone for the American Bible Society's building in Cristobal is to be laid on Sunday, February 20, under the auspices of members of the Congress on Christian Work in Latin America, now in session at the Hotel Tivoli. The walls of the building have advanced above the height at which cornerstones are usually laid, but the forms were so placed as to leave space in the wall at a corner, in which the stone can be inserted. The cornerstone has been made of concrete, poured on February 14, and will contain two copper boxes, in one of which appropriate documents in English will be inserted, the other to contain similar documents in Spanish. One face of the stone bears the inscription, "American Bible Society—MCMXVI" and an adjoining face the inscription, "Sociedad Biblica Americana—1916."

Construction of the building is advancing satisfactorily and it is expected that it will be practically completed in May. By request of the authorities of the society, work on the building on Sundays has been discontinued. An extension of time equivalent to one day for each Sunday occurring in the period set originally for completion has been granted to the contractors.

#### Bound Volumes of The Canal Record.

Five hundred copies of Volume VIII of THE CANAL RECORD, containing the 52 issues from August 26, 1914, to August 18, 1915, inclusive, bound in buckram, have been received on the Isthmus from Washington. After the distribution of official copies has been made, about 300 copies will be available for sale, at \$2.50 per copy.

The volume is also for sale at the same price by the Washington office of The Panama Canal, and persons in the United States or foreign countries who may be interested in its records of the first year of commercial operation of the Canal, and other information of importance to shipping interests and commercial bodies, may make application to the Washington office.

Bound volumes I to VIII, covering the period of Canal work, from September 4, 1907, are sold for \$2.50 per volume, and applications may be directed to The Panama Canal, Balboa Heights, Canal Zone, or Washington, D. C.

#### Sailing of the "Ancon."

The sailing of the steamship *Ancon* of the Panama Railroad Steamship Line for New York has been set for Saturday, February 19, at 3 p. m., from Pier 9, Cristobal. She will carry first-class passengers.

#### Visit of the "Cleveland."

The third-class cruiser *Cleveland* of the United States Navy arrived at Balboa from Corinto on Sunday, February 13, and will probably return on Thursday, the 17th.



## WEATHER CONDITIONS, CANAL ZONE, JANUARY, 1916.

The rainfall for the month was above normal at eight stations, and deficient at 10 stations. Totals ranged from 0.04 inches at the Indio station on the upper Chagres to 2.33 inches at Colon. The maximum amount of precipitation recorded on any one day was 1.63 inches, at Colon on the 17th. Light showers occurred quite generally throughout the Zone on the 14th, 17th, 18th, and 31st of the month.

The estimated rainfall over the Gatun Lake watershed was 64 per cent below the average and over the Chagres River basin above Alhajuela, 76 per cent below the average.

The air temperature was approximately normal on the Pacific coast and one degree Fahrenheit above normal on the Atlantic. The relative humidity, the temperature of the sea water, and the evaporation were above normal on both coasts, while the atmospheric pressure and daytime cloudiness were above normal at Balboa Heights, and below the average at Colon. The wind movement was deficient at Balboa Heights and above the average at Colon.

No fogs were observed at either coast station and the few fogs that were observed at interior stations were dissipated by 6 a. m.

Elevations of Gatun Lake, in feet above mean sealevel, were as follows: Mean for the month, 86.59; maximum, on the 18th and 19th, 86.75; minimum, on the 31st, 86.44; evaporation from the lake surface, 6,230 inches.

The following is a summary of the climatological conditions recorded at the Atlantic and Pacific coast stations:

STATIONS.	Pressure (reduced to mean of 24 hours.)	Temperature.					Mean relative humidity.	Precipitation.				Wind.				
		Mean.		Maximum.	Date.	Minimum.		Date.	Total inches.	Station average.	Days of .01 inch or more.	Total movement (miles).	Prevailing direction.	Max. velocity in miles.	Direction.	Date.
		Mean.	Maximum.													
Colon .....	29.880	81.0	86	Jan. 9	74	Jan. 27	86	2.36	3.92	11	11,323	N.E.	33	N.	Jan. 23	
Balboa Heights . . .	29.865	80.3	90	Jan. 5	68	Jan. 28	87	1.41	1.04	11	5,488	N.	25	N.	Jan. 9	

\*Formerly Ancon.

## January Rainfall for Three Years.

STATIONS.	1914	1915	1916	Station average.	Years of record.	Rainy days, 1916.
<i>Pacific Section.</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>		
Balboa .....	.30	2.23	1.15	1.11	17	13
Balboa Heights .....	.32	2.12	1.41	1.04	18	11
Miraflores .....	.57	1.67	2.19	1.89	8	9
Pedro Miguel .....	1.27	1.03	1.71	1.12	9	7
Rio Grande .....	1.05	.57	.68	1.27	12	6
<i>Central Section.</i>						
Culebra .....	.38	1.33	1.30	1.65	26	6
Camacho .....	.46	.61	1.42	1.13	10	5
Empire .....	.34	.67	1.07	.78	11	1
Ganboa .....	.24	1.74	1.72	1.72	5	5
Juan Mina .....	.44	1.06	1.46	.69	6	0
Alhajuela .....	.09	.86	.66	.109	17	8
Vigia .....	.28	.39	.22	.82	8	7
Erijoles .....	.81	3.63	1.32	2.06	5	3
Trinidad .....	1.57	2.46	2.03	2.90	9	8
Monte Lirio .....	.83	2.54	.75	2.86	9	2
<i>Atlantic Section.</i>						
Gatun .....	1.63	1.80	1.05	3.31	12	13
B.azos Brook .....	.90	2.96	1.50	3.22	10	11
Colon .....	1.35	3.41	2.33	3.92	46	11
Bocas del Toro .....	7.48	2.37	13.04	10.99	8	23

## Additions to the Panama Canal Library.

The following is bulletin No. 3 of recent additions to the Canal library at Balboa Heights:

## GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS, ETC.

Commonwealth of Massachusetts, Analysis of the present foreign trade of the United States. Bulletin No. 3 of the Directors of the Port of Boston. 1916.

Medical Association of the Isthmian Canal Zone, Proceedings of the Medical Association of the Isthmian Canal Zone for the half-year April, 1914, to October, 1914. Vol. VII, Part I.

West Coast Lumberman, Standard classification, grading and dressing rules for Douglas fir, spruce, cedar, and Western hemlock products, adopted by the West Coast Lumber Manufacturers' Association, 1915.

West Coast Lumber Manufacturers' Association, Structural properties of Douglas fir and longleaf pine, June, 1915.

Bureau of Education, Report on the work of the Bureau of Education for the natives of Alaska, 1913-14, Bulletin No. 48 of the Bureau of Education, 1915.

Bureau of Mines, Manufacture and uses of alloy steels. Bulletin No. 100. By Henry D. Hibbard, 1915.

Bureau of Mines, Mine ventilation stoppings, with especial reference to coal mines in Illinois. Bulletin No. 99. By R. Y. Williams, 1915.

Bureau of Mines, Sampling and analyzing flue gases. Bulletin No. 97. By Henry Kreisinger and F. K. Ovitiz, 1915.

Department of Agriculture, Shortleaf pine—Its economic importance and forest management. Bulletin No. 308. By Wilbur R. Mattoon, forest examiner, 1915.

Division of Schools, The Panama Canal, Manual and course of study, Canal Zone elementary schools. 1915. United States Public Health Service, Notifiable diseases. Prevalence during 1914 in cities of 10,000 to 100,000, 1915

United States Public Health Service, prevalence of pellagra. Its possible relation to the rise in the cost of food. Reprint No. 368 from the Public Health Reports. By Edgar Sydenstricker, 1916.

United States Public Health Service, Strychnine sulphate. Its effect on California Valley quail. Reprint No. 314 from the Public Health Reports. By C. C. Pierce and M. T. Clegg, 1916.

MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.

Wm. Cramp & Sons Ship and Engine Building Company, Booklet for using Parsons' white brass.

Crane Company, Catalogue No. 40 of steam goods, etc.

De La Vergne Machine Company, Bulletin No. 152, on ammonia condensing.

Elwell-Parker Electric Company, Catalogue of electric storage battery industrial trucks.

Follett Time Recording Company, Follett time stamps and time-recording stamps.

Goben Manufacturing Company, Pamphlet describing "Galvanum," for protecting galvanized iron.

Charles Hess Company, Instalaciones sanitarias para plomeria. Lamparera electrica.

Huttig Sash and Door Company, Catalogue of sash, doors, mouldings, and general millwork.

Hyde-Murphy Company, Catalogue and price list of wood mantels and fireplace fixtures. Catalogue of sash, doors, and blinds, etc. Folder No. 12 on veneered doors. Folder of Sectionfold partitions. Catalogue No. 310 of Universal air glass.

John Jacques and Son, Shears and paper box machinery.

Laclede-Christy Clay Products Company, Booklets and circular showing size of fire brick.

Meinecke & Company, Advanced specialties for hospitals.

Andrew J. Morse & Son, Diving apparatus and other submarine appliances. The Invinible nozzle. Fire department supplies.

Phoenix Caster Company, Anti-friction casters catalogue.

Shapleigh Hardware Company, General hardware catalogue No. 200.

J. Stevens Arms and Tool Company, Armas de Fuego "Stevens," Catalogue in Spanish, with export quotations in English.

Stow Flexible Shaft Company, Catalogue of portable tools and machinery. Leaflet of electric portable tools. Leaflet of track grinding equipment. Leaflet of Schoof's handy drilling, reaming, tapping, and grinding outfit.

H. B. Underwood & Company, Catalogues of portable tools for railway repair and machine shops.

Universal Winding Company, General catalogue of winding machines. Pamphlet of new type coil winder.

West Coast Lumber Manufacturers' Association, Comparative strength values for structural timbers. Leaflet.

Westinghouse Air Brake Company, Supplement to part catalogue No. 3219-1, November, 1915, on improved triple-valve test rack. Portable brake test truck.

Wickes Brothers, Circulars on angle bending rolls; medium-duty plate bending rolls, pyramid type; combined bending and straightening roll; heavy-duty plate bending roll, pyramid type; clamps; gangs; plate-splitting shears; structural coping and gang punching machine; radial wall drill.

Gustav Wiedeke & Company, Ideal flue tools, Ideal tube expanders, Ideal tube cutters.

The following is bulletin No. 4 of recent additions:

## GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS, ETC.

Association of American Portland Cement Manufacturers, Facts every one should know about concrete roads, 1915.

Great Britain, Annual medical and sanitary reports of the northern and southern provinces of Nigeria for the year ended December 31, 1914.

National Conference on Concrete Building, Proceedings of National Conference on Concrete Road Building, held at Chicago on February 12-14, 1914.

Ohio Insurance Department, Ohio insurance report, for year ended December 31, 1914. Three volumes.

Parts 1-2—Fire, marine, casualty, fidelity, surety, liability, credit. Part 3—Life assessment, health, and accident. Part 4—Fraternal beneficiary associations.

L. C. Wilson, Corrosion of iron, a summary of causes and preventive measures.

Bureau of Foreign and Domestic Commerce, Shippers' export declaration and export procedure. Circular of Bureau of Foreign and Domestic Commerce, 1916.

Bureau of Standards, Investigation of fusible tin solder plugs. Technologic paper No. 53. By George K. Burgess and Paul D. Merica, 1915.

Department of Agriculture, Dog as carrier of parasites and disease. Bulletin No. 260. By Maurice C. Hall, 1915.

Department of Agriculture, Excavating machinery used in land drainage. Bulletin No. 300. By D. L. Yarnell, 1915.

Department of Agriculture, Exercises with plants and animals for Southern rural schools. Bulletin No. 305. By E. A. Miller, 1915.

Department of Agriculture, Pecan culture; with special reference to propagation and varieties. Farmer's bulletin No. 700. By C. A. Reed, 1916.

Department of Agriculture, Bagworm, an injurious shade tree insect. Farmers' bulletin No. 701. By O. Howard and H. Chittenden, 1916.

Navy Department, American ephemeris and nautical almanac, for 1918.

Navy Department, Annual report of the Judge Advocate General to the Secretary of the Navy for the fiscal year 1915.

Steamboat-Inspection Service, General rules and regulations prescribed by the Board of Supervising Inspectors, edition August 11, 1915. Edition November 4, 1915.

United States Public Health Service, Studies upon leprosy. Bulletin No. 75, 1916.

## MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.

Acme Machinery Company, Illustrated catalogue of bolt, nut, and forging machinery.

John Acton, Catalogue of automatic steam, water, air, and vacuum valves and specialties.

Asphalt Shingle Publicity Bureau, Booklet of suggestions for using asphalt shingles.

Beaudry & Company, Inc., Catalogue of belt and motor-driven hammers.

J. G. Blount Company, Catalogue No. 15 of grinding and polishing machinery and speed lathes.

Carters Tested Seeds, Inc., Catalogue of garden and lawn seeds, 1916.

Chisholm & Moore Manufacturing Company, Catalogue of chain hoists, cranes, etc.

Geo. P. Clark Company, Catalogues of trucks and casters.

Diamond Machine Company, Catalogue D of grinding and polishing machinery.

F. N. DuBois & Company, Illustrated catalogue E of sanitary specialties and plumbing fixtures.

Edro Richardson Brass Company, Catalogue A of brass and bronze goods.

Espen-Lucas Machine Works, Catalogue E of cutting-off machines, boring machines, milling machines, and automatic saw-sharpening machines.

General Electric Company, Bulletin No. 47750 on switchboard structural devices and accessories.

Goulds Manufacturing Company, General catalogue H and price list of pumps and hydraulic machinery.

Haage & Schmidt, Flower, seed, and garden tool catalogues, in German.

E. Hortton & Son Company, Catalogue No. 12-C of chucks.

R. K. LeBlond Machine Tool Company, Catalogue of milling machines. Booklet, "A lesson in economics" (on belt shifters). Illustrated catalogue of lathes. Handbook, "Milling machines and milling practice."

Long & Allister Company, Catalogue No. 21 of punching and shearing machinery.

McGriff-Kimberly Lawn Mower Company, Instruction book and price list of lawn mowers.

Newton Manufacturing Company, Folder on toggle switches.

Niles-Bement-Pond Company, General catalogue of machine tools, 1913. Pipe machines, standard bolt cutters, machine tools.

Noble & Noble, Catalogue of school books of all publishers.

Rutenber Electric Company, Catalogue of electric ranges.

Sullivan Machinery Company, Bulletin 72 on drill sharpener; bulletin 71-A on air lift pumping; bulletin 70-A on "Rotator" hammer drills.

Toledo Pipe Threading Machine Company, Pipe threading hand book.

Traussed Concrete Steel Company, Kahn portable steel buildings.

Union Manufacturing Company, Catalogue of chucks.

United States Electrical Tool Company, Catalogue 12, 1915, of portable electrical tools.

United States Steel Products Company, Catalogue of light railway track materials.

F. E. Wells & Son Company, Catalogue No. 11 of machine department.

Wolverine Brass Works, Illustrated catalogue H of plumbing specialties.

Worcester Electric Manufacturing Company, Catalogue No. 8 of knife switches, switchboards, and panel boards.

#### ARTICLES CONCERNING THE CANAL.

Commerce Reports, daily, Washington—Page 382, January 27, 1916: "Canal increases Honolulu shipping."

Engineering Record, New York—Page 149, January 29, 1916: "Greenheart, used in Panama Canal, is a timber with exceptional qualities."

#### COMMISSARY DEPARTMENT.

##### Cold Storage Price List.

The following list of retail prices of cold storage provisions will be effective February 17, 1916.

The prices are increased by 17 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

##### FRESH BEEF.

	Price.
Beef suet, special, per lb.	\$.043
Beef suet, native, per lb.	.033
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.05
Soup bone, special, per lb.	.04
Soup bone, native, per lb.	.023
Stew beef, special, per lb.	.11
Stew beef, native, per lb.	.08
Chuck roast (3 lbs. up) special, per lb.	.12
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (3 lbs. up) special, per lb.	.16
Rib roast, 2d cut (3 lbs. up), native, per lb.	.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Port roast, special, per lb.	.20
Port roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse roast, choice, per lb.	.31
Porterhouse roast, special, per lb.	.22
Porterhouse roast, native, per lb.	.16
Chuck steak, special, per lb.	.13
Chuck steak, native, per lb.	.09
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Stew beef, special, per lb.	.20
Rump steak, native, per lb.	.12

Porterhouse steak (14 lbs. up), choice, per lb.	.34
Porterhouse steak (14 lbs. up), special, per lb.	.23
Porterhouse steak (14 lbs. up), native, per lb.	.17
Porterhouse steak, short, choice, per lb.	.28
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25
Tenderloin steak, western, special, per lb.	.27
Rib steak, native, per lb.	.11

##### FRESH MEATS.

Lamb, chops, per lb.	.29
Lamb, chops, shoulder, per lb.	.20
Lamb, legs, 5 to 8 lbs., per lb.	.24
Lamb, shoulder, trimmed, not less than 3½ lbs., per lb.	.15
Lamb, stewing, short cut, per lb.	.12
Mutton chops, short cut, per lb.	.23
Mutton chops, shoulder, per lb.	.19
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.09
Pork, hams, fresh (see footnote), per lb.	.25½
Pork, chops, or meat, per lb.	.12
Pork, shoulders, fresh (see footnote), per lb.	.20
Veal, chops, per lb.	.40
Veal, chops, shoulder, per lb.	.27
Veal, chops, per lb.	.40
Veal, loin for roasting, per lb.	.45
Veal, shoulder for roasting not under 4 lbs., per lb.	.20
Veal, stewing, per lb.	.16

##### MISCELLANEOUS.

Brains, calves', per lb.	.07
Calve's heads, ea.	.78
Kidneys, beef, per lb.	.10
Livers, beef, per lb.	.08
Livers, calves', per lb.	.08
Pates de foie gras, jar.	.55½
Pigs' feet, fresh, per lb.	.05
Pigs' head, fresh, whole ear.	.83
Pigs' heads, fresh, ½ head, half.	.42
Sausage, bologna, per lb.	.17*
Sausage, frankfurter, per lb.	.19
Sausage, kienerswurst, per lb.	.17*
Sausage, pork, per lb.	.17
Sausage, pork, homemade, per lb.	.24
Sausage, Salami, per lb.	.38
Sweet ribs, pork, per lb.	.17
Steak, hamburger, pkg.	.14
Steak, hamburger, 20-pound container, per lb.	.13
Sweetbread, beef, per lb.	.21
Tongue, beef, per lb.	.20
Tongue, veal, per lb.	.20
Veal, per lb.	.31
Yeast, cake.	.02

##### CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.28
Bacon, breakfast, sliced, per lb.	.30
Bacon, sliced, jar.	.30
Bacon, sliced, tin.	.28
Bacon, strip, whole strip.	.20
Beef, corned—No. 1, per lb.	.15
Beef, corned—No. 2, per lb.	.12
Ham, genuine Westphalia, per lb.	.50
Ham, miaced, "Bologna style", per lb.	.21
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	.17
1. Ham, sugar cured (whole) per lb.	.22
2. Ham, sugar cured (half) per lb.	.25
3. Ham, sugar cured (sliced) per lb.	.30
4. Ham, sugar cured, boiled (whole) per lb.	.30
5. Ham, sugar cured, boiled (half) per lb.	.41
6. Ham, sugar cured, boiled (sliced) per lb.	.36
Pigs' feet, pickled, per lb.	.08
Pork, bellies, per lb.	.11
Pork, clear, per lb.	.11
Pork, standard mess, per lb.	.11
Spiced head meat, jar.	.30
Tongue, beef, corned natsk, whole, per lb.	.30
Tongue, pigs', per lb.	.22

##### POULTRY AND GAME.

Broilers, corn fed, per lb.	.31
Broilers, milk fed, per lb.	.32½
Capons, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.37
Chickens, fancy roasting, milk fed, per lb.	.31*
Ducklings, per lb.	.26
Fowls, light, per lb.	.23*
Geese, per lb.	.25
Geese, per lb.	.25
Grouse, ea.	.60
Squabs, ea.	.45
Turkeys, per lb.	.32

##### BUTTER AND CHEESE.

Butter, creamery special, per lb.	.45†
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.44†
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, ea.	1.50
Cheese, Edam, tin.	.32
Cheese, gouda, per lb.	.32
Cheese, parmesan, per lb.	.39
Cheese, Philadelphia cream, cake.	.09
Cheese, Roquefort, per lb.	.09
Cheese, snappy, cake.	.09
Cheese, Swiss, per lb.	.43
Cheese, young America, per lb.	.26
Cheese, young America, pt.	.17**
Cream, 30 per cent, qt.	.29**
Cream, 30 per cent, pt.	.52**
Eggs, fresh, per doz.	.40†
Egg-fats, per lb. doz. only.	.20†
Fer-mil-lac, bottle.	.25**

Price.	Price.
Ice cream, (see footnote) qt.	.25†
Ice cream, (see footnote) 1 gal.	.50†
Milk, Sheffield farms, 1 gal.	.15**
Oleomargarine, per lb. ctn.	.29

##### FISH.

Bluefish, fresh, per lb.	.19
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.11
Halibut, fresh, per lb.	.09
Herring, smoked, per lb.	.13*
Oysters, fresh, per qt.	.44
Salmon, fresh, per lb.	.11
Whitefish, smoked, per lb.	.32†

##### VEGETABLES.

Beans, string, per lb.	.10
Beets, per lb.	.02½
Beets, new, per lb.	.07
Brussels sprouts, per qt.	.21*
Cabbage, per lb.	.02
Carrots, per lb.	.02½†
Carrots, new, per lb.	.10
Cauliflower, per lb.	.15
Celery, per head.	.10
Chocho, each.	.02
Corn, green, per doz.	.07
Cucumbers, per doz.	.20
Egg plant, per lb.	.09
Lettuce, per lb.	.08†
Onions, per lb.	.03
Onions, young, per bunch.	.02
Parsley, per bunch.	.04
Paspais, per lb.	.03
Peas, green, per lb.	.08
Plantains, per doz.	.12
Potatoes, sweet, American, per lb.	.04
Potatoes, sweet, tropical, per lb.	.02½
Radishes, white, per lb.	.04
Radishes, per bunch.	.04
Squash, per lb.	.03
Thyme, per bunch.	.03
Tomatoes, per lb.	.07
Turnips, per lb.	.02
Yams, luca, per lb.	.03

##### FRUITS, DRIED.

Apples, evaporated, per lb.	.12
Apricots, evaporated, per lb.	.15
Currants, cleaned, pkg.	.15
Figs, dried, 15-oz box.	.21
Peaches, evaporated, per lb.	.08
Pears, evaporated, per lb.	.18
Peel, citron, per lb.	.20
Peel, lemon, per lb.	.16
Peel, orange, per lb.	.16
Prunes, stewing, per lb.	.13
Raisins, seeded, pkg.	.08†
Raisins, table cluster, per lb.	.15

##### FRUITS, FRESH.

Apples fresh, per lb.	.04
Apples, fresh, select, per lb.	.09*
Bananas, 8 hands and over, per bunch.	.40
Bananas, 6 and 7 hands, per bunch.	.28
Bananas, ea.	.004
Custard apples, ea.	.02
Grapes, per lb.	.24
Grapefruit, select, ea.	.04
Grapefruit, tropical, select, ea.	.03
Lemons, per doz.	.19*
Oranges, select, ea.	.04
Oranges, tropical, doz.	.12
Pineapples, each.	.24
Pineapples, ea.	.11

\* Indicates advance from preceding list.  
 \*\* Indicates five cents allowed for return of bottle.  
 † Indicates reduction from preceding list.  
 ‡ Sold only from commissaries, no orders taken for delivery.  
 † Not less than ½ ham of ½ shoulder or fresh pork will be sold.

#### Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, February 12, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alahuela	Gambou	Gatun Lake	Miraflores Lake
Sun., Feb. 6.	125.25	91.82	86.38	86.36	53.40
Mon., Feb. 7.	125.20	91.75	86.38	86.35	53.30
Tues., Feb. 8.	125.25	91.72	86.31	86.33	53.44
Wed., Feb. 9.	125.30	91.81	86.36	86.30	54.15
Thurs., Feb. 10.	125.35	91.84	86.36	86.31	54.44
Fri., Feb. 11.	125.65	92.24	86.34	86.33	54.02
Sat., Feb. 12.	125.35	91.93	86.37	86.34	53.85

Heights of low water to nearest foot.

125 0	91 0			
Additions to Stock.				
Embroidery flouncing, yd.				\$.02
Embroidery flouncing, yd.				.03
Embroidery flouncing, yd.				.23
Embroidery flouncing, yd.				.30
Embroidery flouncing, yd.				.36
Embroidery flouncing, yd.				.40
Hats, straw, low crown, ea.				2.35



## OFFICIAL CIRCULARS.

## Acting Magistrate, Balboa.

## THE PANAMA CANAL,

## EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., February 1, 1916.

To all concerned—Effective with the departure on leave of Judge Samuel E. Blackburn, February 5, 1916, and during his absence on leave, Mr. F. G. Swanson will act as magistrate for the subdivision of Balboa.

J. J. MORROW,  
Acting Governor.

## Men to Serve as Jurors.

## THE PANAMA CANAL,

## EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., February 8, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:  
Please send to the Executive Office, Balboa Heights, a list, in triplicate, of the employees in your department or division who are qualified to serve as jurors, and whose services can be spared for such duty without serious inconvenience to the work.

The qualifications of a juror are:

1. Citizen of the United States;
2. Between the age of 21 and 65;
3. In good standing and in full possession of ordinary faculties.

4. Resident of the Canal Zone for three months. (Employees quartered in Panama or Colon should not be included in this list.)

5. Able to read, write, and understand the English language.

The following persons are exempt from jury duty, and their names should not be included in the list furnished:

Attorneys at law, physicians, ministers of an established religion, members of the military, naval, and police forces, and officers of The Panama Canal of the rank and above the rank of resident engineer.

The list should give the name, age, residence, and occupation, and place of employment of each employee, somewhat as follows:

Name.	Age.	Residence.	Occupation.	Place employed.
Dick Doe	27	Ancon	Machinist	Parriso shops

The following comment of the District Attorney is called to your attention:

"It would further appear that department heads should now be able to definitely determine the employees who can serve as jurors without detriment to the work. Judging from past experience, those summoned are not required, as a rule, to be absent from duty for more than two days. The law requires a panel of 30 men, and when 12 have been secured, the remainder are immediately allowed to return to their work, though they may be required to return on some other date during the month if another case is set for trial."

By direction of the Acting Governor.

C. A. McILVAINE,  
Executive Secretary.

## Prices on Scrap.

## THE PANAMA CANAL,

## SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., February 7, 1916.

To all concerned—The following prices will govern on scrap metals, etc., turned in to this department until further notice:

Copper wire screening, per pound.....	\$0.14
Copper, per pound.....	.18
Brass, per pound.....	.12
Lead, per pound.....	.045
Zinc, per pound.....	.12
Rope, per pound.....	.025
Rubber, per pound.....	.01
Hose, rubber, per pound.....	.01
Residue, potash, per pound.....	.045

WM. R. GROVE,  
Chief Quartermaster.

## Notaries Public.

## THE PANAMA CANAL,

## EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., January 31, 1916.

To all concerned—Notaries public in the Canal Zone are from time to time requested to take acknowledgments to instruments affecting real property situated in continental United States, and are by the laws of the Canal Zone empowered so to do. It has been recently ascertained, however, that instruments so executed will not be accepted for recording in some of the States.

It is accordingly suggested that all acknowledgments to instruments affecting real property in the United States be taken before the clerk of the District Court of the Canal Zone, whose authority so to do is recognized by the various States of the Union.

C. A. McILVAINE,  
Executive Secretary.

## Less-than-Carload Freight Shipments.

## PANAMA RAILROAD COMPANY,

## OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., February 1, 1916.

## CIRCULAR NO. 286:

To all concerned—In view of not sufficient less-than-carload freight moving to warrant triweekly car from Colon to Balboa Heights, effective at once instructions contained in circular No. 62, dated May 4, 1915, are hereby cancelled.

Less-than-carload shipments for Balboa Heights may be continued to be marked for Balboa Heights for the information of the district quartermaster in trucking and can now be shipped from Colon or line stations any day of the week, which hereafter will be loaded to Panama freight house, from which point delivery will be made.

C. H. MOTSETT,  
Superintendent.

## Box Cars for Cement.

## PANAMA RAILROAD COMPANY,

## OFFICE OF SUPERINTENDENT,

BALBOA HEIGHTS, C. Z., February 9, 1916.

## CIRCULAR NO. 292:

To all concerned—The following wire received from our receiving and forwarding agent, Colon dated the 8th instant:

"Steamship Ancon due tomorrow at 10 a. m. with approximately 11,000 tons, including 8,600 tons cement for Panama Canal."

Due to the limited amount of cement on hand the last few days, heavy requirements, etc., it is absolutely necessary that delivery be made direct from ship to cars as fast as it can be discharged and loaded. At the present writing not more than 10 or 12 box cars are available. It is requested, therefore, that all departments stretch a point in releasing box cars in order that prompt filling of cement orders can be accomplished.

C. H. MOTSETT,  
Superintendent.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, February 23, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeur's licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeur's licenses will be given on Monday, two days before the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for licenses at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, February 25, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By order of the chairman of the board.

Geo. J. VANDERLICE,  
Recorder, Board of Local Inspectors.

## Misdirected Letters.

Adkins, Ward	Johnson, Mrs. H. J.
Allen, Melvin	Mason, E. D.
Barton, Capt. Thos.	Messer, Patrick J.
Bolton, R. H.	McDonald, Peter J.
Clemens, Albert E.	Nelson, William N.
Currier, Cyrus	Perez, Elroy M., Box 60.
Daykin, Miss Francis	Ramsbottom, E. C.
Egger, George	Reed, John
Erger, Edward	Short, K. E.
Fournier, Maurice	Stewart, Mrs. Lillie W.
*Glaze, Albert	Stootz, J. M.
Goulding, E. R.	Temple, Miss Laura
Harper, W. M.	VanSteenberg, Alfred
Hines, Miss Daisy	Williams, Mrs. M.
Hudson, Mrs. Marie	

\*Card.

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the period to April 1 are given in this table:

FEBRUARY.				
DATE.	Time and height of high and low water.			
Wed., Feb. 16.....	1:59	8:21	14:36	20:44
Thurs., Feb. 17.....	12:3	3	13	19:27
Fri., Feb. 18.....	2:42	9:05	15:16	21:3
Sat., Feb. 19.....	12:9	2.3	13.1	2
Sun., Feb. 20.....	3:23	9:44	15:53	22:04
Mon., Feb. 21.....	14.5	0.6	14.9	0.8
Tues., Feb. 22.....	4:02	10:19	16:32	22:40
Wed., Feb. 23.....	14.1	1.0	14.4	1.2
Thurs., Feb. 24.....	4:39	10:53	17:02	23:15
Fri., Feb. 25.....	14.8	0.6	14.9	0.8
Sat., Feb. 26.....	5:15	11:27	17:36	23:50
Sun., Feb. 27.....	14.7	0.5	15.2	0.6
Mon., Feb. 28.....	5:52	12:01	18:10	24:24
Tues., Feb. 29.....	14.8	0.7	15.4	1
Wed., Feb. 30.....	0:27	6:30	12:38	18:45
Thurs., Feb. 24.....	0.7	14.6	1.0	15.3
Fri., Feb. 25.....	1:07	7:09	13:19	19:24
Sat., Feb. 26.....	1:53	7:52	14:07	20:10
Sun., Feb. 27.....	1.5	13.8	2.2	14.4
Mon., Feb. 28.....	2:47	8:44	15:05	21:05
Tues., Feb. 29.....	3:51	9:50	16:13	22:17
Wed., Feb. 30.....	2.7	12.6	3.5	13.2
Thurs., Feb. 29.....	5:02	11:11	17:28	23:40
	6:15	12:30	18:40	25:0
	2.5	13.0	3.1	14.0

## MARCH.

DATE.	Time and height of high and low water.			
Wed., March 1.....	0:56	7:24	13:36	19:51
Thurs., March 2.....	1:37	1.8	14.0	2.1
Fri., March 3.....	1:59	8:22	14:32	20:48
Sat., March 4.....	14.4	0.8	15.0	1.0
Sun., March 5.....	2:53	9:13	15:22	21:37
Mon., March 6.....	15.2	-0.1	15.9	0.0
Tues., March 7.....	3:43	9:58	16:09	22:22
Wed., March 8.....	15.7	-0.7	16.5	-0.6
Thurs., March 9.....	4:33	10:41	16:53	23:04
Fri., March 10.....	5:16	11:21	17:34	23:43
Sat., March 11.....	15.9	-0.7	16.5	-0.6
Sun., March 12.....	5:57	12:00	18:14	24:24
Mon., March 13.....	0:23	6:37	12:41	18:54
Tues., March 14.....	0.1	14.9	0.9	15.2
Wed., March 15.....	1:03	7:16	13:22	19:31
Thurs., March 16.....	1.0	14.0	1.3	12.1
Fri., March 17.....	1:47	7:55	14:07	20:11
Sat., March 18.....	2.1	13.0	3.2	13.1
Sun., March 19.....	2:36	8:39	15:00	20:57
Mon., March 20.....	12.8	2.6	13.4	2.4
Tues., March 21.....	3:33	9:36	16:04	22:00
Wed., March 22.....	4.3	11.1	5.1	11.3
Thurs., March 23.....	4:40	10:55	17:14	23:20
Fri., March 24.....	5.7	10.7	16.7	11.1
Sat., March 25.....	5:49	12:18	18:23	24:31
Sun., March 26.....	4.7	10.9	5.2	11.3
Mon., March 27.....	0:31	6:54	13:19	19:25
Tues., March 28.....	11.6	4.3	5.3	10.5
Wed., March 29.....	1:30	7:48	14:04	20:15
Thurs., March 30.....	12.0	3.5	12.4	3.5
Fri., March 31.....	2:14	8:34	14:42	21:07
Sat., March 1.....	12.8	2.6	13.4	2.4
Sun., March 2.....	2:55	9:13	15:17	21:36
Mon., March 3.....	13.6	1.7	14.3	1.3
Tues., March 4.....	3:33	9:49	15:52	22:12
Wed., March 5.....	4.4	10.4	5.1	11.3
Thurs., March 6.....	4:11	10:25	16:26	22:48
Fri., March 7.....	14.9	0.5	15.6	-0.1
Sat., March 8.....	4:49	11:00	17:03	23:24
Sun., March 9.....	15.0	0.2	16.0	-0.3
Mon., March 10.....	5:28	11:37	17:41	24:01
Tues., March 11.....	15.4	0.2	16.0	0.0
Wed., March 12.....	0:03	6:07	12:16	18:21
Thurs., March 13.....	1.0	13.5	1.5	15.8
Fri., March 14.....	0:44	6:51	13:00	19:04
Sat., March 15.....	0.3	14.8	1.2	15.2
Sun., March 16.....	1:32	7:37	13:51	19:53
Mon., March 17.....	2.0	13.2	3.0	14.4
Tues., March 18.....	2:28	8:32	14:52	20:52
Wed., March 19.....	1.8	13.4	3.0	13.5
Thurs., March 20.....	3:35	9:40	16:04	22:07
Fri., March 21.....	2.6	12.6	3.5	12.9
Sat., March 22.....	4:47	11:01	17:21	23:32
Sun., March 23.....	2.9	12.7	3.6	12.8
Mon., March 24.....	5:59	12:19	18:32	24:41
Tues., March 25.....	13	2.0	13.5	2.0
Wed., March 26.....	0:48	7:05	13:22	19:37
Thurs., March 27.....	13.2	2.1	14.1	2.0
Fri., March 28.....	1:49	8:03	14:15	20:31
Sat., March 29.....	14.0	1.2	15.0	1.0

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., February 13, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Feb. 9.....	Potomac (tug).....	American.....	United States Navy.....	Cristobal.....	Balboa.....	Ballast.....		173	173
Feb. 9.....	Barge No. 2.....	American.....	Panama Railroad Co.....	Cristobal.....	Balboa.....	Miscellaneous.....		173	173
Feb. 9.....	Barge No. 21.....	American.....	Panama Railroad Co.....	Cristobal.....	Balboa.....	Miscellaneous.....			

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Feb. 8.....	Cyrus W. Field.....	American.....	United States Government.....	Balboa.....	Cristobal.....	Ballast.....		376	204
Feb. 9.....	Bushnell.....	American.....	United States Navy.....	Seattle.....	Boston.....	Ballast.....			

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Feb. 7.....	Diana (yacht).....	Private.....	New York.....	Feb. 10.....	Diana (yacht).....	Private.....	Cartagena.
Feb. 10.....	Buenos Aires.....	Spanish Line.....	Barcelona.....	Feb. 11.....	Peros.....	French Line.....	St. Nazaire.
Feb. 12.....	Coronado.....	Elders & Fyffes.....	Port Limon.....	Feb. 11.....	Zeta (schooner).....	Wilcox & Co.....	Mobile.
Feb. 12.....	Wisdom (yacht).....	Private.....	Port Limon.....	Feb. 12.....	Coronado.....	Elders & Fyffes.....	Bristol.
				Feb. 13.....	Buenos Aires.....	Spanish Line.....	Barcelona.

## \*EXPECTED ARRIVALS.

Feb. 15.....	Jason.....	United States Navy.....	Norfolk.....	Feb. 16.....	A. J. West.....	Manila Import Co.....	New York.
Feb. 16.....	Europa.....	Cuban Government.....	Havana.....	Feb. 16.....	Windsor.....	Pacific American Fisheries.....	Seattle (via Horn).
Feb. 18.....	Europa.....	La Veloce.....	Genoa.....		Wisdom (yacht).....	Private.....	
					Patria.....	Cuban Government.....	
					Frederik Luckenbach	Luckenbach Line.....	New York.
					Jason.....	United States Navy.....	

## PORT OF BALBOA.

ARRIVALS.				DEPARTURES.			
Date.	Vessel	Line	From	Date	Vessel	Line	For
Feb. 6.....	Monari.....	Pacific Steam Nav. Co.....	Guayaquil.....	Feb. 7.....	Newport.....	Pacific Mail S. S. Co.....	San Francisco.
Feb. 7.....	Inveric.....	Andrew Weir & Company.....	Eureka.....	Feb. 14.....	Inveric.....	Andrew Weir & Co.....	Avonmouth.
Feb. 7.....	Alicia.....	Panama Trans. Co.....	Panama.....	Feb. 12.....	Ucayali.....	Peruvian Line.....	Callao.
Feb. 8.....	Hastings.....	Panama Trans. Co.....	Callao.....	Feb. 12.....	Academy.....	Pacific Steam Nav. Co.....	Guayaquil.
Feb. 8.....	Acapulco.....	Pacific Steam Nav. Co.....	Taboga.....	Feb. 13.....	Polyphemus.....	China Mutual Sm. Nav. Co.....	London, via Coronel
Feb. 9.....	Huasco.....	South American S. S. Co.....	Talcahuano.....				
Feb. 10.....	Adra.....	L. J. Shoemaker.....	Amapala.....				
Feb. 11.....	San Juan.....	Pacific Mail S. S. Co.....	San Francisco.....				
Feb. 12.....	Polyphemus.....	China Mutual Sm. Nav. Co.....	San Francisco.....				
Feb. 12.....	T. Ellis.....	H. T. Dongall.....	Los Angeles.....				
Feb. 12.....	Jamaica.....	Pacific Steam Nav. Co.....	Buenaventura.....				
Feb. 13.....	Cleveland.....	United States Navy.....	Corinto.....				

## EXPECTED ARRIVALS.

Feb. 15.....	Pacific.....	Emery Steamship Co.....	San Francisco.	Feb. 14.....	Huasco.....	South American S. S. Co.....	Valparaiso.
Feb. 15.....	San Francisco.....	Johnson Line.....	S. American ports.	Feb. 17.....	Cleveland.....	United States Navy.....	Corinto.
Feb. 15.....	Parato.....	Standard Oil Company.....	Los Angeles.	Feb. 19.....	San Juan.....	Pacific Mail Steamship Co.....	San Francisco.
Feb. 15.....	S. A. Moffet.....	Standard Oil Company.....	San Francisco.	Feb. 26.....	Guatemala.....	Pacific Steam Nav. Co.....	Chilean ports.
Feb. 15.....	Leelanaw.....	Leelanaw Steamship Co.....	San Francisco.				
Feb. 21.....	Guatemala.....	Pacific Steam Nav. Co.....	Chilean ports.				

## EXPECTED DEPARTURES.

of water, add the tabular height to the soundings given on the chart, unless a minus (−) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.), all hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily, to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the Advance the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*Note—The sailings on Monday, March 6 and April 3, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the sailings on March 6 and April 3.

When the vessel sailing Thursday is the Advance, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Carrillo.....	U. F. C.	Feb. 9.....	Feb. 16
Colon.....	P. R. R.	Feb. 10.....	Feb. 16
Tenadores.....	U. F. C.	Feb. 12.....	Feb. 20
Santa Marta.....	U. F. C.	Feb. 16.....	Feb. 23
Advance.....	P. R. R.	Feb. 17.....	Feb. 24
Metapan.....	U. F. C.	Feb. 19.....	Feb. 28
Almirante.....	U. F. C.	Feb. 23.....	Mar. 1
Panama.....	P. R. R.	Feb. 24.....	Mar. 1
Pastores.....	U. F. C.	Feb. 26.....	Mar. 2
Zacapa.....	U. F. C.	Mar. 1.....	Mar. 8
Allianca.....	P. R. R.	Mar. 2.....	Mar. 8
Calamares.....	U. F. C.	Mar. 4.....	Mar. 12
Carrillo.....	U. F. C.	Mar. 8.....	Mar. 15
Colon.....	P. R. R.	Mar. 9.....	Mar. 15
Tenadores.....	U. F. C.	Mar. 11.....	Mar. 19
Santa Marta.....	U. F. C.	Mar. 15.....	Mar. 22
Advance.....	P. R. R.	Mar. 16.....	Mar. 23

## CRISTOBAL-COLON TO NEW YORK.

Allianca.....	P. R. R.	Feb. 17.....	Feb. 23
Zacapa.....	U. F. C.	Feb. 17.....	Feb. 24
Calamares.....	U. F. C.	Feb. 21.....	Feb. 28
Colon.....	P. R. R.	Feb. 24.....	Mar. 1
Carrillo.....	U. F. C.	Feb. 24.....	Mar. 2
Tenadores.....	U. F. C.	Feb. 28.....	Mar. 6
Advance.....	P. R. R.	Mar. 2.....	Mar. 9
Santa Marta.....	U. F. C.	Mar. 2.....	Mar. 9
Metapan.....	U. F. C.	Mar. 6.....	Mar. 14
Panama.....	P. R. R.	Mar. 6.....	Mar. 15
Almirante.....	U. F. C.	Mar. 9.....	Mar. 16

Pastores.....	U. F. C.	Mar. 13.....	Mar. 20
Allianca.....	P. R. R.	Mar. 16.....	Mar. 22
Zacapa.....	U. F. C.	Mar. 16.....	Mar. 23
Calamares.....	U. F. C.	Mar. 20.....	Mar. 27
Colon.....	P. R. R.	Mar. 23.....	Mar. 29

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba.....	U. F. C.	Feb. 12.....	Feb. 19
Coppename.....	U. F. C.	Feb. 16.....	Feb. 21
Abangarez.....	U. F. C.	Feb. 19.....	Feb. 26
Cartago.....	U. F. C.	Feb. 23.....	Feb. 28
Atenas.....	U. F. C.	Feb. 26.....	Mar. 4
Heredia.....	U. F. C.	Mar. 1.....	Mar. 6
Turrialba.....	U. F. C.	Mar. 4.....	Mar. 11
Parishina.....	U. F. C.	Mar. 8.....	Mar. 13
Abangarez.....	U. F. C.	Mar. 11.....	Mar. 18
Cartago.....	U. F. C.	Mar. 15.....	Mar. 20
Atenas.....	U. F. C.	Mar. 18.....	Mar. 25
Heredia.....	U. F. C.	Mar. 22.....	Mar. 27
Turrialba.....	U. F. C.	Mar. 25.....	April 1
Parishina.....	U. F. C.	Mar. 29.....	April 3

## CRISTOBAL-COLON TO NEW ORLEANS.

Heredia.....	U. F. C.	Feb. 20.....	Feb. 25
Turrialba.....	U. F. C.	Feb. 20.....	Feb. 28
Coppename.....	U. F. C.	Feb. 27.....	Mar. 3
Abangarez.....	U. F. C.	Feb. 27.....	Mar. 6
Cartago.....	U. F. C.	Mar. 5.....	Mar. 10
Atenas.....	U. F. C.	Mar. 5.....	Mar. 13
Heredia.....	U. F. C.	Mar. 12.....	Mar. 17
Turrialba.....	U. F. C.	Mar. 12.....	Mar. 20
Panama.....	U. F. C.	Mar. 19.....	Mar. 24
Abangarez.....	U. F. C.	Mar. 19.....	Mar. 27
Cartago.....	U. F. C.	Mar. 26.....	Mar. 31
Atenas.....	U. F. C.	Mar. 26.....	April 3

# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, FEBRUARY 23, 1916.

No. 27.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll. Bound volumes are for sale at \$2.50 each.

All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, on this basis.

Subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Acceptance Tests of Unloader Towers.

The acceptance tests of the unloader towers of the Cristobal coaling plant, for which the towers were in readiness last week, will be made with the Canal collier *Ulysses*, which is expected to arrive on Saturday, February 26, instead of with the Navy collier *Jason*. It was decided to use the *Ulysses* because the absence of coal handling machinery aboard the vessel gives a better clearance for the unobstructed operation of the unloading machinery at the plant.

### Collier Has Trouble in Towing Barge.

The Canal collier *Ulysses*, which sailed from Norfolk on February 14 with one 1,000-cubic yard Moran barge in tow, lost the barge about 400 miles north of Watlings Island, by the breaking of the towing line in a heavy sea, and about two days were lost before the barge could be taken in tow again. The *Ulysses* is expected to arrive on February 26.

The Canal collier *Achilles* sailed from Norfolk on Sunday, February 20, with one Packard scow in tow. This is one of two 3,000-cubic yard barges recently purchased for the Canal. The *Achilles* is due at Cristobal about March 1.

### Storm Interrupts Work on East Breakwater.

The dumping of material on the East Breakwater in Limon Bay was discontinued from Thursday morning to Friday afternoon of last week on account of rough seas in the bay. Some pieces of shimming were washed out of the trestle and four bents were twisted, but no serious damage was done.

The seas were the accompaniment of a relatively local storm, in which the wind blew as high as 33 miles an hour on Friday, February 18. Vessels a day out from Colon reported that no storm was in progress at that distance from the port. An unusually high barometer, with a maximum reading of 29.993, was recorded at the Colon observatory on February 15, and the storm which followed was due to the rush of air from adjacent areas to equalize the pressure. The maximum barometric record at Colon is 30.029, and the annual mean barometric pressure for the eight years of record is 29.859. Heavy rainfall occurred generally over the Isthmus on February 18 and 19.

### The "Windber" Sails on Voyage via Magellan.

The steamship *Windber*, which came into Cristobal from Baltimore on February 4 in the hope of making passage through the Canal on her way to Seattle, gave up waiting on February 18, and cleared for St. Thomas, on the way around South America. The master stated that he would probably call at Pernambuco, Rio de Janeiro, Montevideo, Tal-tal, and Balboa on the voyage, in which case he has approximately 14,500 miles to travel to reach Seattle. The distance from Balboa to Seattle is, approximately, 4,100 miles and from Cristobal to Balboa, around the continent, is 10,500 miles. The *Windber* will be over two months in making the trip, and the Canal authorities have written her operators their regrets that the vessel could not make the transit through the Canal.

### The "A. J. West" Clears for New York.

The schooner *A. J. West*, which was handled through the Canal from Balboa to Cristobal on January 6 so that she might discharge cargo and go into the dry dock for repairs to her hull, cleared from Cristobal for New York on February 18. Her cargo, consisting of 600 tons of cut mahogany, consigned to New York from Manila, was discharged on Dock 13 and reloaded after the completion of the repairs.

### Manufacture of Tile Roofing for Piers about Completed.

The American Cement Tile Manufacturing Company has completed the manufacture of roofing for piers No. 7 at Cristobal and No. 18 at Balboa, and will probably complete a supplementary order for spares by the end of this month. The plant has undertaken the manufacture of a special form of flashing, to go under the louvers of Pier 7. This involves the making of 950 pieces, or approximately 2,000 linear feet. The work which has been done includes 21,000 pieces for Pier 7, 9,026 pieces for Pier 18, for which most of the roofing had been manufactured under a previous contract, and 1,120 pieces for the scale houses and transformer houses at the new coaling plants at the terminals.

## NEW DREDGING RECORDS.

### Dredge "Cascadas" Makes World's Record for Day's Work in Hard Material.

Three new high records for dredging in the Cut were established on Friday, February 18, in the 24-hour period from midnight to midnight.

The new 15-yard dipper dredge *Cascadas* excavated and loaded into scows on that day a total of 23,305 cubic yards of rock and earth. This is believed to be the world's record for a day's work by any kind of excavating machine in hard material.

Taking its weight at 3,000 pounds to the cubic yard (approximately 110 pounds to the cubic foot), the weight of the material dug by the *Cascadas* was approximately 35,000 tons. What is claimed to be the heaviest train ever hauled by one locomotive, from Baltimore to Philadelphia, consisting of 55 cars of coal, carried 4,102 tons. The output of the *Cascadas* on February 18 weighed more than the contents of eight such trains. The displacement tonnage, or weight complete, of each of the latest battleships of the United States Navy, the *Idaho*, *Mississippi*, and *California*, now under construction, is to be about 32,000 tons. The displacement tonnages of the *Missouri*, *Ohio*, and *Wisconsin*, first line battleships eight years ago, which passed through the Canal on the midshipmen's practice cruise of 1915, were 13,450, 13,900, and 12,830 tons, respectively, an aggregate of 40,180 tons.

The actual working time of the *Cascadas* having been 23 hours and 15 minutes during the record day, the rate of output was slightly over 1,002 cubic yards an hour. This is about 1,500 tons an hour or 25 tons a minute.

Including the work of the *Cascadas*, a new record for excavation at the bases of the slides in one day was established on February 18, with a total of 43,030 cubic yards. And including this work, the record for excavation in the entire Cut by dredges was broken, with an aggregate output of 55,979 cubic yards, the previous high record having been 48,622 cubic yards.

Excavation at the bases of the Culebra slides, north of Gold and Contractor's Hills, during the week ending at midnight of Monday, February 21, amounted to 267,255 cubic yards. In addition, 61,399 cubic yards were rehandled by the pipeline suction dredge *No. 86*, the sea-going suction dredge *Culebra*, and the Belgian ladder dredge *No. 5*.

The average aggregate output of the dredges in the Cut during the 17 weeks preceding that ending at midnight of February 21 was 256,922 cubic yards, the total amount of primary excavation during that period (since October 19) having been 4,367,630 cubic yards. This has been an average of 36,703 cubic yards for each of the 119 days, or approximately 1,091,920 cubic yards per month for four months.



## CANAL WORK IN JANUARY.

Monthly Report of the Acting Governor to the Secretary of War.

BALBOA HEIGHTS. C. Z., February 14, 1916.  
The Honorable the Secretary of War,  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of January, 1916:

Department of Operation and Maintenance.

**Lock operation and maintenance.**—In addition to the usual maintenance and repair work at the locks, six towing locomotives at Gatun Locks were connected up for operation in concatenation, which completes all work of this character; all material for the regulating valves, and 63 per cent of the material for the machines to operate these valves, has been delivered on the Isthmus and the work of installation commenced; all material for the track turnouts for all locks was received during the month; and the lower east chamber at Miraflores Locks was pumped out, preparatory to applying bitumastic solution and enamel to the gates and valves. The following commercial lockages were made: *Gatun*—Seven lockages, seven vessels; *Pedro Miguel*—Seven lockages, seven vessels; *Miraflores*—Seven lockages, seven vessels.

These lockages consisted principally of small launches, whaleboats, submarines, etc.

**Electrical Division.**—The net output of the power plants was as follows: Gatun hydro-electric station, 3,261,100 kilowatt-hours; Miraflores steam station (minus), 81,220 kilowatt hours; total, 3,179,880 kilowatt-hours. The net output of the Balboa air compressor plant was 161,336,446 cubic feet of free air compressed to 105 pounds. In addition to the usual operation, maintenance, and repair work construction work was carried on in connection with the electrical installation of the new coaling plants, dry dock, and on buildings for The Panama Canal and for the Army.

**Municipal Engineering Division.**—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: Work on water and sewer systems, and grading and construction of roads and walks for the Army at Fort Randolph, Fort Amador, Toro Point, and Corozal; grading and construction of walks at staff headquarters, Quarry Heights; the installation of water and oil piping for the Division of Terminal Construction at the Pacific terminals; and municipal work in the Balboa townsite, including the extension of roads in Ancon and Balboa.

**Meteorology and Hydrography.**—The rainfall for the month exceeded the station averages at eight stations and was deficient at 10 stations. The monthly rainfall ranged from 2.33 inches at Colon to 0.04 inch at Indio station on the upper Chagres, the maximum precipitation recorded on any one day being 1.63 inches, at Colon on January 17. The estimated rainfall over the Gatun Lake watershed was 64 per cent below the normal, or 1.32 inches against a 15-year mean of 3.67 inches. The Chagres River discharge at Alhajuela was 35 per cent below the 15-year January normal, and furnished 77 per cent and 52 per cent of the net and total Gatun Lake yields, respectively. The elevation of Gatun Lake varied from 86.75 on January 18 and 19, to 86.44 on the 31st, averaging 86.59. Miraflores Lake varied in elevation from 54.10

on the 27th to 51.40 on the 12th, averaging 52.65. Five seismic disturbances were recorded at Balboa Heights during January, on the 1st, 13th, 17th, 24th, and 31st. No damage was reported as a result of any of the shocks.

Division of Terminal Construction.

PACIFIC TERMINALS.

**Dry dock and entrance pier.**—One thousand and thirty-nine cubic yards of mass concrete and 1,871 cubic yards of reinforced concrete were placed around the entrance valves and in the opening left at the east end of the dock for the incline. There were embedded in this concrete 163,150 pounds of reinforcing steel and 55,443 pounds of fixed steel. The masonry around the flooding valves was in place at elevation 8.5. Work was commenced in the floor on drilling holes and cutting slots for the keel blocks. Excavation for the storm sewer on the south side was commenced and various duct lines were laid. Work progressed on the installation of the moving machinery, and both machines were installed as far as the condition of the masonry over the bullwheels would permit. The dock gate leaves were both on their pintles. The roofs of the dock gate machinery chambers were erected complete during the month. The erection of structural steel in the dock gates and machinery chamber roof amounted to 13.16 tons. One thousand three hundred and fifty-nine cubic yards of concrete were placed in the entrance pier.

**Coaling plant.**—Excavation for the piers at the west end of the unloader wharf was continued throughout the month, and is about 80 per cent complete. Work was commenced on placing the vertical pile fenders along the face of the wharf. At the end of the month all of the cylindrical piers of the reloader wharf had been sunk to rock, with the exception of one under the wharf bunkers which was on boulders and very near to rock. The concrete decking was carried on on the south half of the reloader wharf and six panels were ready for the erection of the unloading cranes by the middle of the month. At the end of the month the south half had been poured, with the exception of three panels. The excavation for anchorages behind the reloader wharf was completed as far as steamshovel work could be performed, and the anchor rods were placed in the anchor wall, and work was commenced on excavating the north end of the anchor wall. Two thousand seven hundred and ten rivets were driven, bringing the total number of rivets in the 15 panels to 13,720.

In the unloader towers the enameling of the interiors of the operators' cabs and machinery houses, and the painting of the exteriors with the second coat of field paint were completed, with the exception of putting the second coat of field paint on the exterior of the machinery houses on tower No. 2. Work was continued on the steam and exhaust piping of both towers and additional installation of operating parts for machines. The structural steel for the east end of the viaduct system was erected during the latter part of the month, making the viaduct practically complete to the west cut-off. Additional bracing on the north and south runs was erected and riveted. The total steel erected in the viaduct during the month amounted to 29 tons, making the total erection to date 138 tons; 244 rivets were driven, making a total to date of 754. Out of a total of 429 tons of steel required for

the viaduct and transformer house, 424 tons had been delivered by the end of the month; 144 tons out of a total required of 194 tons for the reloader towers had been delivered; and a total of 725 tons out of 853 tons required for the contract for reloader towers and conveyor system had been delivered.

**Docks.**—All of the anchors of quay wall d-e-f were put in place, and the fill behind the wharf was suspended until they were in position. Three girders for crane rail were erected, connecting the crane rail on the dry dock. The steel erected amounted to 17.88 tons, making the total erected to date on the crane rail supports 35.29 tons, and 198 rivets were driven. The riveting of the shed on pier No. 18 was completed, the total number of rivets driven being 19,354. At the end of the month there remained about 50 per cent of the roof rods, the straightening and aligning of all steel, the preparation of the roof for the cement tile, the painting of the steelwork, and numerous small items. Reinforcing for pontoons Nos. 1 and 2 was completed for the first pour, and about 50 per cent completed in pontoons Nos. 3 and 4. The trestle from the shore to oil crib No. 1 was practically completed.

**Excavation and filling.**—The total excavation for the month amounted to 83,280 cubic yards, of which 66,233 cubic yards were classified as rock, the greater portion of which was obtained from Sosa Hill. There were sent to the East Breakwater from the Sosa Hill quarry 42,586 cubic yards of core rock, and 11,264 cubic yards of armor rock. This is the largest percentage of armor rock obtained from the quarry in any one month. Filling operations continued behind the unloader wharf, reloader wharf, and around the shops. A total of 32,021 cubic yards were placed in fill at the Pacific terminals.

ATLANTIC TERMINALS.

**East Breakwater.**—Armor rock in the amount of 11,168 cubic yards, and 43,680 cubic yards of core rock, both from Sosa Hill, were plowed off. Derrick barge No. 157 placed 5,606.8 cubic yards of concrete blocks, and 3,270.3 cubic yards were plowed from cars, making a total of 8,877.1 cubic yards. Dredge No. 4 pumped 10,490 cubic yards of earth and 19,993 cubic yards of rock on the harbor slope of the breakwater, making a total of 30,483 cubic yards. Four hundred and five feet of untreated piling were driven for dolphins, preparatory to salvaging the trestle. Two thousand one hundred and forty-five feet of roadway were surfaced and the track laid. One thousand and four hundred cubic yards of gravel ballast were placed in the tracks and tamped.

Under the concrete block contract, 1,108 blocks were cast, involving the placing of 13,628 cubic yards of concrete, the total number of blocks cast to date being 2,808. Seven hundred concrete blocks were shipped to the breakwater, the total to date being 1,750. The number of days on which concrete was poured was 26, giving an average daily output of 43 blocks.

**Coaling plant.**—The end wharf floor was completed, a total of 627 cubic yards of concrete being placed. Concrete for the remaining 120 linear feet of end wharf floor was placed. Ninety-nine per cent of the dry storage area has been graded and 50 per cent of it has been rolled; and replacing of rip-rap under the wharves was about 70 per cent completed.

Under Washington order No. 40,483, the



stocking and reclaiming bridges were structurally complete, except painting the inside of cabs and houses, and the erection of inspection ladders and platforms in the diggers. About 200 feet of viaduct on the end wharf were erected and riveted, making this item 96 per cent completed. Creosoted ties were installed on the northwest loop and 60 feet of adjacent viaduct, the total to date being 4,670 linear feet of double-track viaduct, or 91 per cent of the entire amount for this item. Eight conveyor cars were assembled and riveted, or a total of 54 to date, making this item 62 per cent completed. The first structural steel for the wharf bunker was erected on January 10, and erection of all structural steel for this item was completed, and 30 per cent riveted. The corrugated iron roof and siding around the top of the wharf bunker is about 30 per cent complete. Work was continued on the four conveyor booms, the erection and riveting of two being completed, and the two remaining being 80 per cent completed. The placing of corrugated iron sheeting on all operators' cabs and machinery houses was completed and all window sash was glazed and painted. About 8,000 pounds of steel plates and shapes were erected on the trailing hoppers, completing the erection of these units.

All unloaders under Washington order No. 40,587 are structurally complete. A trial run with unloader No. 1 was made on January 29, and it is expected that same will be offered formally for official acceptance test in the near future.

#### Marine Division.

Due to the continued blocking of the channel by slides, only 14 vessels of light draft passed through the Canal, of which six were northbound and eight southbound. Of this total, 13 were of American register, including the tug *Polomac* and submarines *C-1*, *C-3*, and *C-5*, of the United States Navy, which made the transit of the Canal in both directions. Five launches were measured and certificates issued thereto. A statement showing vessels making the transit of the Canal in each direction during the month is appended to this report.\*

#### Dredging Division.

The total dredge excavation for the month, including earth, rock, and gravel, was 1,356,904 cubic yards. Of this total 124,310 cubic yards of earth and 4,900 cubic yards of rock were removed from the Balboa inner harbor; 40,456 cubic yards of earth from the Pacific entrance; 88,273 cubic yards of earth and 984,765 cubic yards of rock from Gaillard Cut; 14,707 cubic yards of earth and 23,957 cubic yards of coral rock from the Cristobal coaling station; and 10,490 cubic yards of coral sand and 19,993 cubic yards of coral rock at Coco Solo.

The east and west Culebra slides continued active during the month. The slide at Stations 1559-1567, Buena Vista, has shown some activity, and a large crack or break developed about 300 feet from the prism line. The material both above and below this break has been sluiced down to give an even, regular slope from the hill top to the Canal.

The rock crusher *Vulcan* was engaged the entire month in breaking rock shoals in the Pacific entrance, 3,651 holes being broken over an area of 58,416 square feet, with a total

penetration of 4,952 feet, and a theoretical breakage of 2,940 cubic yards. The drill barge *Teredo No. 2* was engaged the entire month in Gaillard Cut at Culebra slide. One hundred and thirty-eight holes were drilled with a total penetration of 3,842 feet, and 9,100 cubic yards of rock were broken. The hydraulic grader was engaged at Gamboa, standing by the floating crane *Ajax*, furnishing air, etc., during the first part of the month; and in grading in Gaillard Cut and sluicing for drills at Gold Hill, Culebra slide, during the balance of the month. Dredges *No. 1* and *No. 82* were engaged in excavating sand and gravel from the Chagres River, 4,972 cubic yards of sand, 2,779 cubic yards of No. 1 gravel, 6,878 cubic yards of No. 2 gravel, and 30,424 cubic yards of run-of-bank gravel being excavated.

#### Mechanical Division.

Shop orders authorized during the month numbered 1,094, an increase of one as compared with the month of December; those left over from the previous month numbered 943, and those carried forward into February 973. The output of the foundry was 204,461 pounds of iron, 92,205 pounds of steel, and 37,977 pounds of brass. Hostling was done on 4,637 pieces of equipment, and shop and field repairs were made on 8,430. This includes 812 cars repaired in the shop, and 1,444 light and six heavy repair jobs on other equipment. The installation of the electric motor on the second Cristobal dry dock pump was completed, with the result that the time of pumping the dock has been reduced about 30 per cent.

**Fuel oil plants.**—Work on the oil plants consisted of minor cleaning up jobs, in the advancement of these plants toward completion.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following Canal structures were in the course of construction at the places named: *Ancon-Balboa*—The construction of the new concrete verandas and modification of the interior of the old administration building at Ancon was practically completed. The exterior walls for the cold storage beef rooms in the new refrigerating plant at Balboa were completed to the roof; the second floor of the beef rooms was completed, and the placing of cork insulation was commenced. The forms for the roof over the ice tank portion of the building were completed ready for the placing of concrete. The interior of the main engine room was made ready for the installation of ammonia compressors; the submerged platform and pump house on Pier 17, which is being installed for the condenser pumps, was completed; and the construction of the plant as a whole was 60 per cent completed at the end of the month. Construction of the new Ancon Hospital group was continued; building B was completed to the roof line and the placing of roof trusses was commenced. Building C was completed up to and including the roof and the block partitions were placed ready for the plasterers. Building A was completed up to and including the second floor, and the forms for the second story walls were 75 per cent completed. The buildings as a whole were approximately 55 per cent completed at the end of the month. The walls of the new terminal office building at the head of Pier 17 have been completed up to and including the second floor and the forms for the second story walls

were 50 per cent completed. The first floor partition walls were placed, and the building as a whole is approximately 35 per cent completed. The construction of the three-story concrete bachelor building in Ancon, started in December, was continued; at the end of the month the building had been completed up to and including the second floor and the installation of the interior partitions was commenced. This building is approximately 40 per cent completed. The construction of the Ancon Y. M. C. A. building was continued, the building being under roof and approximately 65 per cent completed. Work was commenced on the construction of the new laundry buildings, foundations were placed and work was commenced on the erection of the side wall forms. The construction of a 20-stall garage building in Balboa was commenced, and is 60 per cent completed. **Gatun-Colon**—Work was continued on the construction of the new Colon Hospital group, and at the end of the month these buildings were approximately 90 per cent completed. The relining of the baffle piers at the Gatun Spillway was commenced and practically all of the concrete cutting has been completed. The cast iron plates for these piers were received the last of the month and the work of installing them is being pushed as rapidly as possible.

#### Supply Department.

The force report for the half month ended January 26, 1916, showed a total of 23,707 employees of The Panama Canal and the Panama Railroad Company, of whom 3,595 were white Americans and 20,112 laborers. Of the latter, approximately 185 were Europeans and the remainder West Indian negroes. There was an increase of 1,869 laborers and an increase of 67 Americans, making a net increase of 1,936.

The occupants of Government quarters numbered 6,740 Americans, of whom 3,683 were men, 1,509 women, and 1,548 children; and 9,755 West Indians, of whom 5,639 were men, 1,622 women, and 2,494 children.

The value of material received during the month was \$943,280.23. It came forward in 36 steamers, and the total weight of cargo, exclusive of piling and lumber, was 26,255 tons. Some of the principal items were 5,191,817 feet, board measure, of lumber, 22,876 linear feet of creosoted piling, 172,023 bags of cement, 4,800 cases of dynamite, and 60,929 barrels of fuel oil.

The Balboa oil plant handled 129,378 barrels of fuel oil, and the Mount Hope plant handled 13,091 barrels, the majority at both plants being handled for The Panama Canal.

#### Health Department.

**General**—No case of yellow fever, smallpox, or plague originated on or was brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 31,739, was 10.20 per thousand per year, as compared with 13.29 for the preceding month and 13.72 for the corresponding month of last year.

**Employees**—The health of employees continued good. The number of names on the payrolls for the preceding month was 31,223. On this basis, the admission to hospitals and quarters, 828, gave a rate of 318.23 per thousand, as compared with 307.23 for the preceding month, and 332.87 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites,

\*The information contained in these tables has been published in the weekly reports in THE CANAL RECORD. The statements are therefore not printed.

396.91; blacks, 131.29; and Americans, 206.39. The admission rates to hospitals and quarters for malaria were: Whites, 50.27; blacks, 13.53; and Americans, 42.19. The total number of deaths from all causes was 17. Of these, 13 died from disease or 4.99 per thousand, as compared with 5.01 per thousand for the preceding month, and 4.38 for the corresponding month of last year. One American died from disease, giving a rate of 2.81 per thousand.

#### Accounting Department.

The cash balance in Canal construction appropriations on January 31, 1916, was \$13,263,062.97, and in the fortifications appropriations, \$1,769,832.39. The payrolls for January, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$895,843.47, and the fortification roll amounted to \$48,609.84. Payments by the Disbursing Clerk in Washington amounted to \$889,864.05 and by the Paymaster on the Isthmus, \$1,268,567.79. Payment of \$268,780.92 was also made to the Panama Railroad Company for commissary books. Collections on the Isthmus amounted to \$764,005.97, of which \$461,181.75 was repaid to appropriations, \$267,578.64 was commissary collections and other trust funds, and \$35,245.58 was miscellaneous receipts to be covered into the Treasury. Of the miscellaneous receipts, \$4,639.39 was collected on account of tolls. Collections by the Disbursing Clerk at Washington amounted to \$70,031.53. Deposits in the sum of \$34,000 were made with Assistant Treasurers to be applied in payment of toll and other charges against vessels using the Canal. Canal revenue collections and miscellaneous funds received amounted to \$184,324.80, and the disbursements under the same heading amounted to \$188,628.28.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

Two hundred and seventy-two licenses of all kinds were issued. Nineteen estates were received and 30 settled, the total cash received during the month amounting to \$923.31, the total value of the estates closed being \$777.40. At the port of Balboa 47 vessels entered and 39 cleared, and at the port of Cristobal 58 vessels entered and 50 cleared.

*Postal service*—Postmasters remitted on account of money order fees, stamp sales, second-class mail collections, postage due collections, and box rent receipts, \$5,500. Money orders issued during the month aggregated \$256,053.25. Of this total \$86,615 represents the value of deposit money orders issued without fee, in lieu of postal savings certificates. Deposit money orders were paid to the value of \$67,680 and postal savings certificates to the value of \$2,241. The balance of postal savings deposits on hand at the close of the month, represented by unpaid certificates and deposit money orders, aggregated \$429,642, as compared with \$412,948 at the close of the previous month.

##### POLICE AND FIRE DIVISION.

Four hundred and seven arrests were made. Of this total 373 were males and 34 females. Fifty-seven convicts were confined in the penitentiary at the close of the month. Three convicts who had served their terms in the penitentiary were deported.

Eleven fires occurred, the damage to The Panama Canal property resulting therefrom amounting to \$50, and damage to the Panama Railroad property amounting to \$4,531.

Private property and the property of the United States Army suffered no damage.

#### COURTS.

In the District Court 102 cases were settled; eight civil, 36 probate, and 44 criminal cases were filed, and 122 cases of all kinds were pending at the close of the month. In the magistrates court 16 civil and 392 criminal cases were disposed of.

#### DIVISION OF SCHOOLS.

The total enrollment was 1,441 for the white schools, and 894 for the colored. In the white schools the net enrollment was 1,279, the average daily attendance 1,037, and the average number belonging 1,123.1. In the colored schools the net enrollment was 658, the average daily attendance 459.1, and the average number belonging 527.6.

#### Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including rehandled cargo, amounted to 211,213 tons. In addition, Panama Railroad forces stevedored a total of \$4,161 tons. The following quantities of coal were handled and trimmed in bunkers: Colon agency, 1,700 tons; Balboa agency, 11,713 tons; total, 13,413 tons.

The work on pier No. 7, Cristobal, progressed satisfactorily, 154,481 square feet of forms for the placement of slab and encasement of girders being set, or a total to date of 591,070 square feet, completing this item; 9,444.3 cubic yards of concrete were placed in the floor of the pier, making a total to date of 16,282 cubic yards, completing this item; 265,422 pounds of reinforcing rods for the floor slab were placed, the total to date being 947,970 pounds. This item is now complete. The assembly and erection of structural steel for the shed was commenced on January 12, and 66,966 pounds, or one per cent of the total amount required, was erected; 23,840 cubic yards of backfill were placed, completing this item. Six hundred and thirty-nine squares of roofing tile were manufactured for this pier, making this item 96 per cent completed.

The drilling of six additional preliminary borings for Pier 6 was commenced on January 21, in connection with which 242.8 linear feet of wash drilling and 30.1 linear feet of diamond drilling were made, making this item, on account of the additional borings, 94.5 per cent completed.

Respectfully,

JAY J. MORROW,  
Acting Governor.

#### Amateur Theatricals for Benefit of Red Cross.

An amateur performance of the Gilbert and Sullivan comic opera, "The Pirates of Penzance," is to be given for the benefit of the Red Cross at the National Theatre, Panama, on Saturday, February 26, beginning at 8.30 p. m. Train No. 10 of the Panama Railroad, which ordinarily leaves Panama for Colon at 11.30 p. m. on Saturday night, will be held till 12 midnight.

The initial performance of the opera will be given in Colon on Thursday, February 24, at the Broadway Theatre.

#### The "General Schofield" Returns to Cristobal.

The mineplanter *General J. M. Schofield*, which passed through the Canal from Cristobal to Balboa on January 23, returned to Cristobal on Saturday, February 19.

## LICENSES FOR OIL TANKS.

### Provisions for Emergency Control of Oil in Stock.—Oil Handled in Past Year.

The revocable licenses issued to holders of lots for oil tanks in the Canal terminal tank farms, published in THE CANAL RECORD of February 16, have been modified by the additional provisions that in case of an emergency The Panama Canal may take over whatever stock of oil may be in the tanks, compensation to be made to the licensee for the oil at a fair price, to be determined as in other expropriation proceedings by The Panama Canal; and that whatever oil may be in the tanks is subject to purchase by any vessel using the Canal, all sales to be made at a reasonable rate.

In explaining the necessity of these provisions to one of the licensees, the Governor has written, in part:

"The right of taking over upon the payment of a reasonable compensation, of all the oil which your company may have stored on the Isthmus at any time, is inherent in The Panama Canal under the principle of eminent domain, and this right would exist whether or not a provision to that effect were inserted in the license. The insertion of this condition was prompted by a desire to bring to the attention of licensees all the circumstances under which licenses issued to them were held, so that they might have notice of the fact that, under certain conditions, The Panama Canal might exercise this right. In time of threatened or actual hostilities, or any other extraordinary situation, the United States would expect, if its needs required it, to take over for its own use in connection with the operation of the Panama Canal, or other necessary purposes, any private stock of oil on the Canal Zone, making equitable reimbursement to the owner. The oil company must be held to have had knowledge of the existence of this right in The Panama Canal at the time it made application for a license. It is an inalienable right and one not within the power of any agent of the Government to waive.

"It is, of course, of paramount importance to the authorities of The Panama Canal that the interests of passing ships be properly taken care of, and it was the desire of serving their fuel requirements which prompted the establishment of fuel oil farms on the Isthmus. To hold otherwise would, in effect, mean the placing of all fuel oil facilities on the Isthmus in the hands of a favored group of companies on whose good wishes the rest of the shipping world using the Panama route would be dependent. This certainly was not the purpose it was hoped to accomplish, as the installation of fuel oil plants was primarily intended to serve the interests of the Canal, and not those of individual licensees.

"The licenses granted to fuel oil companies are necessarily in the nature of a privilege, to continue during the pleasure of The Panama Canal, and in consequence, it is necessary for the companies taking advantage of this privilege to trust to the good faith of the Government of the United States not to treat them unjustly and without due regard to the interests and equities of all. You will readily appreciate how difficult it is to define at this time just what conditions might possibly arise in the future and what steps procedure would require to be taken to meet them, and it would seem essential at the very outset that



licensees rely on the fact that they are dealing with the Government of the United States, and that no unnecessary or unwarranted hardships will be imposed upon them.

"You are advised that it is not the wish or intention of The Panama Canal to interfere in any way with licensees in the fulfillment by them of their existing contracts, or with the regular conduct of their business, and that the sole purpose of this provision is to give The Panama Canal control of all supplies on the Canal Zone that it might prevent any unjust discrimination, and to be better able to take care of its needs and those of passing shipping under any exceptional circumstances. An unusual emergency of this kind arose when the slides blocked the Canal and many ships were tied up here and required fuel to change to other routing. Difficulty was experienced in getting oil for such ships at a reasonable price and to avoid a recurrence of such a condition of affairs, the modification of the lease will prevent extortionate prices if it is known that the Government will step in and take charge of the situation if necessary."

The oil handling plants of The Panama Canal have been in operation approximately one year. That at Balboa was placed in partial service in January, 1915, and that at Mount Hope was turned over to the Mechanical Division for operation on February 25, 1915. The operation of the plants was turned over to the Supply Department on September 1. During the year from February 1, 1915, to February 1, 1916, the two plants handled an aggregate of 1,874,460.23 barrels of oil. The greater part of the handling was for The Panama Canal.

The oil handled in each month was as follows:

Month.	Balboa.	Mt. Hope.
	<i>Barrels.</i>	<i>Barrels.</i>
February, 1915.....	99,836.84	
March.....	137,276.09	15,260.33
April.....	174,566.08	10,455.77
May.....	77,067.73	27,333.58
June.....	166,829.57	8,560.64
July.....	107,461.43	7,956.40
August.....	146,330.84	11,459.16
September.....	160,678.11	61,113.89
October.....	190,322.11	45,509.69
November.....	197,881.48	18,006.11
December.....	129,377.64	13,091.05
January, 1916.....	1,655,683.61	218,776.62

Effective September 20, 1915, the rate for pumping oil through the Canal plants was reduced from four cents to three and one-half cents per barrel.

#### Washington's Birthday Celebration at the Panama National Exposition.

The celebration of Washington's Birthday as "American Day" at the National Exposition of Panama attracted an attendance estimated by the director of the exposition as 15,500. Of these 12,000 paid for admission, 2,500 were soldiers, and 1,000 were admitted on passes. The Panama Railroad furnished round-trip transportation at regular one-way fares. The program of entertainment and memorial celebration, which was outlined in THE CANAL RECORD of last week, engaged the attention of part of the crowd during most of the forenoon and afternoon, but the principal interest was shown in the exhibits.

The most important exhibits are those of Panama and the United States. Those from the United States comprise about one-fourth of the United States exhibits at the Panama-

Pacific International Exposition, held in San Francisco; the director of the Panama Exposition was allowed to select at San Francisco the exhibits which he deemed most suitable for use in Panama. His selections comprise agricultural exhibits, exhibits of road building, of mining, of fishing, of oyster and sponge culture, of school work, art, commercial design, an exhibit of historical documents and of Government buildings, and a military and naval exhibit. The exhibits from Panama include work of the schools, from the kindergartens to the advanced colleges, comprising exhibits of technical design and manufacture in brass and iron, of printing and bookbinding, applied design, plumbing and masonry, shoe-making, embroidery, the making of clothes, and the trimming of hats; and exhibits of the soils, minerals, woods, fruits, and general produce, and specimens of the fish and animal life of the country.

#### Two Parties of Tourists Visiting the Isthmus This Week.

A tourist party, containing 130 persons, arrived at Cristobal from New York on the United Fruit Company's steamship *Tenadores* in the morning of Wednesday, February 23. A special train carried the visitors across the Isthmus in the forenoon of the same day, and they will sail on Thursday afternoon. This is a Raymond and Whitcomb party and the second which has visited the Isthmus this season, the first having arrived on the *Pastores* on February 7. It contained 95 persons.

A party of 60, touring under the management of the passenger department of the Illinois Central Railroad, is due to arrive at Cristobal on the *Abangarez*, from New Orleans, on Saturday, February 26.

#### Additions to the Panama Canal Library.

The following is bulletin No. 5 of recent additions to the Canal library at Balboa Heights:

GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS, ETC.  
 Instituto Oswaldo Cruz, Rio de Janeiro. *Memorias de Instituto Oswaldo Cruz*, 1915; volume 7, part 1 (in Portuguese).  
 Porto Rico Coal Company. *San Juan, Porto Rico, coaling station. 1916 yearbook*.  
 Bureau of Education. *Free textbooks and State uniformity*. Bulletin No. 36, 1915. By A. C. Monahan. 1915.  
 Bureau of Education. *Significant school extension records. How to secure them*. Bulletin No. 41. By C. A. Perry. 1915.  
 Bureau of Mines. *Gasoline mine locomotives, in relation to safety and health, with a chapter on methods of analyzing exhaust gases*. Bulletin No. 74. By O. P. Hood, R. H. Kudlich, and Geo. A. Burrell. 1915.  
 Bureau of Mines. *Shot firing in coal mines by electricity controlled from outside*. Technical paper No. 103. By H. H. Clark, N. V. Breth, and C. M. Means. 1915.  
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 Department of Agriculture. *Construction of concrete fence post*. Farmers' bulletin No. 403. 1915.  
 Department of Agriculture. *Corrosion of fence wire*. Farmers' bulletin No. 239. By Allerton S. Cushman. 1915.  
 Department of Agriculture. *Grain farming in the corn belt, with live stock as a side line*. Farmers' bulletin No. 704. By Carl Vrooman, Assistant Secretary. 1916.  
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 Department of Agriculture. *Methods for the examination of bituminous road materials*. Bulletin No. 314. By Prevost Hubbard and Chas. S. Reeve. 1915.  
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 New York State Commission of Highways. *Highway law, New York State, with annotations*.  
 New York State. *Report of the State Commissioner of Highways, 1914*.  
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 Treasury Department. *Decisions of the Comptroller of the Treasury*. Vol. 22, part II. October 1 to December 31, 1915.  
 War Department. *Course of instruction prescribed for student officers in the ordnance school of application (Sandy Hook proving ground) in chemistry of explosives, oils, and coal*. By Capt. B. W. Dunn, U. S. Army. 1916.  
 MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.  
 Almy Water-Tube Company. *Catalogue of patent sectional water-tube boilers*. 12th edition. 1914. List of sizes, Almy's patent sectional water-tube boiler.  
 American Car and Foundry Company. *Catalogue E*, export edition, 1913.  
 Babcock Printing Press Manufacturing Company. *Catalogue of Babcock Optimum presses*.  
 Bramhall Deane Company. *Sterilizing apparatus*. Catalogue No. 21.  
 Buffalo Wire Works Company, Inc. *Catalogue No. 8*, pocket edition.



Burroughs Adding Machine Company, Stopping store leaks, booklet, third edition. Cutting wholesale costs, booklet, second edition. Getting the facts on which to build a better business, booklet. Catalogue of adding, calculating, and bookkeeping machines. A better day's profits. Burroughs posting machine for banks. Efficient cost keeping.

Claflin Engineering Company, Catalogue No. 2 and leaflets on glass glazing, grinding, and polishing machinery.

Eureka Pneumatic Spray Company, Booklet on sprayers, compressors, and air brushes.

General Electric Company, National electric code red core wire and portables, list B-3376. N. E. code cords, list B-3375.

Harris Brothers Seed Company, Yearbook and catalogue of seeds and garden plants.

Ingersoll-Rand Company, Bulletin 8407 on "Little David" pneumatic drills.

Ludlow Valve Manufacturing Company, 1913 catalogue of valves and fire hydrants.

The Macmillan Company, Spring announcement of new Macmillan books, 1916.

Mark Manufacturing Company, Plumbing and well-driving supplies. Catalogue No. 12.

Oiler Machinery Company, Bulletin No. 47-T on 16-inch heavy-duty turret lathe.

G. C. Reiter, Booklet of fire bells and signals. Rotary multiple ringing and single-tap fire bells, booklet. Street car gongs, booklet. Crane gongs, leaflet.

E. W. Stillwell and Company, Booklet on little bungalows. Booklet on west coast bungalows.

Turner Machine Company, Automatic cock grinders, moulding machines, key lathes, and foundry equipment. Catalogue.

Ward's Natural Science Establishment, Price list of entomological supplies. Catalogue No. 30. Circulars and price lists of natural history material and apparatus.

The following is a revised list of periodicals and newspapers received regularly:

Army List and Directory. Monthly. Washington.

Bulletin of the Bureau of Standards. Monthly. Washington.

Coal Mine Fatalities in the United States. Monthly. Washington.

Commerce Reports. Daily. Washington.

Congressional Record. Daily. Washington.

Daily Bulletin of Orders Affecting the Postal Service. Washington.

Engineering Station Record. Monthly. Washington.

Flood Prevention Decisions. Weekly. Washington.

Hydrographic Bulletin. Weekly. Washington.

Hydrographic Office Notice to Mariners. Weekly. Washington.

List of publications issued by Department of Agriculture. Monthly. Washington.

List of publications issued by Department of Commerce. Monthly. Washington.

Monthly Review of the United States Bureau of Labor Statistics. Washington.

Monthly Weather Review. Washington.

Navy and Marine Corps List and Directory. Monthly. Washington.

Philippine Government Monthly Journal. Manila.

Philippine Bureau of Public Works. Quarterly Bulletin. Manila.

Pilot charts—one each for North Atlantic, South Atlantic, North Pacific, South Pacific, and Indian Oceans. Weekly. Washington.

Postal Guide Supplement. Monthly. Washington.

Public Health Reports. Monthly. Washington.

Register of the Department of State. Monthly. Washington.

Register of Diplomatic and Consular Officials of the United States. Monthly. Washington.

Revista de Instrucción Pública. Monthly. Panama.

Treasury Decisions. Weekly. Washington.

United States Naval Medical Bulletin. Monthly. Washington.

Weather Map. Daily. Washington.

Weekly News Letter. Department of Agriculture. Washington.

The American Contractor. Monthly. Chicago.

American Lumberman. Weekly. Chicago.

Anales de Ingenieria. Monthly. Bogotá.

Army and Navy Journal. Weekly. New York.

Barge Canal Bulletin. Monthly. Albany.

Best Furnace and Steel Plant. Monthly. Pittsburgh.

Bulletin of the American Library Association. Monthly. Chicago.

Bulletin of the Pan-American Union. Monthly. Washington.

Compressed Air Magazine. Monthly. Easton, Pa.

Diario de Panama. Daily. Panama.

Electrical World. Monthly. New York.

Engineering and Contracting. Monthly. Chicago.

Engineering Record. Weekly. New York.

Export American Industries. Monthly. New York.

The Florida Grower. Weekly. Tampa.

Gaceta Oficial. Daily. Panama.

The Guide (Shipping). Weekly. San Francisco.

Journal of Commerce. Daily. New York.

Journal of Commerce. Daily. Liverpool.

La Prensa. Daily. Panama.

La Tribuna Italiana. Weekly. Chicago.

Live Stock and Dairy Journal. Monthly. Sacramento.

Lloyd's List. Daily. London.

Oregon Voter. Weekly. Portland.

Pacific Marine Review. Monthly. San Francisco.

Pan-American Magazine. Monthly. New York.

Rail Cross Magazine. Monthly. Washington.

Scientific American. Weekly. New York.

Shipping Gazette Weekly Summary. London.

Star and Herald. Daily. Panama.

West Coast Leader. Weekly. Lima, Peru.

Billard News. Monthly. Brunswick, Balke, Colender Co., Chicago.

Coast Seamen's Journal. Weekly. San Francisco.

Concrete (Cement Age). (Cement mill edition). Monthly. Detroit.

The Cowboy Clipper. Bimonthly. American Hoist and Derrick Co., St. Paul.

The Firefly. Monthly. Pyrene Mfg. Co., New York.

The Foot Specialist. Monthly. Scholl Mfg. Co., Chicago.

General Electric Review. Monthly. Schenectady.

General Fireproofing. Monthly. General Fireproofing Co., Youngstown, Ohio.

The Goodrich. Monthly. B. F. Goodrich Co., Akron, Ohio.

The Highway Magazine. Monthly. Middletown, Ohio.

Ideal Power. Monthly. Chicago Pneumatic Tool Co., Chicago.

Locomotive Engineers' Journal. Monthly. Cleveland.

Lubrication. Monthly. Texas Oil Co., New York.

Mexpet Record. Monthly. Mexican Petroleum Company, New York.

The Nation's Business. Monthly. Chamber of Commerce of the United States, Washington.

Personal Efficiency. Monthly. Chicago.

The Plate Makers' Criterion. Monthly. The Ostrander-Seymour Co., Chicago.

Railway Carmen's Journal. Monthly. Kansas City.

Reactions (Aluminothermics). Quarterly. New York.

Standard Oil Bulletin. Monthly. San Francisco.

Steam Shovel and Dredge. Monthly. Chicago.

Steel and Iron. Monthly. Pittsburgh.

Through the Meshes. Monthly. W. S. Tyler Co., Cleveland.

Timken Magazine. Monthly. Timken Company, Detroit.

The Valve World. Monthly. Crane Company, Chicago.

ASSOCIATION MEMBERSHIPS.

American Library Association.

American Society for Testing Materials.

The library is holding duplicates of many of the catalogues recently acquired and they may be issued to any office requiring copies for official use.

Suggestions are invited as to catalogues or other publications of interest to the office.

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., February 21, 1916.

The following insufficiently addressed letters have been received at the office of the Director of Posts and may be procured upon request of the addressees:

Adams, Spenser	Johnson, Mrs. Ella
Bayley, Dan	Mrs. Lena
Duprey, Frederick	McKinney, Mrs. G. L.
Frank Stansky	McPherson, J. L.
Herman, F. O.	Richards, Walter
Jeffrey, Palmer	*Webster, Leigh
*Card.	

#### Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, February 19, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun Lake.	Miraflores Lake.	
Sun., Feb. 13.....	125.25	91.72	86.34	86.32	53.63
Mon., Feb. 14.....	125.25	91.79	86.33	86.31	53.80
Tues., Feb. 15.....	126.10	92.47	86.36	86.32	54.31
Wed., Feb. 16.....	125.85	92.40	86.41	86.31	54.86
Thurs., Feb. 17.....	127.00	93.13	86.40	86.39	54.19
Fri., Feb. 18.....	126.55	92.93	86.48	86.43	54.20
Sat., Feb. 19.....	125.65	92.56	86.48	86.44	54.19
Heights of low water to nearest foot.....	125.0	91.0			

## OFFICIAL CIRCULARS.

### Board of Health Ordinance.—Milk and Cream Containers.

THE PANAMA CANAL, EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., February 12, 1916.  
CIRCULAR NO. 708-3.

The ordinance quoted below, enacted by the Board of Health, is approved, and published for the information of all concerned.

JAY J. MORROW,  
Acting Governor.

#### ORDINANCE NO. 8.

Be it ordained by the Board of Health of the Canal Zone:

1. It shall be the duty of every person having in his possession bottles, cans, or other receptacles containing milk or cream, which are used in the transportation or delivery of milk or cream, to clean or cause them to be cleaned immediately upon emptying; and no person shall receive or have in his possession any such receptacle which has not been washed after holding milk or cream, or which is unclean in any way.

2. The foregoing ordinance was duly enacted at a meeting of the Board of Health of the Canal Zone held at Balboa Heights, Canal Zone, on the 10th day of February, 1916.

CHAS. F. MASON,  
Chairman, Board of Health.

#### Appointments.

THE PANAMA CANAL, EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., February 10, 1916.  
CIRCULAR NO. 661-25.

Effective this date, Mr. R. H. Whitehead is appointed superintendent, and Mr. W. R. Holloway is appointed assistant superintendent, Pacific locks.

JAY J. MORROW,  
Acting Governor.

### Stock in Obsolete Store which May Be Required for Use.

THE PANAMA CANAL, SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., February 15, 1916.

To heads of all departments—We have just recently disposed of some equipment by sale from our obsolete store at Mount Hope which is now required for use of The Panama Canal, and in order to avoid a repetition of this, it is requested that you have an inspection made of your Mount Hope stock by a representative of your department and advise this department of such items as it is considered can be used, which items will then be transferred to our regular stock.

WM. R. GROVE,  
Chief Quartermaster.

### In Charge of Construction Work at the Pacific Terminals.

THE PANAMA CANAL, DEPT. OF OPERATION AND MAINTENANCE,  
BALBOA HEIGHTS, C. Z., February 14, 1916.

To all concerned—Effective February 15, and until the return of Assistant Engineer H. D. Hinman from leave, Supervisor E. W. Baldwin will be in immediate charge of construction work, Pacific terminals, Division of Terminal Construction.

H. H. ROUSSEAU,  
Engineer of Terminal Construction.

#### Accountable Official.

THE PANAMA CANAL, ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., February 15, 1916.  
CIRCULAR NO. 115:

Effective this date, Mr. A. Bryan is designated an accountable official of The Panama Canal, vice Mr. Wm. H. Maxey, and as such will account for all stock carried in the stationery storehouse in the Administration Building.

H. A. A. SMITH,  
Auditor, The Panama Canal.

#### Accountable Official.

THE PANAMA CANAL, ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., February 12, 1916.

To accountable officials—The accountability of Mr. W. G. Thompson, transferred during his leave to Mr. R. A. Wilson, was again assumed by Mr. Thompson under date of February 4, 1916.

H. A. A. SMITH,  
Auditor, The Panama Canal.

## COMMISSARY DEPARTMENT.

## Wholesale Prices of Fresh Meats.

The following is the wholesale price list No. 207, effective November 11, 1915, and in force until further notice. This list will govern, whether meat is sold from commissaries or from cold storage. The following prices will be increased by 10 per cent in cases of sales to commercial ships and foreign naval vessels, and by 20 per cent in cases of sales to yachts:

1. Beef hinds, No. 1.....	per lb.	\$0.194
2. Beef hinds, No. 2.....	per lb.	.15
3. Beef hinds, native.....	per lb.	.094
4. Beef loins, No. 2.....	per lb.	.12
5. Beef loins, native.....	per lb.	.084
6. Beef, whole round or leg, No. 1.....	per lb.	.144
7. Beef, whole round or leg, No. 2.....	per lb.	.11
8. Beef, whole round or leg, native.....	per lb.	.07
9. Beef ribs, No. 1.....	per lb.	.24
10. Beef ribs, No. 2.....	per lb.	.16
11. Beef ribs, native.....	per lb.	.10
12. Beef, short loins, No. 1.....	per lb.	.25
13. Beef, short loins, native.....	per lb.	.20*
14. Beef, short loins, native.....	per lb.	.15
15. Beef, rumps, No. 1.....	per lb.	.204
16. Beef, rumps, native.....	per lb.	.17
17. Beef, rumps, native.....	per lb.	.12
18. Lamb carcasses.....	per lb.	.18
19. Mutton carcasses.....	per lb.	.14
20. Pig carcasses.....	per lb.	.144
21. Pork, entire loins.....	per lb.	.16
22. Veal carcasses.....	per lb.	.23*
23. Veal leg.....	per lb.	.31*

\*Indicates increase from last list.

†Indicates decrease from last list.

Above prices do not include cost of special trimming required by United States Army or United States Navy.

The prices quoted in current retail cold storage list will govern for all other items, not included in above.

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, February 24, 1916:

FISH.		Price.
Fresh fish, per lb.....		.11
Turtle (wt. 100 to 200 lbs.), per lb.....		.07
FRUITS.		
Coconuts, dry, ea.....		.05
Coconuts, water, ea.....		.05
Pineapples, ea.....		.11
Sugar cane, ea.....		.03
Plantain, ea.....		.01
VEGETABLES.		
Celery, soup, per bunch.....		.04
Ginger, per lb.....		.05
Lettuce, per lb.....		.11*
Mint, per bunch.....		.03
Okra, ea.....		.004
Onions, green, per bunch.....		.04
Parsley, per bunch.....		.04
Peppers, hot, per doz.....		.04
Radishes, per bunch.....		.04
Spinach, per doz.....		.02
Yampi, per lb.....		.04
MISCELLANEOUS.		
Rees (Hospital Farm), per doz.....		.50
Charcoal, 30-lb. sack.....		.30

\* Indicates advance from last list.

† Indicates reduction from last list.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m. and 3 to 6.30 p. m.

The Pedro Miguel store is open from 8 a. m. to 12 m., and from 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## Additions to Stock.

Bedsprings, linen, embroidered, 90" by 108" ea. \$5.60  
Bedsprings, linen, embroidered, 90" by 108" ea. 2.85  
Boxes, soap, celluloid, 44 1/2" ea. .33  
Clothes, tea, H. S. & Co. embroidered, 45" ea. 1.10  
Clothes, tea, H. S. & Co. embroidered, 54" ea. 2.20  
Corsets, W. B. B. & Co. 4408, 20" ea. 3.45  
Covers, cushion, embroidered, 24 1/2" ea. .25  
Covers, cushion, embroidered, 51 1/2" ea. .40  
Lace insertion, French val, yd..... .03  
Lace insertion, French val, yd..... .04

Lace insertion, French val, yd.....	\$0.01
Lace insertion, French val, yd.....	.02
Lace insertion, French val, yd.....	.07
Lace, bretonne net, yd.....	.13
Lace, bretonne net, yd.....	.19
Lace, bretonne net, yd.....	.25
Lace, d'esprit net, yd.....	.20
Lace, d'esprit net, yd.....	.28
Lace edging, French val, yd.....	.02
Lace edging, French val, yd.....	.01
Voile, corded, yd.....	.16
Voile, corded, P. J. yd.....	.25
Belts, Palm Beach, without buckle, ea.....	1.10
Belts, Palm Beach, without buckle, ea.....	.24
Blouses, midgy, white, short sleeves, ea.....	.12
Blouses, midgy, white, short sleeves, ea.....	.93
Blouses, midgy, white, short sleeves, ea.....	.55
Blouses, midgy, white, short sleeves, ea.....	.24
Blouses, midgy, white, short sleeves, ea.....	.27
Blouses, midgy, white, short sleeves, ea.....	.28
Blouses, midgy, white, short sleeves, ea.....	.33
Lace flouncing, yd.....	.50
Lace flouncing, yd.....	.57
Lace flouncing, yd.....	.30
Pins, hair, plain, shell, doz.....	.30
Pins, hair, plain, shell, doz.....	.30
Pins, hair, plain, shell, doz.....	.30
Pins, hair, plain, shell, doz.....	.30

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective February 15:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Boats, sauce, ea.....	\$3.85	\$4.10
Bowls, mixing, ea.....	.20	.24
Bowls, mixing, ea.....	.14	.16
Bowls, mixing, ea.....	.06	.09
Bowls, salad, ea.....	1.20	1.35
Buckets, ea.....	.22	.16
Crisp, baby, ea.....	5.50	5.00
Glue, tube, ea.....	.07	.09
Holders, toothpick, ea.....	.04	.06
Percolators, ea.....	1.10	.96
Knives, cook, ea.....	.40	.35
Locks, Yale, ea.....	.68	.71
Locks, Yale, ea.....	.83	.78
Locks, Yale, ea.....	1.45	.91
Mats, ea.....	1.15	1.05
Mop heads, ea.....	.11	.15
Pails, plant, ea.....	.40	.47
Percolators, ea.....	5.45	6.20
Plates, ea.....	.38	.48
Plates, ea.....	.30	.36
Plates, ea.....	.05	.06
Platters, fish, ea.....	11.20	17.90
Platters, meat, ea.....	5.65	6.00
Platters, meat, ea.....	8.50	9.00
Polish, furniture, bot.....	.16	.25
Pots, watering, ea.....	.47	.78
Racks, towel, ea.....	.20	.25
Sauces, ea.....	.50	.40
Saws, ea.....	1.05	.80
Scales, ea.....	1.15	.55
Sets, table, ea.....	.45	.53
Springs, bed, ea.....	5.00	4.40
Springs, bed, ea.....	4.20	3.75
Stoves, N. P., ea.....	7.20	7.75
Trunks, manse, ea.....	.04	.07
Tubs, wash, ea.....	.67	.88
Wicks, ea.....	.03	.03
Tobacco, Pride of Reidville, bag.....	.10	.05
Grape juice, Welch's, split, bot.....	.13	.11
Beans, string, gal, tin.....	.42	.46
Milk, Nestlé's, tin.....	.11	.13

## Schedule of Launch Service to Taboga.

Following the placing of the new gasoline launch Taboga in service, the schedule of launch sailings between Balboa and Taboga Island has been revised, effective February 1, and is now as follows:

From Balboa—Daily, launch Taboga leaves for Taboga 9.45 a. m., and at 9.50 p. m.  
From Taboga—Daily, launch Taboga leaves for Balboa at 10.45 a. m., and at 6.45 p. m. The 10.45 a. m. trip from Taboga may be delayed at times to 2 p. m., under orders given by the Chief Quartermaster, the manager of the Hotel Aspinwall, or the Captain of the Port of Balboa.

On Mondays and days following holidays the launch Aspinwall will be used to supplement the regular daily service, leaving the dredge landing for Taboga at 5 a. m., and returning from Taboga at 6.30 a. m.

## Fuel.

Coal is supplied in vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per ton, \$1.00; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the private corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 50 shillings per ton of seven barrels.

## SHIPPING INFORMATION.

## Tide Predictions.

Panama (Balboa) tide predictions for the next six weeks are given in this table:

## FEBRUARY.

DATE.	Time and height of high and low water.		
Wed., Feb. 23.....	14:8	0.7	15.4
Thurs., Feb. 24.....	0:27	6:30	12:38
Fri., Feb. 25.....	0:7	14.6	1.0
Sat., Feb. 26.....	1:53	7:09	13:19
Sun., Feb. 27.....	1:53	7:52	14:07
Mon., Feb. 28.....	2:47	8:44	15:05
Tues., Feb. 29.....	2:8	13.0	13.7
	3:51	9:50	16:13
	2:7	12.6	3.5
	5:02	11:11	17:28
	6:15	12:30	18:44
	2.5	13.0	3.1

## MARCH.

DATE.	Time and height of high and low water.		
Wed., March 1.....	0:56	7:24	13:36
Thurs., March 2.....	1:37	1.8	14.0
Fri., March 3.....	1:59	8:22	14:32
Sat., March 4.....	1:44	0.8	15.0
Sun., March 5.....	2:53	9:13	15:22
Mon., March 6.....	3:43	9:58	16:09
Tues., March 7.....	15:7	-0.7	16.5
Wed., March 8.....	4:33	10:41	16:53
Thurs., March 9.....	5:16	11:21	17:34
Fri., March 10.....	15:9	-0.7	17.5
Sat., March 11.....	5:12	12:00	18:10
Sun., March 12.....	0:25	0.0	16.0
Mon., March 13.....	0:13	6:37	12:41
Tues., March 14.....	0:1	14.9	0.9
Wed., March 15.....	1:03	7:16	13:39
Thurs., March 16.....	1:0	14.0	7.0
Fri., March 17.....	1:47	7:55	14:07
Sat., March 18.....	2:1	13.0	3.2
Sun., March 19.....	2:36	8:39	15:00
Mon., March 20.....	3:33	9:36	16:04
Tues., March 21.....	4:3	11.1	5.1
Wed., March 22.....	4:40	10:55	17:14
Thurs., March 23.....	4:7	10.7	5.5
Fri., March 24.....	5:49	12:18	18:23
Sat., March 25.....	4:7	10.9	3.2
Sun., March 26.....	0:31	6:54	13:19
Mon., March 27.....	1:1	14.3	11.6
Tues., March 28.....	1:30	7:48	14:04
Wed., March 29.....	12.0	3.5	12.4
Thurs., March 30.....	2:14	8:34	14:42
Fri., March 31.....	12.8	2.8	2.4
Sat., March 1.....	2:55	9:13	15:17
Sun., March 2.....	13.6	1.7	14.3
Mon., March 3.....	3:53	9:49	15:52
Tues., March 4.....	4:11	10:25	16:26
Wed., March 5.....	4:19	0.5	15.6
Thurs., March 6.....	4:49	11:00	17:03
Fri., March 7.....	15.2	0.2	16.0
Sat., March 8.....	5:28	11:37	17:41
Sun., March 9.....	15.4	0.2	16.0
Mon., March 10.....	0:03	6:07	12:16
Tues., March 11.....	0:2	15.2	0.6
Wed., March 12.....	0:44	6:51	13:00
Thurs., March 13.....	0:3	14.8	1.2
Fri., March 14.....	1:32	7:37	13:51
Sat., March 15.....	1.0	14.2	1.1
Sun., March 16.....	2:28	8:32	14:52
Mon., March 17.....	1.8	13.4	3.0
Tues., March 18.....	3:35	9:40	16:04
Wed., March 19.....	4:48	10:22	16:50
Thurs., March 20.....	4:47	11:01	17:21
Fri., March 21.....	2.9	12.7	3.6
Sat., March 22.....	5:59	12:19	18:32
Sun., March 23.....	2.0	13.3	4.0
Mon., March 24.....	0:48	7:05	13:22
Tues., March 25.....	13.2	2.1	14.1
Wed., March 26.....	1:49	8:03	14:15
Thurs., March 27.....	14.0	1.2	15.0

## APRIL.

DATE.	Time and height of high and low water.		
Sat., April 1.....	2:40	8:52	15:01
Sun., April 2.....	14.7	0.5	15.7
Mon., April 3.....	3:9	9:36	15:43
Tues., April 4.....	15.2	0.0	16.1
Wed., April 5.....	4:09	10:17	16:24
Thurs., April 6.....	15.3	-0.1	16.2
Fri., April 7.....	10:36	17.90	23:16
Sat., April 8.....	15.4	0.1	15.9
Sun., April 9.....	5:29	11:33	17:42
Mon., April 10.....	15.1	0.6	15.4

The times are placed in the order of occurrence, with their dates on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m. February 20, 1916.)

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Feb. 19.....	Gen. J. M. Schofield	American.....	U. S. Army (mine planter)	Balboa.....	Cristobal.....	Ballast.....			

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
Feb. 15.....	Jason.....	U. S. Navy.....	Norfolk.
Feb. 22.....	Haiti.....	La Veloce Line.....	Genoa.
Feb. 26.....	Europa.....	Inter. Petroleum Co.....	New York.
Feb. 18.....	Limolite.....	United States Survey ship	San Blas coast.
Feb. 18.....	Hannibal.....		

## \*DEPARTURES.

Date	Vessel	Line	For
Feb. 16.....	Fred'h Luckenbach	Luckenbach Line.....	New York.
Feb. 18.....	Windber.....	Pacific American Fisheries.....	Seattle.
Feb. 18.....	A. J. West.....	Manila Import Co.....	New York.
Feb. 19.....	Alcon.....	Panama Railroad Line.....	New York.
Feb. 19.....	Jason.....	United States Navy.....	Hampton Roads.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From
Feb. 21.....	Patria.....	Cuban Government.....	Havana.
Feb. 22.....	Haiti.....	Cie General Transque	Bordeaux.
Feb. 26.....	Carina.....	Elders & Fyfes.....	Port Limon.
March 3.....	Albanian.....	Leyland Line.....	Liverpool.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	For
Feb. 25.....	Haiti.....	French Line.....	Bordeaux.
Feb. 25.....	Limolite.....	Inter. Petroleum Company.....	Taboga.
Feb. 25.....	Patria.....	Cuban Government.....	Unknown.
Feb. 25.....	Albanian.....	Leyland Line.....	Unknown.
Feb. 26.....	Carina.....	La Veloce Line.....	Mejillones.
Feb. 26.....	Carina.....	Elders & Fyfes.....	Bristol.
Feb. 26.....	Wisdom.....	Private yacht.....	Unknown.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From
Feb. 14.....	Paraíso.....	Long Beach S. S. Co.....	Tacoma.
Feb. 15.....	Hesperos.....	Brussard Kinstern.....	San Francisco.
Feb. 16.....	Geo. W. Elder.....	North Pacific S. S. Co.....	San Francisco.
Feb. 16.....	J. A. Moffett.....	Standard Oil Company.....	San Francisco.
Feb. 16.....	S. O. barge No. 93.....	H. T. Donnell.....	Taboga.
Feb. 17.....	T. Ellis.....	Santa Maria S. S. Co.....	Port San Luis.
Feb. 19.....	Canca.....	Pacific Steam Nav. Co.....	Guayaquil.
Feb. 20.....	Solovador.....	Pacific Steam Nav. Co.....	Guayaquil.

## DEPARTURES.

Date	Vessel	Line	For
Feb. 13.....	Alicia.....	Panama Transport Co.....	Panama.
Feb. 15.....	H. T. Donnell.....	Panama Transport Co.....	Guayaquil.
Feb. 15.....	Manana.....	Pacific Steam Nav. Co.....	San Francisco.
Feb. 15.....	Edith.....	Luckenbach Line.....	Valparaiso.
Feb. 15.....	Huaso.....	South American S. S. Co.....	Valparaiso.
Feb. 16.....	Hesperos.....	Brussard Kinstern.....	San Francisco.
Feb. 17.....	San Juan.....	Pacific Mail S. S. Co.....	Punta Arenas.
Feb. 17.....	Cleveland.....	United States Navy.....	Guayaquil.
Feb. 18.....	Paraíso.....	Long Beach Steamship Co.....	Guayaquil.
Feb. 18.....	J. A. Moffett.....	Standard Oil Company.....	San Francisco.
Feb. 18.....	S. O. barge No. 93.....	Standard Oil Company.....	San Francisco.
Feb. 18.....	T. Ellis.....	H. T. Donnell.....	San Francisco.
Feb. 20.....	Geo. W. Elder.....	North Pacific S. S. Co.....	San Francisco.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date	Vessel	Line	From	Date	Vessel	Line	For
Feb. 21.....	San Francisco.....	Johnson Line.....	So. American ports	Feb. 21.....	Santa Maria.....	Santa Maria S. S. Co.....	Port San Luis.
Feb. 21.....	Guatemala.....	Pacific Steam Nav. Co.....	Chilean ports.	Feb. 21.....	Hualala.....	Peruvian Line.....	Callao.
Feb. 24.....	Denver.....	United States Navy.....	Nicaragua.	Feb. 26.....	Guatemala.....	Pacific Steam Nav. Co.....	Chilean ports.

water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea-level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Comopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 13:47 is 1:47 p. m.

## Rainfall from February 1 to 19, 1916, Inclusive.

STATIONS.		Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>				
Balboa.....	Ins.	78	17	1.36
Balboa Heights.....	Ins.	74	18	1.42
Miraflores.....	Ins.	15 & 17	14	.51
Pedro Miguel.....	Ins.	16	17	.54
Rio Grande.....	Ins.	33	17	.88
<b>Central Section—</b>				
Culebra.....	Ins.	42	16	1.32
Camacho.....	Ins.	27	18	1.01
Empire.....	Ins.	40	17	1.18
Gambo.....	Ins.	66	17	1.13
Juan Mina.....	Ins.	45	18	1.71
Alhajuela.....	Ins.	23	16	.74
Vieja.....	Ins.	36	15	.95
Frijoles.....	Ins.	67	17	2.16
Monte Lirio.....	Ins.	35	17	1.17
<b>Atlantic Section—</b>				
Catun.....	Ins.	35	10	1.54
Brazos Brook.....	Ins.	1.12	4	2.72
Colon.....	Ins.	36	16	1.33
Bocas del Toro.....	Ins.	53	15	2.69

\*Standard rain gauge—readings at 3 p. m. daily.  
Automatic rain gauge at unstarred stations—values, midnight to midnight.  
†Standard rain gauge—readings at 8 a. m. daily.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone post office.

Every Sunday to New Orleans, for all States.  
Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, March 6 and April 3, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the sailings on March 6 and April 3.

When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas and Texas is held for the direct despatch to New Orleans on the following Sunday.

Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Santa Marta.....	U. F. C.	Feb. 16.....	Feb. 23
Advance.....	P. R. R.	Feb. 17.....	Feb. 24
Metapana.....	U. F. C.	Feb. 19.....	Feb. 28
Almirante.....	U. F. C.	Feb. 23.....	Mar. 1
Panama.....	P. R. R.	Feb. 24.....	Mar. 1
Pastores.....	U. F. C.	Feb. 26.....	Mar. 1
Zacapa.....	U. F. C.	Mar. 1.....	Mar. 8
Allianca.....	P. R. R.	Mar. 2.....	Mar. 8
Calamares.....	U. F. C.	Mar. 4.....	Mar. 12
Carrillo.....	U. F. C.	Mar. 8.....	Mar. 15
Colon.....	P. R. R.	Mar. 9.....	Mar. 15
Tenadores.....	U. F. C.	Mar. 11.....	Mar. 19

Santa Marta..... U. F. C. Mar. 15..... Mar. 22  
Advance..... P. R. R. Mar. 16..... Mar. 23

## CRISTOBAL-COLON TO NEW YORK.

Vessel.	Line.	Sails.	Arrives.
Colon.....	P. R. R.	Feb. 24.....	Mar. 1
Carrillo.....	U. F. C.	Feb. 24.....	Mar. 2
Tenadores.....	U. F. C.	Feb. 28.....	Mar. 6
Advance.....	P. R. R.	Mar. 2.....	Mar. 9
Santa Marta.....	U. F. C.	Mar. 2.....	Mar. 9
Metapana.....	U. F. C.	Mar. 6.....	Mar. 14
Panama.....	P. R. R.	Mar. 9.....	Mar. 15
Almirante.....	U. F. C.	Mar. 9.....	Mar. 16
Pastores.....	U. F. C.	Mar. 13.....	Mar. 20
Allianca.....	P. R. R.	Mar. 16.....	Mar. 22
Zacapa.....	U. F. C.	Mar. 16.....	Mar. 23
Calamares.....	U. F. C.	Mar. 20.....	Mar. 27
Colon.....	P. R. R.	Mar. 23.....	Mar. 29

## NEW ORLEANS TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Abangarez.....	U. F. C.	Feb. 19.....	Feb. 26
Cartago.....	U. F. C.	Feb. 27.....	Mar. 6
Atenas.....	U. F. C.	Feb. 26.....	Mar. 10
Heredia.....	U. F. C.	Mar. 1.....	Mar. 6
Turrialba.....	U. F. C.	Mar. 4.....	Mar. 11
Parishmina.....	U. F. C.	Mar. 8.....	Mar. 13
Abangarez.....	U. F. C.	Mar. 11.....	Mar. 18
Cartago.....	U. F. C.	Mar. 15.....	Mar. 20
Atenas.....	U. F. C.	Mar. 18.....	Mar. 25
Heredia.....	U. F. C.	Mar. 22.....	Mar. 27
Turrialba.....	U. F. C.	Mar. 25.....	Mar. 31
Parishmina.....	U. F. C.	Mar. 29.....	April 3

## CRISTOBAL-COLON TO NEW ORLEANS.

Vessel.	Line.	Sails.	Arrives.
Coppename.....	U. F. C.	Feb. 27.....	Mar. 3
Cartago.....	U. F. C.	Feb. 27.....	Mar. 6
Atenas.....	U. F. C.	Mar. 5.....	Mar. 10
Atenas.....	U. F. C.	Mar. 5.....	Mar. 13
Heredia.....	U. F. C.	Mar. 12.....	Mar. 17
Turrialba.....	U. F. C.	Mar. 12.....	Mar. 20
Parishmina.....	U. F. C.	Mar. 12.....	Mar. 24
Abangarez.....	U. F. C.	Mar. 19.....	Mar. 27
Cartago.....	U. F. C.	Mar. 26.....	Mar. 31
Atenas.....	U. F. C.	Mar. 26.....	April 3





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll. Bound volumes are for sale at \$2.50 each.

All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, 1916, on this basis; and subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Dredging in the Cut in February.

In the 29-day month of February the dredges working at the bases of the Culebra slides excavated a total of 1,039,950 cubic yards, and the *Cascadas*, *Gamboa*, and *Corozal* made new monthly records, with 330,605; 293,230; and 179,880 cubic yards, to their credit, respectively. The *Paraiso* excavated 236,235 cubic yards, but had previously made a higher record for a month.

The dredges rehandling spoil disposed of 223,436 cubic yards. None of the three dredges engaged in rehandling was in this service during the entire month.

#### Excavation from the Cut during the Past Week.

Excavation at the bases of the Culebra slides during the week ending at midnight of Monday, February 28, amounted to 246,375 cubic yards. In addition, 61,850 cubic yards were rehandled by the pipeline suction dredge No. 86, the seagoing suction dredge *Culebra*, and the Belgian ladder dredge No. 5.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
<i>Cascadas</i> .....	15-yard dipper.....	72,870
<i>Gamboa</i> .....	15-yard dipper.....	77,540
<i>Paraiso</i> .....	15-yard dipper.....	58,250
<i>Corozal</i> .....	Ladder.....	37,715
<i>Culebra</i> .....	Seagoing suction.....	29,283
No. 86.....	Pipeline suction.....	23,236
No. 5.....	Belgian ladder.....	9,331

The average aggregate output of the dredges in the Cut during the 18 weeks preceding that ending at midnight of Monday, February 28, was 257,778 cubic yards per week, the total amount of primary excavation during that period (since October 19) having been 4,639,996. This has been an average of 36,825 cubic yards for each of the 126 days.

#### Arrival of Colliers with Barges.

The Canal collier *Ulysses*, which, as reported last week, lost her tow of a 1,000-yard barge about 400 miles north of Watlings Island, by the breaking of the towing line in a heavy sea, reached Cristobal in the morning of Monday, February 28, having been delayed several days in recovering the tow.

The Canal collier *Achilles*, which sailed from Norfolk with a 3,000-yard barge in tow six days after the departure of the *Ulysses*, arrived at Cristobal in the morning of Tuesday, February 29.

The barges were taken in tow at Cristobal by claret No. 4 for passage to Gatun Lake, to be added to the fleet of the Dredging Division working in the Cut.

#### Signal Station on Top of Sosa Hill.

A signal station is to be erected on the highest point of Sosa Hill, at an elevation of 363 feet, for the control of ships in the channel between Balboa and Miraflores Locks. Heretofore it has been necessary to send out a boat to intercept a ship in this section of the Canal if communication was required. The station will be similar in general arrangement to the station at La Pita, on the east bank of the Canal between Gamboa and Gold Hill. On the top of the hill, it will be visible to ships all over the harbor of Balboa as well as in the channel to Miraflores Locks. This station will be equipped with a time ball service for the convenience of shipping.

#### Hydrographic Office Publications Obtainable at the Canal.

Some of the duties of branch hydrographic offices are performed by the offices of the Captain of the Port at Balboa and Cristobal. In addition to the maintenance of chronometers for comparisons, the offices keep at hand reference charts and sailing directions which may be consulted, and observers' blanks may be obtained at the same time. Masters of vessels may receive free the Pilot Charts, Notice to Mariners, and Hydrographic Bulletin, published by the Hydrographic Office of the Navy Department, in return for reports on marine and meteorological data.

Various Hydrographic Office publications which are not distributed free of charge may be purchased through the Port Captains. These include such publications as are most likely to be required by ships using the Canal.

Neither Port Captain's office maintains a regular mailing list for the distribution of publications; such mailing lists are maintained at the branch hydrographic offices along the United States coast, at Boston, New York, Philadelphia, Baltimore, Norfolk, Savannah, New Orleans, and Galveston, on the Atlantic side, and at San Francisco, Portland, and Seattle on the Pacific side, as well as at the main Hydrographic Office in Washington, for the benefit of ships' officers who contribute data regularly.

#### CHARGES AT TERMINALS.

##### Revised Circular Covering Wharfage, Cranage, Stevedoring and Transferring, etc.

A revised circular setting forth the conditions and charges covering the handling of mooring lines, wharfage, shifting, storage, cranage, ashes, and garbage, towing service, and lighter service for vessels at the Canal terminals, has been issued by the Panama Railroad Company, which has charge, through its receiving and forwarding agencies at Balboa and Cristobal, of the management of ships at the docks. The circular is designated as No. 500-B, and is effective March 1, 1916.

In accordance with the changes made effective by circular No. 500-B, the "Sailing Directions and General Information," published by The Panama Canal, has been amended by a supplement, No. 1, revising the prices and charges listed on pages 38 to 42, inclusive.

The following is circular No. 500-B:

##### Item 1.—Mooring Lines.

For handling mooring lines by boat when necessary, and on piers:

Vessels not exceeding 100 feet in length over all.....	\$1.00
Vessels over 100 feet, and not exceeding 200 feet in length over all.....	2.50
Vessels over 200 feet in length over all.....	5.00

##### Item 2.—Wharfage.

##### Sailing vessels:

Not exceeding 100 feet in length over all (per lin. ft., per day).....	.05
When clearing from wharf within five (5) hours after berthing shall pay two-thirds (2/3) of the regular daily wharfage rate with a minimum charge of.....	1.00
Over 100 feet in length over all (per lin. ft., per day).....	.10
Steam or power driven vessels:	
On "overall" measurements taken from ship's certificate (per lin. ft., per day).....	.15

When cargo is handled to or from ships in lighters, wharfage will be charged on the lighters at the docks while loading or unloading at the same rates applying to sailing vessels. A charge will also be made for the handling of lines, in accordance with item No. 1 of this circular.

1. All auxiliary vessels will be considered power driven, and charge for wharfage will be made in accordance with their length as specified above.

2. All sailing vessels over 100 feet in length over all, and all steam or power driven vessels clearing from wharves within five (5) hours after berthing, shall pay two-thirds (2/3) of the regular daily wharfage rate.

3. The full daily rate to be charged for any part of a day that wharves are occupied after the first day; except that when a vessel occupies a berth all or any part of three (3) hours after the termination of a twenty-four (24) hour period, one-fourth (1/4) of the daily rate will be charged for that time.

4. "Per day" to mean a period of twenty-four (24) hours from the time of berthing.

5. No charge for wharfage shall be made against steam or power driven vessels oc-

cupping berths solely for the purpose of securing coal or other supplies from the Panama Railroad Company or any department of The Panama Canal.

#### Item 3.—Shifting.

Whenever in the judgment of the Receiving and Forwarding Agent, or Port Captain, it is deemed advisable to shift any vessel in order to accommodate other vessels—or for any other reason—shifting will be made, and the towing and other expenses thereby incurred will be charged against the vessel so shifted.

#### Item 4.—Storage.

1. No charge will be made for the storage of transfer cargo held in cars or on piers up to the departure of the first connecting steamer, provided that such connecting steamer receives such cargo within a period of not more than thirty-five (35) days from the date same is ready for delivery. On cargo held for a longer period than 35 days, storage will be charged thereafter at the rate of three cents per bill-of-lading ton per day up to the arrival of the first connecting steamer, but not for a greater period than 30 days, after which storage charges will be assessed at the rate of 10 cents per bill-of-lading ton per day.

2. The first steamer for the port (or connecting with a carrier for the port) to which *unroute*d cargo is consigned, and the first steamer of the line or lines by which cargo is *route*d, shall be considered the first connecting steamer.

3. On all cargo refused by the first connecting steamer because its entire capacity is filled with cargo that has been loaded at the Panama Railroad Company's wharves, storage will be charged per bill-of-lading ton per day at the rate of three cents from and including the day of departure of such first connecting steamer up to the time that delivery is accepted by the second connecting steamer of such final carrier.

4. On all cargo refused by the second connecting steamer, storage will be charged per bill-of-lading ton, per day at the rate of 10 cents instead of three (3) cents (the minimum charge being for not less than one ton), from and including the day of departure of the second connecting steamer up to the time delivery is accepted by the final carrier.

5. On all cargo refused by the first connecting steamer because of space being occupied by or reserved for other cargo, or for any reason other than that above indicated, storage will be charged per bill-of-lading ton, per day at the rate of 10 cents from and including the day of departure of the first connecting steamer, up to the time delivery is accepted by the final carrier.

6. Above charges apply on all cargo, both *route*d and *unroute*d.

7. No storage will be charged on cargo for local delivery for a period of seventy-two (72) hours from the time the steamer has completed cargo, but on any cargo not accepted by consignees within that time, a storage charge of three cents per 100 pounds per day, or \$5 per car per day, or fraction thereof, at the option of the Company, will be made—the minimum charge to be 15 cents.

#### Item 5.—Cranage.

Vessels availing themselves of the use of the railroad company's cranes at the Balboa piers will be charged 15 cents per bill-of-lading ton, with a minimum of 15 cents on less than a ton.

#### Item 6.—Stevedoring and Transferring Cargo, on and between Docks of The Panama Canal and Panama Railroad at Either Terminal.

##### A.—RATES.

1. All handling of cargo on the Company's docks will be done by forces of the railroad company. Vessels desiring to stevedore their own cargo will be permitted to do so.

2. For transferring cargo, including mail, baggage, and specie (with the exception of explosives and live stock) from the cleared slings of the delivering carrier, to the slings of the receiving carrier, \$1 per bill-of-lading ton. When the weights and/or measurements are not shown on ship's papers, the Receiving and Forwarding Agents will determine the tonnage on which the charges are to be based.

3. For transfer of explosives (per bill-of-lading ton)..... \$2.00

4. For transfer of:

Horses, mules, and donkeys (per head)..... 2.00

Cattle (per head)..... 1.50

Calves, goats, dogs, hogs, and sheep (per head)..... 1.00

Live stock, other than the above indicated, when crated (per ton)..... 2.00

5. For handling specie, additional charge to cover its safekeeping, one-eighth of one percent ( $\frac{1}{8}$  of 1%) of value as shown on bill-of-lading.

6. For stevedoring general cargo (per bill-of-lading ton)..... .30

7. For stevedoring special commodities:

(a) Boilers, locomotive parts, machinery, railroad cars, etc., scrap machinery and scrap boilers, etc., and other heavy weights of over two tons, (per bill-of-lading ton)..... .50

(b) Structural iron over 35 feet long, (per bill-of-lading ton)..... .50

(c) Loose brick, conduit, sewer pipe, terra cotta, and tile, (per bill-of-lading ton)..... .50

(d) Loose scrap iron of irregular shape, pieces not over two tons, (per bill-of-lading ton)..... .60

(e) Lumber, switch and cross ties, (per M. ft. B. M.)..... .50

(f) Rough timber and logs, (per ton)..... .40

(g) Piling, (per linear foot)..... .001

(h) Horses, mules, and donkeys, (per head)..... 1.00

(i) Cattle (per head)..... 1.50

(k) Calves, goats, dogs, hogs, and sheep, (per head)..... .50

(l) Live stock other than above indicated, when crated (per ton)..... 1.00

(m) Mail, baggage, and specie, (per ton)..... 1.00

(n) Explosives, (per bill-of-lading ton)..... 1.00

8. On general cargo landed on the docks at Colon, Cristobal, or Balboa, for local delivery at those docks, the delivering line shall be charged 40 cents per bill-of-lading ton for handling across docks, and on explosives and live stock half the transfer rates quoted in paragraphs 2 and 3 above. This will be applied on cargo for the Panama Railroad and The Panama Canal, and the same rates will be charged for handling local outbound cargo across the docks to vessels.

When local cargo is loaded into cars for consigne and switched, a charge of 30 cents per ton for loading and \$5 per car for switching will be made.

9. For handling cargo on docks at Balboa, including craneage and making local delivery at Panama, \$1.25 per bill-of-lading ton, except on explosives, for which the rate will be \$2.95 per bill-of-lading ton, or \$2.80 if Panama Railroad cranes are not used. The same rates apply on outbound local cargo originating at Panama.

10. For extra labor used in—

(a) Stevedoring cargo at request of receiving carrier so as to permit of its discharge at more than one port;

(b) Shifting cargo in hold in order to se-

cure proper working room, or from one hatch to another;

(c) Segregating cargo on dock or in cars for a vessel that calls for certain cargo and does not lift the cargo in its entirety, cost of service, plus 15 per cent.

11. When carriers request the Panama Railroad to work cargo on Sundays or holidays, which entails additional expense to the Panama Railroad on account of "overtime" paid its laborers, such additional expense will be charged to the steamship line making the request, in addition to the regular rates per ton. Vessels shall be expected to work at night at the request of the steamship agent or of the Receiving and Forwarding Agent, if conditions at the terminals so necessitate.

12. When a receiving carrier calls for certain cargo held in storage by the Panama Railroad Company and then decides not to take such cargo, or only a part of it, necessitating part or all of such cargo being returned to storage, a switching charge of \$5 per car will be made against such receiving carrier for every car thus moved, in addition to the cost of segregation provided for in paragraph 10 above.

13. For any additional appliances, machinery, wrecking cranes, etc., necessary to discharge or deliver cargo due to the fact that cargo can not be handled by ship's gear, regular rates provided for such service.

14. The minimum charge against any vessel for stevedoring and handling shall be \$10.

##### B.—GENERAL REGULATIONS.

15. The Panama Railroad will not accept delivery of transfer cargo unless payment is made, or assured, for storage and other charges that may accrue to the railroad company upon such cargo.

16. All charges against vessels for wharfage, craneage, transfer of cargo, stevedoring, and storage on cargo lifted, etc., must be paid before the vessel's departure. The Receiving and Forwarding Agents will inform receiving carriers regarding storage charges that have accrued on cargo, before it is delivered to them.

17. Steamships must furnish power and labor for operating winches, as well as suitable gear and tackle, and if in the judgment of the railroad company winchmen of steamers do not give satisfactory results, it will have the right to substitute competent winchmen at the expense of the steamer.

18. The local transfer charge (once across the dock) will be charged on cargo received by the Panama Railroad Company for delivery to the Royal Mail Steam Packet Company, and on cargo from the Royal Mail Steam Packet Company for delivery to other ships at Cristobal or Colon; the same rate will be charged the Royal Mail Steam Packet Company, also switching charges in either direction, they to handle the cargo themselves into and out of cars at their dock.

19. Bills of lading, check books, and other shipping documents, must be delivered to the Receiving and Forwarding Agents in time to permit an examination of such papers before vessels begin to discharge cargo.

Papers must plainly show weights and/or measurements of cargo to be handled.

20. No changes in bills-of-lading will be recognized or followed unless same are authorized by shippers and so indicated by them in writing upon the copies delivered to the Receiving and Forwarding Agents.

21. Instructions of the delivering carrier as to the routing of cargo will be followed only



in connection with shipments covered by bills-of-lading in which no reference whatever is made to the name of the final carrier.

#### Item 7.—Ashes and Garbage.

1. Ashes may be removed either by delivering them ashore or into barge by special arrangement with Receiving and Forwarding Agents; the minimum charge for such service to be \$5. If labor is furnished it will be billed at cost plus 15 per cent.

2. Garbage must be placed in covered garbage cans on docks at times specified by the Panama Railroad Company, for the removal of which a charge of 25 cents per can will be made.

#### Item 8.—Towing Service.

Tugboat will be furnished at the request of steamship lines at the rate of \$15 per hour, or fraction thereof; traction of an hour to be charged for on the basis of fifteen (15) minute periods—the minimum charge to be \$15. Charge to begin when tug leaves permanent berth and to continue until her return to same.

#### Item 9.—Lighter Service.

When no berth is available and call is made on the Panama Railroad for lighters and it is possible to furnish same, they will be furnished free, the usual charge for labor, stevedoring, and transferring cargo to apply; but when the lighters are furnished to a ship on berth, solely to expedite the discharge and loading of a ship, or to a ship in quarantine, or to a ship to discharge explosives in the bay, with no corresponding benefit to the Panama Railroad, a rental of 50 cents per hour for their use will be made, in addition to the usual charge for handling lines, wharfage, stevedoring, and transferring. All towage to be borne by the steamship company.

### NOTICE TO MARINERS.

#### Buoys Established, Atlantic Side.

The following spar buoys were established in Colon Harbor on February 18, 1916:

One regular spar buoy, shoal buoy, black and red horizontal stripes, second-class spar in 22 feet of water. Bearings:

Washington Hotel, right tangent, 169°; true (Sx E 5-16 E Mag).

Toro Point lighthouse, 259°; true (WSW 11-16 W Mag).

West Breakwater beacon, 304° 45'; true (NWxW 1-4 W Mag).

One spar buoy, shoal buoy black, third-class spar in 18 feet of water, marking shoal at entrance to Toro Point Cove. Bearings:

West Breakwater beacon, 52°; true (NE 1-4 E Mag).

Hotel Washington, right tangent, 102°; true (E 3-4 S Mag).

Beacon No. 2, 160°; true (SSE 1-4 E Mag).

The following anchorage buoys have been established to mark the anchorage for vessels carrying explosives. The anchorage will be between the buoys and the East Breakwater:

West spar buoy, white with black letter "A", first-class spar in 39 feet of water. Bearings:

Washington Hotel, right tangent, 169° 30'; true (Sx E 7-16 E Mag).

Toro Point lighthouse, 257°; true (WSW 7-16 W Mag).

West Breakwater beacon, 300°; true (NWxW 11-16 W Mag).

East spar buoy, white with black letter "A", first-class spar in 42 feet of water. Bearings:

Washington Hotel, right tangent, 188°; true (S 5-16 W Mag).

Toro Point lighthouse, 261° 15'; true (WSW 3-4 W Mag).

West Breakwater beacon, 298° 30'; true (NWxW 15-16 W Mag).

## THE KEEPING OF CHICKENS.

### Health Department Issues Statement Regarding Preventive Ordinance.

The ordinance of the Board of Health of the Canal Zone, recently enacted, approved, and published in THE CANAL RECORD, prohibits the keeping of chickens and other fowls, as well as various small animals, within the limits of the Canal Zone without a permit from the Board of Health. The permits which are issued by the Board of Health allow the keeping of fowls for only a few days, for fattening. The net effect of the ordinance is to prevent individual householders from breeding and keeping poultry. A reasonable time will be allowed those who have fowls at present to dispose of them.

This ordinance has aroused opposition from some to whom it appears to be a needless invasion of the rights of individuals. The General Inspector of the Health Department, under whose supervision the ordinance is being made effective, has made a statement in explanation:

"The reasons for this ordinance are of two classes—those bearing on the prevention of disease, especially bubonic plague, and those affecting the administration of towns.

"Bubonic plague is primarily a disease of rats, and is conveyed to man by the fleas which rats harbor. The operation of the Canal puts us in relatively close touch with countries in which plague is endemic. In order to protect the Canal Zone against infection we take extensive quarantine measures to prevent the landing of plague from ships; and a corollary of these measures is to make the field sterile for the spread of the disease if it should be brought in.

"This can be accomplished only by doing away with rats on the Canal Zone. The only way we can do it is to make food inaccessible to them and to give them no places to nest. As in efforts to do away with flies and cockroaches, we may not be able to accomplish the end absolutely; but it is unquestionable that we can greatly reduce the extent of them, and so minimize the chances of plague and of permanent infection with it.

"The Panama Canal and the Panama Railroad have spent large sums in rat-proofing their wharves and buildings, with the foregoing considerations in view. It would be poor policy to do this and at the same time to permit the maintenance of conditions on the Canal Zone which would defeat the purposes of the work. The keeping of chickens always attracts rats.

"Moreover, chickens frequently harbor vermin and should be kept at a suitable distance from human habitations. This is not always practicable in the Canal Zone towns.

And chickens, to be healthy, require earth runways in which they can scratch. They dig holes in the runways in which water accumulates, affording breeding places for mosquitoes.

"Administrative reasons for preventing the keeping of chickens are based on the general principles that individuals similarly situated should enjoy like privileges, and that regulations should provide for the well-being of the majority in the community, even if the privileges of a minority are thereby limited. It is manifestly impracticable to allow each employe to have a chicken coop and runway in the vicinity of his quarters; coops are often unsightly and offensive; and the chickens are often objected to by neighbors.

"In brief, the keeping of chickens is not worth the trouble it causes. But above all we should appreciate the danger of plague infection. Plague is endemic at ports no farther removed from the Canal than a two days voyage. While every effort is being made to prevent its coming in, the quarantine can not be perfect always, and the second great factor in protection is domestic sanitation, which will limit the spread of the disease and possibly enable us to eradicate it immediately. The residents of the Canal Zone should remember that it is a *Canal Zone*, and that the traffic through the Canal—which is the reason for the existence of a canal—brings its individual difficulties and makes incumbent upon us responsibilities arising from them. As operators of the Canal we have not only to protect ourselves but also to protect the shipping which uses the Canal. As it is the work of our organization to maintain the Canal and operate it, it is correspondingly our duty to maintain and operate it with every sanitary precaution."

### Difficulty in Delivering Steamshovels at Antofagasta.

It is expected that part shipment of two 95-ton steamshovels sold by The Panama Canal from its obsolete stock to the Chile Exploration Company can be made the latter part of this month. The steamshovels were sold last August, delivery by the Canal to be made at Balboa; and since that time no ship which has visited the port has been willing to undertake their delivery at Antofagasta. The shovels are shipped knocked-down, but as the car bodies alone weigh approximately 45,000 pounds each there are very few ships in the west coast trade which can handle them, and the closing of the Canal has interrupted the service of the lines between the west coast and the United States or Europe, the large vessels of which could carry the shovels without difficulty. The local agencies of the lines operating between Balboa and South America have been furnished with lists of the parts.

### Deceased Employes.

Name.	Check No.	Native of	Isthmian Residence.	Employed by	Date of death.
Diez, Luis	21915	Peru	Panama	Dredging Div.	Feb. 16, 1916.
Albert Braithwaite	88384	Barbados	Colon	Colon agency	Feb. 22, 1916.
Frederick Myers	24252	St. Vincent	Panama	Dredging Div.	Feb. 23, 1916.
Newton Roach	102123	Barbados	Colon	Colon agency	Feb. 25, 1916.

The estates of the abovementioned deceased employes of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due the estates, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## EXECUTIVE ORDER.

## Acting Secretary of War.

In accordance with the provisions of section one hundred and seventy-nine of the Revised Statutes, as amended by the act making appropriations for the legislative, executive, and judicial expenses of the Government, approved August 5, 1882 (22 Stat. 238), Maj. Gen. Hugh L. Scott, United States Army, Chief of Staff, is authorized and directed to perform the duties of Secretary of War until the existing vacancy in that office is filled by appointment and confirmation by the Senate, or until the existing vacancy in the office of the Assistant Secretary of War is filled in a similar manner, this designation not to extend beyond 30 days.

WOODROW WILSON.

THE WHITE HOUSE,  
February 11, 1916.

[No. 2313.]

## Civil Service Examinations.

The United States Civil Service Commission announces an open competitive examination for clerk to commercial attaché, for men only, on April 5, 1916 (date to be left blank in applications.) From the register of eligibles resulting from this examination certification will be made to fill vacancies as they may occur in this position in the offices of commercial attachés in various foreign countries and in positions requiring similar qualifications in the Bureau of Domestic Commerce, Department of Commerce, Washington, D. C., unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The salary of clerks to commercial attachés in foreign countries is \$1,500 per annum, with expenses for travel and subsistence from Washington to place of employment and return. The usual entrance salary for such positions in the Bureau of Foreign and Domestic Commerce is \$900 to \$1,000 per annum.

Commercial attachés are now located in the following cities: London, England; Lima, Peru; Paris, France; Petrograd, Russia; Rio de Janeiro, Brazil; Buenos Aires, Argentina; Melbourne, Australia; Berlin, Germany; Peking, China; and Santiago, Chile. It is possible that this service will be largely expanded during the coming fiscal year by the appointment of several more commercial attachés. Applicants are referred to announcement No. 315, posted at all clubhouses and post-offices in the Canal Zone, for further information regarding this examination.

The following special examinations are announced to be held, probably on March 26, 1916 (date to be left blank in applications):

Junior chemist, qualified in fuels (male); junior civil engineer, grade 1 (male); junior civil engineer, grade 2 (male)—Interstate Commerce Commission; physical metallurgist (male); teacher of domestic art (female); teacher of freehand drawing—Indian Service.

Applicants are referred to announcements Nos. 273, 274, 275, 276, 288, and 301, posted at all post-offices and clubhouses in the Canal Zone, for more complete information.

Attention is invited to announcements Nos. 253 and 217, examinations for marine engine and boiler draftsmen and for ship draftsmen, Navy Department.

It is hereby announced that until further

notice and on account of the urgent needs of the service, applications will be received at any time and the papers will be rated immediately upon their receipt, in order that appointments may be made with the least possible delay.

As the supply of eligibles resulting from recent examinations for marine engine and boiler draftsmen and for ship draftsmen has not been equal to the demand, qualified persons are urged to enter this examination.

Competitors will not be assembled for examination but will be rated on the following subjects, which will have the relative weights indicated:

SUBJECT.	Weight.
1. Physical ability.....	10
2. Education, training, and experience.....	90
Total.....	100

Applicants are referred to announcements Nos. 297 and 298, posted at all clubhouses and post-offices in the Canal Zone, giving more information concerning these examinations.

The United States Civil Service Commission announces an open competitive examination for income tax deputy collector, inspector and agent, for men only, on April 4, 1916 (date to be left blank in applications). From the register of eligibles resulting from this examination certification will be made to fill vacancies as they may occur in these positions in the Internal Revenue service, Treasury Department, for duty in the field, at salaries ranging from \$1,400 to \$1,600 per annum, with necessary traveling expenses when absent from headquarters in discharge of official duties, unless it is found to be in the interest of the service to fill any vacancies by reinstatement, transfer, or promotion. There is opportunity for promotion to a salary of \$5, \$6, or \$7 per diem, with an allowance in lieu of subsistence of \$3 per diem and actual traveling expenses. Applicants are referred to announcement No. 316, posted at all clubhouses and post-offices in the Canal Zone, for further information regarding this examination.

Examinations for the following positions are scheduled to be held, probably on April 16 (date to be left blank in applications):

Aid, Lighthouse Service; assistant observer, Weather Bureau; bookkeeper, Departmental Service; cadet engineer and cadet officer, Lighthouse Service; civil engineer and draftsman, Departmental Service; clerk, draftsman, mechanical and draftsman, topographic, Panama Canal Service; draftsman, copyist ship, Navy Department; engineer, Indian Service; junior chemist, Departmental Service; junior engineer, civil, Engineer Department at large; junior engineer, mining, Bureau of Mines; laboratory assistant, Bureau of Standards; postal clerk, Panama Canal Service; scientific assistant, Department of Agriculture; teacher, Indian Service; trained nurse, Indian and Panama Canal Services.

Applications should be secured from and filed with the office of the Board of Civil Service Examiners, Balboa Heights, C. Z., not later than March 20. A card of admission will be sent to those found eligible to be admitted, upon the receipt of the questions from the Civil Service Commission. A photograph of the applicant should be pasted on this card and produced at the examination room.

In answer to questions as to residence, ap-

plicants must show residence in a State or Territory of the United States, and county thereof, up to the time of filing application.

## District Court In Old Administration Building at Ancon.

The headquarters of the United States District Court at Ancon have been moved from the old courthouse in the rear of the Ancon police station to the former administration building at Ancon. The transfer of records was completed on Monday, February 28. The court now occupies the ground floor of the administration building, formerly used by the Division of Schools, the old Department of Sanitation, and a branch paymaster's office. The courtroom is in the large room at the front of the building, formerly occupied by the clerical and record-keeping forces of the Department of Sanitation, and originally the ballroom of the Governor's residence, "Santa Rosa." The two upper floors are occupied by the law department of the Canal and the headquarters of the United States troops on the Canal Zone.

The building has been extensively renovated. The former wooden porch around the four sides of the building and within the patio, including the stairs and *porte cochere*, has been replaced by a porch of reinforced concrete. The heavy piers of brick, wood-trimmed, in the room now used as a courtroom, were replaced by two iron columns of small diameter. An inscription in bronze letters will be placed on the concrete frieze of the first-story porch, "United States District Court."

The old district courthouse has been turned over to the Christian Science organization.

## Arrival of Cavalry on the "Kilpatrick."

The First Squadron of the Twelfth Cavalry arrived at Cristobal from Galveston in the morning of Tuesday, February 29, on board the Army transport *Kilpatrick*. This is the first command of cavalry to have come to the Isthmus. It will be part of the permanent garrison and will be stationed at Corozal. Aboard the *Kilpatrick* were 15 officers and 294 men, 297 horses and 37 mules, nine wagons, 12 cars of baggage, and 400 tons of cargo.

Upon completing the discharge of the cavalry the *Kilpatrick* will sail for Galveston to bring the Second Battalion of the Fourth Field Artillery to the Canal Zone. This will be the first command of field artillery to come to the Isthmus.

## The "Panama" Two Days Late.

The steamship *Panama* of the Panama Railroad Steamship Line, which sailed from New York on Thursday, February 24, and is due at Cristobal on Wednesday, March 1, was reported 580 miles out of Colon in the morning of March 1. She is expected to reach Cristobal in the morning of Friday, March 3.

## Runaway Freight Train Strikes Gravel Train Near Chagres River Bridge.

A wreck in which 10 cars and a caboose were demolished and a locomotive badly damaged resulted from a rear-end collision of two freight trains opposite the Gamboa prison stockade, south of the Chagres River bridge, at 2.32 in the morning of Sunday, February 27. In the making up of a train of gravel cars at the Gamboa gravel plant, for shipment to Cristobal, a cut of 25 cars was left standing on the main line track while the engine went into the yard for more cars. An extra train coming north, down the grade from the summit elevation north of New Culebra, smashed into

the string of cars, demolishing the caboose and three gravel cars, and seven cars of the oncoming train, which were loaded with ivory nuts, beans, rice, and general merchandise being transferred across the Isthmus between ships. The debris was spread along both sides of the track for a distance of over 200 feet.

The moving train contained 31 loaded cars and two empties, and weighed 1,450 tons; it was what is known as a "double train," having required the help of a pusher engine for the ascent of the grade from Pedro Miguel to the summit. Going down the grade with a single engine the train got beyond control as the result of the turning of an angle cock on the third car, which rendered the air brake useless. When the engineer whistled "I have no air" the crew ran to the hand brakes, but it was too late to prevent the collision. The engineer

and fireman jumped just before the locomotive struck. The former was injured about the head and shoulders. The locomotive which had been handling the gravel cars was used to carry the engineer to Colon Hospital.

The engineer of the runaway train had kept blowing the runaway signal, when he found the train could not be controlled, and the conductor of the gravel train, hearing the runaway coming, threw the switch in front of the cut of cars on the main line to prevent their being shunted into the yard and piled up. The cut went forward over the bridge, past Gamboa station.

Wrecking outfits were sent to the wreck from both ends of the line. The track was blocked for about 10 hours, the passengers and mail being transferred between trains. By 12 o'clock noon, normal traffic was resumed.

## RETAIL DRY GOODS PRICE LIST.

Of Commissary Branch of Supply Department,  
Effective March 1, 1916.

There is published below the retail dry goods price list, No. 2, effective March 1, 1916, governing the prices of articles sold in the dry goods departments of the commissary stores on the Isthmus, operated by the commissary branch of the Supply Department of The Panama Canal.

The prices given are those at which the items will be sold to Canal and Panama Railroad employees and other residents of the Isthmus who have commissary privileges.

These prices will be increased by 10 per cent in cases of sales to commercial vessels and ships of foreign navies, and by 20 per cent in cases of sales to yachts:

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
	Albums (see Stationery).			12139	Bedspreads, linen, H. S. and embroidered,		
8694	Alpaca, plain black or navy blue.	Yard	\$0.90		90 x 103.	Each	\$8.70
8795	Alpaca, striped.	Yard	1.15	12141	Bedspreads, cotton, H. S. and embroidered,		
11825	Alpaca, fancy.	Yard	1.65		72 x 90.	Each	4.35
6488	Ammonia, violet.	Bot.	.10	12228	Bedspreads, cotton, embroidered, 90 x 103.	Each	2.25
9542	Antisepticus, liquid, P. C.	Bot.	.25	12229	Bedspreads, linen, embroidered, 90 x 103.	Each	4.95
9831	Aprons, gingham.	Each	.26	12315	Bedspreads, embroidered linen, 90 x 103.	Each	5.60
9974	Aprons, sanitary, nainsook.	Each	.41	12316	Bedspreads, embroidered cotton, 90 x 103.	Each	2.85
9975	Aprons, sanitary, silk.	Each	.68	11524	Belting, dress, white, 2"	Yard	.04
11372	Aprons, coverall.	Each	.42	11525	Belting, dress, black, 1 1/2"	Yard	.03
12118	Aprons, tea, white lawn.	Each	.21	11683	Belting, black, No. 152.	Yard	.15
12119	Aprons, tea, white, cross bar lawn.	Each	.21	11684	Belting, white, No. 152.	Yard	.15
12121	Aprons, embroidered.	Each	.35	11685	Belting, black, No. 153.	Yard	.18
12122	Aprons, with bib, 45 x 60.	Each	.40	11686	Belting, white, No. 153.	Yard	.18
12123	Aprons, with bib, 45 x 48.	Each	.39	5845	Belts, men's, leather, black or tan.	Each	.43
	Aprons (see also Packages Royal Society embroidery).			8173	Belts, men's, leather, white.	Each	.37
5591	Atomizer.	Each	.55	8317	Belts, men's, leather, with pearl buckle, black, tan, or white.	Each	.41
	Auxiliator (see Tonic, hair).			8485	Belts, sanitary, ladies.	Each	.12
	Bags, cricket (see Cricket supplies).			8568	Belts, men's, leather, with covered buckle.	Each	.85
5449	Bags, shopping.	Each	.18	8985	Belts, men's, leather, with brass buckle.	Each	.55
7176	Bags, laundry.	Each	.47	9114	Belts, men's, leather, black or tan.	Each	.61
7178	Bags, laundry.	Each	.52	9432	Belts, men's, cotton, white.	Each	.20
9351	Bags, ice, rubber.	Each	.59	9829	Belts, children's, patent leather, black, red, or white.	Each	.15
11125	Bags, hot water.	Each	.79	11126	Belts, men's, black or tan, covered buckle.	Each	.44
11813	Balls, vanity.	Each	.08	11582	Belts, men's, cotton, without buckle.	Each	.10
5856	Balls, camphor.	Box	.24	12339	Belts, Palm Beach, without buckle.	Each	.21
	Balls, cricket (see Cricket supplies).			12343	Binding, rug.	Yard	.12
11612	Balls, tennis.	Each	.32	5476	Blankets, gray wool, suede.	Each	2.20
11857	Bandages, gauze, 2"	Roll	.03	5772	Blankets, gray cotton, single.	Each	.43
11858	Bandages, gauze, 2 1/2"	Roll	.04	11896	Blankets, Jacquard, cotton.	Each	1.40
11859	Bandages, gauze, 3"	Roll	.05	11423	Bleach, nail, Ongoline.	Jar	.27
11861	Bandages, gauze, 3 1/2"	Roll	.06		Blotters (see Stationery).		
9281	Bands, arm, Blakely.	Pair	.06	9632	Blouses, boys.	Each	.46
9367	Bands, hat.	Each	.40	9836	Blouses, middy, plain white.	Each	1.30
9517	Bands, arm, No. 338.	Pair	.16	9875	Blouses, middy, short sleeves.	Each	.91
11469	Bands, arm.	Pair	.17	9887	Blouses, middy, short sleeves, plain white.	Each	1.30
8482	Barrettes.	Each	.21	9888	Blouses, middy, long sleeves, plain white.	Each	1.30
8483	Barrettes.	Each	.40	9889	Blouses, middy, long sleeves, plain white.	Each	.91
5521	Bars, mosquito, double.	Each	1.40	11123	Blouses, middy, blue collar.	Each	.95
11591	Baseballs.	Each	1.10	11137	Blouses, middy, plain white.	Each	1.30
9938	Batiste, holly.	Yard	.12	11557	Blouses, middy.	Each	1.15
11781	Batiste, fancy.	Yard	.16	11855	Blouses, middy, Palm Beach.	Each	1.30
	Bats, cricket (see Cricket supplies).			12185	Blouses, boys', low collar.	Each	.46
6376	Bay rum, St. Thomas.	Bot.	.25	12265	Blouses, middy, navy blue collar.	Each	1.30
11146	Bay rum, P. C.	Bot.	.20	12266	Blouses, middy, navy blue collar.	Each	1.30
	One cent refund allowed for empty bottles returned.			12267	Blouses, middy, red collar.	Each	1.30
	Beading, lace (see Lace).			12268	Blouses, middy, navy blue collar.	Each	1.30
5137	Bedspreads, dimity, hemmed.	Each	1.30	12269	Blouses, middy, red collar.	Each	1.30
7994	Bedspreads, colored, fringed.	Each	1.00	12271	Blouses, middy, navy blue collar.	Each	.91
8738	Bedspreads, white, hemmed.	Each	1.30	12272	Blouses, middy, red collar.	Each	.91
9349	Bedspreads, white, fringed.	Each	1.20	12273	Blouses, middy, navy blue collar.	Each	1.30
9424	Bedspreads, dimity, 80 x 90.	Each	1.15	12274	Blouses, middy, red collar.	Each	1.30
9687	Bedspreads, fringed.	Each	.94	12275	Blouses, middy, short sleeves, C. & W.	Each	1.10
11312	Bedspreads, dimity, 62 x 90.	Each	.90	12276	Blouses, middy, long sleeves, C. & W.	Each	1.15
11335	Bedspreads, white, hemmed.	Each	.75	12332	Blouses, middy, Palm Beach.	Each	1.10



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
12342	Blouses, middy, white, short sleeves.....	Each	\$0.93	9758	Buttons, pearl, No. 28.....	Doz.	\$0.10
	Blouses (see also Packages Royal Society embroidery).			9759	Buttons, pearl, No. 30.....	Doz.	.11
7151	Boards, emery.....	Doz.	.21	11197	Button molds.....	Doz.	.02
8958	Bodkins (see Needles).			11213	Buttons, jet, black.....	Doz.	.19
	Boning, collar.....	Yard	.04	11214	Buttons, jet, black.....	Doz.	.27
	Books, memo (see Stationery).			11215	Buttons, jet, black.....	Doz.	.42
	Books, score (see Cricket supplies).			11229	Buttons, cuff.....	Pair	.93
5642	Boxes, soap.....	Each	.49	11799	Buttons, pearl, No. 40.....	Each	.07
11812	Boxes, vanity, celluloid.....	Each	.25	11811	Buttons, pearl, No. 45.....	Each	.08
11817	Boxes, powder puff.....	Each	.25	12251	Buttons, pearl, small.....	Doz.	.16
12331	Boxes, soap, celluloid.....	Each	.33	12252	Buttons, pearl, large.....	Doz.	.21
9712	Braid, lingerie, No. 7.....	Piece	.06	12219	Calico, plain, turkey red.....	Yard	.08
9713	Braid, lingerie, No. 8.....	Piece	.06	8319	Cambric, linen, white, 36".....	Yard	.31
11899	Braid, finishing.....	Yard	.03	8321	Cambric, linen, white, 36".....	Yard	.44
12188	Braid, rick rack, No. 13, 6-yd.....	Piece	.03	8359	Cambric, linen, 36".....	Yard	.31
12189	Braid, rick rack, No. 21, 6-yd.....	Piece	.04	9254	Cambric, diamond hill, white, 36".....	Yard	.09
12191	Braid, rick rack, No. 29, 6-yd.....	Piece	.05	9268	Cambric, bleached.....	Yard	.13
12192	Braid, rick rack, No. 37, white, 6-yd.....	Piece	.08	11518	Cambric, linen, 36".....	Yard	.30
12193	Braid, rick rack, No. 45, 6-yd.....	Piece	.09	11759	Cambric, linen, bleached, 36".....	Yard	.34
12194	Braid, rick rack, No. 53, 6-yd.....	Piece	.10	11766	Camphor, gum, 1-oz.....	Cake	.04
12195	Braid, rick rack, No. 37, red, 6-yd.....	Piece	.08	9291	Canvas, No. 4, 54".....	Yard	.81
12197	Braid, rick rack, No. 37, blue, 6-yd.....	Piece	.08	9459	Capes, rain, children's, red or blue, with hood.....	Each	2.00
11932	Brassieves, model.....	Each	.44	11115	Capes, rain, men's.....	Each	7.05
	Brilliantine (see Tonic, hair).			11116	Capes, rain, men's.....	Each	7.35
9325	Brooms, whisk, No. 47.....	Each	.15	11117	Capes, rain, men's.....	Each	7.60
9326	Brooms, whisk, No. 49.....	Each	.17	11118	Capes, rain, men's.....	Each	7.20
2379	Brushes, nail.....	Each	.10	11119	Capes, rain, men's.....	Each	7.50
5552	Brushes, shaving, Rubberset.....	Each	1.05	11121	Capes, rain, men's.....	Each	7.75
5623	Brushes, tooth, Antiseptic.....	Each	.16	5114	Caps, bathing, ladies', silk.....	Each	.85
6288	Brushes, hair, Keep Clean.....	Each	.39	5945	Caps, men's, khaki.....	Each	.38
6375	Brushes, shaving.....	Each	.23	6383	Caps, men's, shepherd check.....	Each	.56
6569	Brushes, shaving.....	Each	.26	6384	Caps, men's, engineer's.....	Each	.17
6877	Brushes, nail.....	Each	.22	6949	Caps, men's, tweed.....	Each	.38
7664	Brushes, tooth, Prophylactic, adults.....	Each	.21	9223	Caps, bathing, ladies'.....	Each	.19
7894	Brushes, shaving.....	Each	.18	11772	Caps, bathing, ladies'.....	Each	.41
8124	Brushes, clothes, Keep Clean.....	Each	.65	11773	Caps, bathing, ladies'.....	Each	.22
8865	Brushes, bath, long handle.....	Each	.43	12214	Caps, golf, Palm Beach.....	Each	.44
9292	Brushes, hair, wire.....	Each	.75	12248	Caps, engineer's.....	Each	.48
9293	Brushes, hair.....	Each	1.00		Caps (see also Packages Royal Society embroidery).		
9294	Brushes, hair.....	Each	.65		Cards, correspondence (see Stationery).		
9295	Brushes, nail.....	Each	.25		Cards, playing (see Stationery).		
9296	Brushes, tooth, in box.....	Each	.15	8376	Cases, pillow, linen, embroidered with scalloped edge, 22" x 36".....	Pair	2.40
9297	Brushes, shaving.....	Each	.67		Cases, pillow, linen, H. S. and embroidered, 22" x 36".....	Pair	1.35
9841	Brushes, hair, infants'.....	Each	.19	8653	Cases, pillow, cotton.....	Each	.18
11147	Brushes, hair.....	Each	1.15	9588	Cases, pillow, linen, H. S. and embroidered.....	Pair	1.45
11157	Brushes, hair.....	Each	.41	11826	Cases, pillow, linen, plain, H. S.....	Pair	1.55
11158	Brushes, bath.....	Each	.87	11867	Cases, pillow, linen, plain, H. S.....	Pair	1.65
11159	Brushes, clothes.....	Each	.75	11868	Cases, pillow, plain, H. S.....	Pair	1.75
11265	Brushes, hair.....	Each	.75	11869	Cases, pillow, plain, H. S.....	Pair	1.75
11918	Brushes, tooth, children's.....	Each	.18	11571	Cases, pillow, plain, H. S.....	Pair	1.75
11841	Buckles for belts.....	Each	.09		Caps, collar, military.....	Each	.03
5627	Buffers, nail, chamouis.....	Each	.40		Caps, gem and pencil (see Stationery).		
11876	Bunting, red, white, and blue.....	Yard	.06	9957	Caps, tie.....	Each	.19
11875	Burlap, brown, green, and red.....	Yard	.21	9958	Caps, tie.....	Each	.31
	Buttons (see also Links).			11241	Caps, tie, rolled gold.....	Each	.48
5496	Buttons, pearl.....	Doz.	.08	11243	Caps, tie, sterling silver.....	Each	.48
5812	Buttons, collar.....	Each	.09		Cloth (see also Other lines of dress goods, under headings: "Alpaca," "Batiste," "Cambric," "Damask," "Pique," "Poplin," "Voile," etc.).		
7474	Buttons, bachelor.....	Doz.	.07	9228	Cloth, ripplette.....	Yard	.12
8674	Buttons, bone, black, No. 27.....	Doz.	.02	9418	Cloth, long, white.....	Yard	.14
8675	Buttons, bone, black, No. 30.....	Doz.	.02	9493	Cloth, oil, white.....	Yard	.20
9271	Buttons, pearl, No. 16.....	Doz.	.07	11346	Cloth, tissue.....	Yard	.10
9272	Buttons, pearl, No. 18.....	Doz.	.08	11348	Cloth, waisting.....	Yard	.17
9273	Buttons, pearl, No. 20.....	Doz.	.09	11349	Cloth, Samson Galatea.....	Yard	.15
9274	Buttons, pearl, No. 21.....	Doz.	.11	11353	Cloth, oil, colored.....	Yard	.17
9275	Buttons, pearl, No. 24.....	Doz.	.11	11385	Cloth, Palm Beach.....	Yard	1.00
9746	Buttons, pearl, with bolts.....	Each	.04	11418	Cloth, lace, 40".....	Yard	.12
9747	Buttons, pearl, No. 26.....	Doz.	.16	11613	Cloth, foundation, silk.....	Yard	.15
9748	Buttons, pearl, No. 28.....	Doz.	.18	16116	Cloth, waisting, fancy.....	Yard	.23
9749	Buttons, pearl, No. 30.....	Doz.	.19	11619	Cloth, shrunk fancies.....	Yard	.13
9751	Buttons, pearl, No. 32.....	Doz.	.32	11621	Cloth, lace, fancy.....	Yard	.24
9752	Buttons, pearl, No. 16.....	Doz.	.04	11629	Cloth, woven shepherd checks.....	Yard	.12
9753	Buttons, pearl, No. 18.....	Doz.	.05	11633	Cloth, Premier.....	Yard	.14
9754	Buttons, pearl, No. 20.....	Doz.	.06	11634	Cloth, Ramapo.....	Yard	.33
9755	Buttons, pearl, No. 22.....	Doz.	.06				
9756	Buttons, pearl, No. 24.....	Doz.	.07				
9757	Buttons, pearl, No. 26.....	Doz.	.09				



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
11635	Cloth, Monogram.....	Yard	\$0.16	11824	Corsets, Royal Worcester.....	Each	\$1.55
11637	Cloth, silk and cotton novelties.....	Yard	.19	12112	Corsets, batiste, lace front, No. 500.....	Each	2.65
11641	Cloth, waistling, fancy.....	Yard	.16	12113	Corsets, maternity, lace trimmed.....	Each	1.55
11644	Cloth, Splash fancies.....	Yard	.26	12114	Corsets, embroidered lace front.....	Each	1.55
11647	Cloth, flaxon, colored.....	Yard	.18	12115	Corsets, American Lady.....	Each	.89
11651	Cloth, Honeycomb.....	Yard	.14	12198	Corsets, batiste, lace front, No. 0311.....	Each	2.65
11655	Cloth, tissue.....	Yard	.21	12287	Corsets, W. B., No. 3403.....	Each	3.45
11659	Cloth silk, embroidered.....	Yard	.28	5486	Cotton, darning.....	Spool	.02
11669	Cloth, lace.....	Yard	.14	9956	Cotton, absorbent, 4-oz.....	Pkg.	.12
11821	Cloth, mercerized, Jacquard.....	Yard	.16	11535	Cotton, crochet, white.....	Ball	.07
11842	Cloth, supreme cords.....	Yard	.18	11589	Cotton, crochet.....	Skein	.01
11945	Cloth, shantung.....	Yard	.24	12151	Cotton, crochet, mercerized, No. 3.....	Ball	.19
11953	Cloth, Marquinnette, No. 1912.....	Yard	.12	12152	Cotton, crochet, mercerized, No. 5.....	Ball	.19
11954	Cloth, Marquinnette, No. 1920.....	Yard	.14	12153	Cotton, crochet, mercerized, white.....	Skein	.02
12348	Cloth, Palm Beach, blue.....	Yard	1.00	12154	Cotton, crochet, flosselle, No. 14.....	Skein	.02
12349	Cloth, Palm Beach, black.....	Yard	1.00	11929	Covers, cushion, embroidered, 20".....	Each	.33
5664	Cloths, table, P. C. Hotel.....	Each	1.65	11931	Covers, cushion, embroidered, 20".....	Each	.37
6938	Cloths, wash, San-Knit-Ary.....	Each	.04	12321	Covers, cushion, embroidered, 20".....	Each	.25
7567	Cloths, tea, linen, 36".....	Each	.63	12322	Covers, cushion, embroidered, 20".....	Each	.40
7654	Cloths, sideboard, H. S. and embroidered, 16" x 54".....	Each	.85		Covers (see also Packages Royal Society embroidery).....		
8384	Cloths, sideboard, hemstitched, 18" x 54".....	Each	.63	2467	Cream, dental, Colgate's.....	Tube	.18
8669	Cloths, tea, embroidered, 36".....	Each	1.10	5574	Cream, massage, Pompeian.....	Jar	.32
8671	Cloths, tea, embroidered, 45".....	Each	1.50	5592	Cream, cold, Hudnut's.....	Jar	.44
8672	Cloths, tea, embroidered, 54".....	Each	2.25	6167	Cream, honey and almond.....	Bot.	.37
8761	Cloths, sideboard, embroidered, 18" x 72".....	Each	1.27	7844	Cream, vanishing, Pond's.....	Jar	.19
9598	Cloths, tea, linen, 54".....	Each	1.35	8172	Cream, cold, Ricksecker's.....	Jar	.40
9599	Cloths, sideboard, 17" x 63".....	Each	.65	8174	Cream, milkweed, small.....	Bot.	.39
12135	Cloths, tea, H. S. and embroidered, 45".....	Each	2.00	8214	Cream, face, Sanitol.....	Jar	.17
12136	Cloths, tea, scalloped and embroidered, 36".....	Each	1.50	8949	Cream, shaving, Colgate's.....	Tube	.16
12138	Cloths, tea, H. S. and embroidered, 45".....	Each	1.50	8956	Cream, violet set, Hudnut's.....	Jar	.43
12238	Cloths, tea, hemstitched, 54".....	Each	2.75	9141	Cream, cold, Colgate's.....	Jar	.22
12239	Cloths, tea, H. S. and embroidered, 36".....	Each	1.45	11893	Cream, shaving, William's.....	Tube	.16
12241	Cloths, sideboard, H. S. and embroidered, 20" x 72".....	Each	1.70	11942	Cream, cold, Perfect.....	Tube	.20
12242	Cloths, tea, H. S. and embroidered, 72".....	Each	5.10	12235	Cream, dental, Kolynos.....	Tube	.20
12244	Cloths, tea, H. S. and embroidered, 24".....	Each	.85	9739	Crepe, Serpentine.....	Yard	.14
12245	Cloths, tea, H. S. and embroidered, 30".....	Each	1.25	9773	Crepe, Yeddo, plain, white, and fancy.....	Yard	.14
12246	Cloths, tea, H. S. and embroidered, 45".....	Each	1.90	11392	Crepe, Ilford, white.....	Yard	.11
12247	Cloths, sideboard, H. S. and embroidered, 20" x 54".....	Each	1.35	11393	Crepe, Malay, white.....	Yard	.12
12319	Cloths, tea, H. S. and embroidered.....	Each	2.20	11394	Crepe, white, check.....	Yard	.19
5923	Coats, rain, men's.....	Each	7.90	11395	Crepe, Yawal, striped.....	Yard	.19
8131	Coats, rain, men's.....	Each	9.40	11445	Crepe, white.....	Yard	.37
8852	Coats, rain, ladies'.....	Each	4.75	11618	Crepe, fancy.....	Yard	.09
9118	Coats, rain, men's.....	Each	6.85	11642	Crepe, checked.....	Yard	.14
11563	Cosets, Palm Beach.....	Each	3.05	11643	Crepe, checked.....	Yard	.17
5796	Collars, Arrow, boys' and men's.....	Each	.11	11652	Crepe, Raipur.....	Yard	.17
9249	Collars, soft.....	Each	.21	11658	Crepe, Fleuret.....	Yard	.25
11879	Collars, military.....	Each	.15	11771	Crepe, M. A. F.....	Yard	.15
7148	Cologne, headache, Hudnut's.....	Each	.67	11783	Crepe, fancy.....	Yard	.19
2443	Combs, hard rubber.....	Each	.30	11784	Crepe, novelty.....	Yard	.11
5174	Combs, white.....	Each	.11	11938	Crepe de Chine.....	Yard	.43
8127	Combs, celluloid, No. 3020.....	Each	.19	6152	Creton.....	Yard	.09
8128	Combs, celluloid, No. 3033.....	Each	.07		Cricket supplies:		
8928	Combs, ladies', black rubber.....	Each	.16	11925	Bags, No. 4.....	Each	4.05
9317	Combs, black rubber, 8".....	Each	.16	11924	Bails, Grand Prix.....	Each	1.75
9318	Combs, black rubber, 9".....	Each	.21	11926	Bats, record.....	Each	5.60
9319	Combs, black rubber, 7".....	Each	.11	11923	Books, Score, English edition.....	Each	1.00
9321	Combs, black rubber.....	Each	.07	12341	Books, score, American edition.....	Each	.55
9322	Combs, fine, black rubber.....	Each	.07	11922	Gloves, batting.....	Pair	2.60
9358	Combs, side, shell and amber, No. 3133.....	Each	.20	11921	Gloves, wicket-keeping.....	Pair	3.25
9359	Combs, side, shell and amber, No. 2111.....	Each	.13	11919	Guards, leg.....	Pair	3.10
9697	Combs, men's, ivory.....	Each	.19	11927	Stumps and bails.....	Set	2.60
9698	Combs, ladies', ivory.....	Each	.18	11829	Crimpers, hair.....	Batch	.07
9838	Combs, ladies', white tuskanoid.....	Each	.30	11848	Cuffs, men's, Arrow, 3 1/2".....	Pair	.21
9839	Combs, men's, white tuskanoid.....	Each	.28	11849	Cuffs, men's, Arrow, 4 1/2".....	Pair	.21
12149	Combs, pocket, in case.....	Each	.06	11827	Curlers, kid.....	Pkg.	.15
12234	Combs, men's, horn, 7 1/2".....	Each	.11	11834	Curlers, kid.....	Pkg.	.09
11661	Comfortables.....	Each	1.40	2439	Curtain, draperies.....	Yard	.12
9451	Corsets, W. B.....	Each	.68	2441	Curtain, draperies, Georgian.....	Yard	.11
9452	Corsets, No. 123.....	Each	1.55	5451	Curtain, silkline.....	Yard	.10
9953	Corsets, W. B., No. 787, Reduso.....	Each	1.90	8647	Curtain, fish net, green, red, and white.....	Yard	.14
9954	Corsets, W. B., No. 789, Reduso.....	Each	1.90	8817	Curtain, Swiss.....	Yard	.08
9955	Corsets, Reduso, No. 100.....	Each	.95	11133	Curtain, etamine.....	Yard	.15
11554	Corsets, Bon Ton, low.....	Each	2.45	11363	Curtain, serim, plain white.....	Yard	.11
11555	Corsets, Bon Ton, medium.....	Each	2.45	11632	Curtain, Swiss.....	Yard	.13
				11638	Curtain, madras, drawn work.....	Yard	.17
				11681	Curtain, etamine, hemstitched.....	Yard	.17

S. N.	Article	Unit.	Price.	S. N.	Article	Unit.	Price.
12145	Curtain, Galatea.....	Yard	\$0.16		Eau de Cologne (see Perfumes).		
6164	Curtains, cotton, ruffled.....	Pair	.85		Edging, lace (see Embroidery; also Lace).		
11798	Cushions, pin, tomato.....	Each	.04	7584	Elastic, silk, black.....	Yard	\$0.30
11341	Damask, table linen, 72".....	Yard	.72	9313	Elastic, black or white, 3".....	Yard	.03
11221	Darners, stocking.....	Each	.05	9314	Elastic, black or white, 1".....	Yard	.05
	Dentifrice (see Wash, tooth).			11336	Elastic, black or white, 1".....	Yard	.01
8662	Diaper, cotton, 10-yard.....	Piece	.71	12255	Elastic, cotton, 1 1/2".....	Yard	.11
9246	Diaper, cotton, 10-yard.....	Piece	.84	12256	Elastic, plain silk, 1".....	Yard	.23
2383	Diapers, Purity, 18" x 36".....	Each	.07	11934	Embroidery, allover, 45".....	Yard	.52
8945	Dimity, flaxon check, white.....	Yard	.16	11935	Embroidery, allover, 45".....	Yard	.92
11656	Dimity, checks.....	Yard	.14	1071	Embroidery, stickered wash edging, 3-yard..	Piece	.07
11657	Dimity, cords.....	Yard	.14	11972	Embroidery, stickered wash veining, 6-yard..	Piece	.27
11775	Dimity, striped.....	Yard	.11	1973	Embroidery, stickered wash veining, 6-yard..	Piece	.35
11778	Dimity, fancy.....	Yard	.19	11974	Embroidery, stickered wash insertion, 6-yard	Piece	.23
9467	Dioxogen.....	Bot.	.30	11975	Embroidery, stickered wash edging, 6-yard..	Piece	.36
8115	Doilies, linen, embroidered, 10".....	Each	.35	11976	Embroidery, Barmen, 6-yard.....	Piece	.24
8362	Doilies, damask, H. S., 14" x 14".....	Each	.41	11977	Embroidery, Barmen, 6-yard.....	Piece	.26
8364	Doilies, damask, H. S., 15" x 15".....	Each	.44	11978	Embroidery, Barmen, 6-yard.....	Piece	.34
8365	Doilies, round, embroidered, with scalloped edge, 8".....	Each	.26	11979	Embroidery, Barmen.....	Yard	.05
8366	Doilies, round, embroidered, with scalloped edge, 10".....	Each	.36	11981	Embroidery, Barmen.....	Yard	.04
8367	Doilies, round, embroidered, with scalloped edge, 12".....	Each	.42	11982	Embroidery, stickered wash edging, 6-yard..	Piece	.10
8368	Doilies, round, embroidered, with scalloped edge, 20".....	Each	.91	11983	Embroidery, stickered wash edging, 6-yard..	Piece	.09
8369	Doilies, round, embroidered, with scalloped edge, 10".....	Each	.30	11984	Embroidery, Swiss galloon beading, 2".....	Yard	.12
8371	Doilies, round, embroidered, with scalloped edge, 12".....	Each	.36	11985	Embroidery, Swiss galloon beading, 1 1/2".....	Yard	.10
8372	Doilies, round, embroidered, with scalloped edge, 20".....	Each	1.00	11986	Embroidery, Swiss galloon beading, 1 1/2".....	Yard	.12
8374	Doilies, round, embroidered, with scalloped edge, 4 1/2".....	Each	.15	11987	Embroidery, Swiss embroidered beading, 2".....	Yard	.10
8375	Doilies, round, embroidered, with scalloped edge, 6".....	Each	.20	11994	Embroidery, baby, French vals. lace edging..	Yard	.03
9189	Doilies, round, embroidered, with scalloped edge, 24".....	Each	1.45	11995	Embroidery, baby, French vals. lace edging..	Yard	.05
9191	Doilies, round, embroidered, with scalloped edge, 36".....	Each	2.30	12184	Embroidery, stickered edging, 6-yard.....	Piece	.09
9192	Doilies, round, embroidered, with scalloped edge, 18".....	Each	.75	12323	Embroidery, flouncing.....	Yard	.02
9247	Doilies, round, embroidered, with scalloped edge, 24".....	Each	1.25	12324	Embroidery, flouncing.....	Yard	.03
9283	Doilies, round, embroidered, with scalloped edge, 18".....	Each	.88	12325	Embroidery, flouncing.....	Yard	.23
9284	Doilies, round, embroidered, with scalloped edge, 22".....	Each	1.30	12326	Embroidery, flouncing.....	Yard	.27
9538	Doilies, round, embroidered, with scalloped edge, 22".....	Each	1.10	12327	Embroidery, flouncing.....	Yard	.30
5734	Drawers, men's, elastic, Scriven's.....	Pair	.60	12328	Embroidery, flouncing.....	Yard	.36
5834	Drawers, men's, crepe, white.....	Pair	.35	12329	Embroidery, flouncing.....	Yard	.40
5928	Drawers, men's, elastic seam.....	Pair	.36	11795	Emeries, strawberry.....	Each	.05
6413	Drawers, men's, Porosknit.....	Pair	.28	11379	Enamel, nail, Hudnut's.....	Bot.	.43
7984	Drawers, men's, sea island.....	Pair	.45		Envelopes, Eradicator, ink erasers (see Stationery).		
8988	Drawers, men's, B. V. D.....	Pair	.37	5559	Extract, eclair (see Perfumes).		
	Dress goods (see Cloth, crepe, gingham, madras, organdie, voile, etc.).				Extract, Pond's.....	Bot.	.19
	Dresses (see Packages Royal Society embroidery).			11293	Eyeshades (see Stationery).		
2432	Drill, white, union.....	Yard	.27		Fasteners, dress.....	Doz.	.08
5336	Drill, linen, striped.....	Yard	.28	11721	Fasteners, snap on tape, white.....	Yard	.25
5421	Drill, cotton, khaki.....	Yard	.25	11722	Fasteners, snap on tape, black.....	Yard	.25
5435	Drill, cotton, unbleached.....	Yard	.08	5994	Files, nail.....	Each	.05
5768	Drill, linen, brown.....	Yard	.45	5419	Flannel, Canton.....	Yard	.11
6399	Drill, linen, striped.....	Yard	.45	5447	Flannel, cream.....	Yard	.48
7697	Drill, linen, bleached.....	Yard	.43	8561	Flannel, Saxony Welsh.....	Yard	.28
8796	Drill, cotton, khaki.....	Yard	.17	11313	Flannel, Fleece-down.....	Yard	.10
8921	Drill, cotton, drab.....	Yard	.28	12254	Flannelette, white.....	Yard	.09
8925	Drill, linen, brown.....	Yard	.32	8892	Floss, dental.....	Spool	.11
8964	Drill, linen, white.....	Yard	.51	9494	Flouncing, (see Embroidery; also Lace).		
11218	Drill, linen, white.....	Yard	.52	11874	Forms, dress, pneumatic.....	Each	14.70
11558	Drill, cotton, navy blue.....	Yard	.23	5829	Forms, dress, adjustable.....	Each	8.70
11862	Drill, khaki, olive drab, U. S. A.....	Yard	.28	5832	Garters, silk, Brighton.....	Pair	.15
5767	Duck, linen, white.....	Yard	.50	5833	Garters, double grip, Brighton.....	Pair	.20
9928	Duck, linen, brown.....	Yard	.50	6492	Garters, single or double grip, Paris.....	Pair	.35
9994	Duck, linen, white.....	Yard	.60	8693	Garters, silk, Boston.....	Pair	.32
				9373	Garters, cord style, Boston.....	Pair	.16
				9634	Garters, single or double grip, Paris.....	Pair	.17
				11468	Garters, double grip, Brighton.....	Pair	.36
				11912	Garters and arm bands.....	Set	.32
				7843	Garters, Steinyway.....	Pair	.17
				11436	Gauntlets, engineer's.....	Pair	.85
				6869	Gauntlets, engineer's, cotton.....	Pair	.14
				5124	Gauze, hospital.....	Yard	.05
				5438	Gingham, apron, Amoskeag.....	Yard	.08
				11156	Gingham, Chambray, Imperial.....	Yard	.12
				11411	Gingham, Barnaby, Red Seal, or Zephyr.....	Yard	.10
					Gingham, Renfrew.....	Yard	.17
					Gloves, batting (see Cricket supplies).		
				5839	Gloves, engineer's, leather.....	Pair	.95
				11366	Gloves, ladies', cotton, white.....	Pair	.46
				11437	Gloves, engineer's, cotton.....	Pair	.11
				11466	Gloves, ladies', silk.....	Pair	.59

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
	Gowns, night (see Nightgowns).			9522	Hose, children's, black, white, or tan	Pair	\$0.18
2269	Hammocks, No. 816	Each	\$4.50	9824	Hose, men's, silk, assorted colors	Pair	.23
5531	Hammocks, cord, No. 925	Each	5.00	11295	Hose, men's, fisle, white	Pair	.17
9116	Hammocks	Each	4.00	11296	Hose, men's, fisle, tan	Pair	.17
12147	Hammocks, white canvas	Each	1.35	11297	Hose, ladies', fisle, white	Pair	.30
2134	Handkerchiefs, ladies', black border	Each	.20	11298	Hose, ladies', fisle, tan	Pair	.30
5157	Handkerchiefs, men's, linen, H. S.	Each	.14	11311	Hose, children's, tan	Pair	.20
5158	Handkerchiefs, men's, linen, H. S.	Each	.10	11432	Hose, children's, black	Pair	.22
5163	Handkerchiefs, ladies', linen, H. S.	Each	.10	11592	Hose, infants', silk, black	Pair	.20
6143	Handkerchiefs, men's, bandana	Each	.04	11593	Hose, men's, fisle, tan, True Shape	Pair	.23
9541	Handkerchiefs, men's, linen, H. S.	Each	.22	11594	Hose, men's, fisle, black, True Shape	Pair	.23
9738	Handkerchiefs, men's, linen, H. S.	Each	.19	11595	Hose, infants', silk, white	Pair	.20
11183	Handkerchiefs, ladies', linen, H. S.	Each	.14	11597	Hose, men's, fisle, white, True Shape	Pair	.23
11371	Handkerchiefs, children's	Each	.03	11679	Hose, infants', silk fisle	Pair	.18
11511	Handkerchiefs, ladies', linen embroidered	Each	.10	11694	Hose, ladies', fisle, black	Pair	.42
11512	Handkerchiefs, ladies', linen, embroidered	Each	.16	11695	Hose, ladies', fisle, tan	Pair	.42
11513	Handkerchiefs, ladies', linen, embroidered	Each	.29	11696	Hose, ladies', fisle, white	Pair	.42
11514	Handkerchiefs, ladies', linen, embroidered	Each	.35	11844	Hose, children's, white, pink tops	Pair	.20
11515	Handkerchiefs, ladies', linen, embroidered	Each	.41	11845	Hose, children's, white, blue tops	Pair	.20
11517	Handkerchiefs, ladies', linen, H. S.	Each	.13	12277	Hose, ladies', black	Pair	.20
11997	Handkerchiefs, men's, set of three	Set	.22	12278	Hose, ladies', white	Pair	.20
12143	Handkerchiefs, ladies', set of three	Set	.22	12279	Hose, ladies', tan	Pair	.20
	Hat bands (see Bands).				Icy Kol (see Tonic, hair).		
2197	Hats, men's, felt, crushed	Each	1.35		Ink (see Stationery).		
5931	Hats, men's, straw	Each	2.50		Ink wells (see Stationery).		
5934	Hats, men's, straw	Each	2.20		Insertion (see Embroidery; also Lace).		
6425	Hats, ladies', straw	Each	.23	11797	Irons, curling	Each	.09
8596	Hats, men's, waterproof	Each	.38	8318	Jumpers, engineer's	Each	.85
8678	Hats, ladies', straw	Each	.48	11261	Kimonas, crepe	Each	.96
9177	Hats, men's, waterproof	Each	.44	11453	Knickerbockers, boys'	Pair	1.20
9181	Hats, men's, straw, high crown	Each	2.35	11586	Knickerbockers, boys'	Pair	.78
9182	Hats, men's, straw	Each	1.70	12288	Knickerbockers, boys', blue serge	Pair	1.20
9258	Hats, men's, Dakota, Stetson	Each	3.80	2338	Lace, torchon, linen	Yard	.08
9259	Hats, men's, Broncho, Stetson	Each	4.25	2339	Lace, torchon, linen	Yard	.13
9449	Hats, white, U. S. A. pattern	Each	.40	2341	Lace, torchon, linen	Yard	.16
9514	Hats, men's, cloth	Each	.90	2342	Lace, torchon, linen	Yard	.19
9848	Hats, men's, cloth	Each	1.40	2345	Lace, torchon, linen	Yard	.32
9896	Hats, children's, straw	Each	.25	2346	Lace, torchon, linen	Yard	.44
9937	Hats, men's, felt, Stetson	Each	3.15	9941	Lace, torchon, linen	Yard	.04
11161	Hats, men's, felt, crusher	Each	1.00	9942	Lace, torchon, linen	Yard	.06
11443	Hats, men's, felt, crusher	Each	1.00	9943	Lace, torchon, linen	Yard	.10
11446	Hats, children's, white drill	Each	.30	11745	Lace, shadow flouncing	Yard	.18
11493	Hats, men's, felt, cloth	Each	.72	11754	Lace, shadow flouncing	Yard	.18
11556	Hats, men's, felt, Stetson	Each	3.15	11885	Lace beading, Guipure	Yard	.11
11569	Hats, men's, felt, Army	Each	1.35	12257	Lace edging, French Vals.	Yard	.03
11714	Hats, ladies', felt, white	Each	.39	12258	Lace edging, French Vals.	Yard	.04
11715	Hats, children's, straw	Each	.50	12259	Lace edging, French Vals.	Yard	.04
11765	Hats, men's, Palm Beach	Each	.53	12261	Lace edging, French Vals.	Yard	.05
11774	Hats, men's, twill khaki	Each	.45	12262	Lace edging, French Vals.	Yard	.06
11843	Hats, men's, Bangkok	Each	4.00	12263	Lace edging, French Vals.	Yard	.05
11936	Hats, men's, straw, soft brim	Each	2.20	12264	Lace insertion, French Vals.	Yard	.05
12317	Hats, straw, low crown	Each	2.35	12281	Lace, allover, black	Yard	.23
	Herpicide (see Tonic, hair).			12282	Lace, allover, black	Yard	.26
	Holders for hand blotters (see Stationery).			12283	Lace, allover, black	Yard	.35
11475	Hooks, crochet, steel	Each	.02	12289	Lace edging, French Vals.	Yard	.02
11792	Hooks, crochet, bone	Each	.02	12291	Lace edging, French Vals.	Yard	.01
11796	Hooks, button, nickel plated	Each	.01	12292	Lace insertion, French Vals.	Yard	.03
12286	Hooks, crochet, steel	Each	.01	12293	Lace insertion, French Vals.	Yard	.04
5488	Hooks and eyes, white or black	Doz.	.02	12294	Lace insertion, French Vals.	Yard	.01
12124	Hooks and eyes, pants, No. 2	Doz.	.06	12295	Lace insertion, French Vals.	Yard	.02
12125	Hooks and eyes, pants, No. 3	Doz.	.05	12296	Lace insertion, French Vals.	Yard	.07
12126	Hooks and eyes, Swan Bill	Doz.	.01	12297	Lace, Brettonne net	Yard	.13
11455	Hoops, embroidery, round	Each	.04	12298	Lace, Brettonne net	Yard	.19
11456	Hoops, embroidery, oval	Each	.06	12299	Lace, Brettonne net	Yard	.25
2481	Hose, men's, black with white sole	Pair	.18	12311	Lace, d'Esprit net	Yard	.20
8571	Hose, infants', white with blue or pink tops	Pair	.11	12312	Lace, d'Esprit net	Yard	.28
8858	Hose, ladies', silk, Phoenix	Pair	.62	12333	Lace flouncing	Yard	.24
9111	Hose, men's, black	Pair	.17	12334	Lace flouncing	Yard	.27
9117	Hose, ladies', fisle, black	Pair	.30	12335	Lace flouncing	Yard	.28
9231	Hose, ladies', silk, black	Pair	.42	12336	Lace flouncing	Yard	.33
9248	Hose, men's, silk, Phoenix	Pair	.43	12337	Lace flouncing	Yard	.50
9263	Hose, men's, silk, interwoven, black, tan, or white	Pair	.43	12338	Lace flouncing	Yard	.57
9454	Hose, men's, Phoenix, assorted colors	Pair	.65	7187	Laces, corset	Each	.03
9455	Hose, ladies', silk, Phoenix, black, white, or tan	Pair	.90	8934	Laces, corset, 5-yard	Pair	.04
9462	Hose, children's, fisle, black	Pair	.12	9711	Laces, corset	Each	.10
				11142	Laces, middy blouse	Each	.05
				11831	Laces, corset, 5-yard	Each	.04



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
11832	Laces, corset, 10-yard.....	Each	\$0.07	7425	Nets, hair, Tidywear.....	Each	\$0.09
12196	Laces, middy blouse, silk.....	Each	.03	11833	Nets, hair, motor.....	Each	.07
9126	Lawn, black, 40".....	Yard	.16	12285	Netting, mosquito, white.....	Yard	.11
9135	Lawn, Persian, cotton, white, 36".....	Yard	.19	9377	Night gowns, ladies'.....	Each	.82
9136	Lawn, Persian, cotton, white.....	Yard	.12	9378	Night gowns, ladies'.....	Each	.93
9137	Lawn, Persian, cotton, white.....	Yard	.12	9379	Night gowns, ladies'.....	Each	1.15
11258	Lawn, Persian, cotton.....	Yard	.13	9381	Night gowns, ladies'.....	Each	1.30
11259	Lawn, Persian, cotton.....	Yard	.17		Night gowns ( <i>see also</i> Packages Royal Society embroidery).		
11289	Lawn, checked, cotton.....	Yard	.10		Night shirts, men's.....	Each	1.10
11427	Lawn, colored, cotton, 27".....	Yard	.13	9119	Oil, Omega, small.....	Bot.	.08
11761	Lawn, linen, bleached, 36".....	Yard	.32	5575	Ointment, carbolic, Calvert's.....	Jar	.24
11762	Lawn, linen, bleached.....	Yard	.46	5584	Ointment, Cuticura.....	Jar	.45
11822	Lawn, checked, cotton, white, 27".....	Yard	.12	5992	Ointment, Mentholatum.....	Jar	.17
	Leg guards ( <i>see</i> Cricket supplies).			8355	Ongoline ( <i>see</i> Bleach, nail).		
5968	Linen, brown, 31".....	Yard	.20		Organdy, Chantilly, white, 40".....	Yard	.16
7661	Linen, costume, bleached, 36".....	Yard	.22	11444	Organdy, colored, 27".....	Yard	.09
8322	Linen, costume, colored.....	Yard	.29	11682	Organdy, fancy.....	Yard	.18
8377	Linen, pillow, 45".....	Yard	.57	11777	Overalls, plain, pin check.....	Pair	.85
11239	Links, collar, gold filled.....	Each	.25	5889	Overalls, with apron, Cone's Boss.....	Pair	.85
11424	Links, cuff, gold plated.....	Pair	.64	6738	Overalls, boys', blue denim.....	Pair	.25
12117	Links, cuff, gold plated.....	Pair	1.20	11458	Overalls, with bib.....	Pair	.91
9167	Linon, India, 36".....	Yard	.12	11631	Overalls, white.....	Pair	.45
9168	Linon, India.....	Yard	.14	11937	Pacifiers, baby, No. 26.....	Each	.04
9169	Linon, India.....	Yard	.17	11814	Pacifiers, baby, No. 75.....	Each	.08
11614	Linon, sheer fancy, 27".....	Yard	.18	11815	Packages, Royal Society embroidery:		
11615	Linon, clipped dots.....	Yard	.19		Aprons, lawn, linen finish.....	Each	.21
11622	Linon, wide novelties, 36".....	Yard	.35	12177	Blouses, lawn, linen finish.....	Each	.42
11623	Linon, wide novelties.....	Yard	.24	12162	Blouses, batiste, silk finish.....	Each	.62
11671	Linon, sheer fancy, 27".....	Yard	.14	12163	Caps, boudoir, repp, No. 453.....	Each	.21
11672	Linon, sheer fancy.....	Yard	.16	12165	Caps, boudoir, batiste, No. 454.....	Each	.33
11687	Linon, finish checks.....	Yard	.11	12166	Caps, boudoir, lawn, No. 458.....	Each	.21
11776	Linon, clipped fancy.....	Yard	.15	12174	Caps boudoir, batiste, No. 460.....	Each	.21
11779	Linon, marquette.....	Yard	.18	12176	Covers, baby pillow.....	Each	.42
11782	Linon, clipped fancy.....	Yard	.19	12168	Covers, corset, No. 436.....	Each	.42
5979	Listerine, 3-oz.....	Bot.	.17	12171	Covers, corset, No. 439.....	Each	.42
5981	Listerine, 7-oz.....	Bot.	.34	12172	Dresses, children's, lawn, No. 424.....	Each	.42
5982	Listerine, 14-oz.....	Bot.	.66	12155	Dresses, children's, batiste, No. 426.....	Each	.52
	Lotions ( <i>see</i> Perfumes).			12156	Dresses, children's, lawn, No. 430.....	Each	.73
11617	Madras, check, 27".....	Yard	.18	12157	Dresses, children's, repp, No. 431.....	Each	.73
5951	Mats, Turkish bath.....	Each	.76	12159	Night gowns, Nos. 434, 437.....	Each	.83
9611	Mats, Turkish bath.....	Each	.51	12164	Robes, baby carriage.....	Each	.62
5495	Measures, tape.....	Each	.03	12167	Rompers, repp, white.....	Each	.78
11794	Measures, tape, nickel.....	Each	.13	12158	Sacques, dressing, lawn.....	Each	.42
9525	Menticol, P. C.....	Bot.	.25	12173	Sacques, dressing, batiste.....	Each	.62
5811	Mirrors, stand.....	Each	.95	12175	Suits, combination, chemise and petticoat.....	Each	.62
6434	Mirrors, stand.....	Each	.61	12161	Suits, combination, tripeloupe.....	Each	.83
8394	Mitts, Turkish bath.....	Pair	.26	12169	Padding, table, quilted, 54".....	Yard	.79
	Molds, button ( <i>see</i> Buttons).			11124	Pads, desk and scratch ( <i>see</i> Stationery).		
11344	Mousseline, fancy, 27".....	Yard	.12		Pads, dress ( <i>see</i> Shields).		
9776	Mum, toilet preparation.....	Jar	.19		Pajamas, Aldine.....	Suit	.85
5441	Muslin, fruit of the loom, 36".....	Yard	.10	5755	Pajamas, Morris.....	Suit	1.00
5468	Muslin, unbleached.....	Yard	.09	9412	Pajamas, Morris, cotton.....	Suit	1.15
9527	Muslin, Indian head.....	Yard	.14	9413	Pajamas, Morris.....	Suit	1.35
11639	Muslin, twilled.....	Yard	.13	9481	Pajamas, boys'.....	Suit	.59
11818	Muslin, dotted, 27".....	Yard	.16	11428	Pants, khaki.....	Pair	1.50
11823	Muslin, embroidered.....	Yard	.19	5769	Pants, duck, white.....	Pair	1.70
2442	Nainsook, plain, 36".....	Yard	.11	5785	Pants, running, Spalding.....	Pair	.44
7582	Nainsook, check, 27".....	Yard	.10	8566	Pants, working, with belt.....	Pair	.85
11256	Nainsook, cotton, 36".....	Yard	.16	8736	Pants, riding, khaki.....	Pair	2.15
11257	Nainsook, cotton.....	Yard	.20	8944	Pants, Palm Beach.....	Pair	2.35
11364	Nainsook.....	Yard	.15	9785	Pants, boy scout.....	Pair	1.15
11365	Nainsook.....	Yard	.17	11999	Paper, writing, ( <i>see</i> Stationery).		
5652	Napkins, paper, plain.....	Doz.	.01		Parasols, white.....	Each	.75
5653	Napkins, damask, 24".....	Each	.25	11491	Paste, library ( <i>see</i> Stationery).		
8768	Napkins, sanitary, 1/2 doz.....	Box	.17		Paste, tooth, "Pebecco".....	Tube	.40
9229	Napkins, damask, 22".....	Each	.17	2466	Paste, tooth, "Sanitol".....	Tube	.17
9882	Napkins, linen, scalloped, 15".....	Each	.60	8212	Pens and pencils ( <i>see</i> Stationery).		
11526	Napkins, paper, assorted.....	Doz.	.02		Percalé.....	Yard	.09
12137	Napkins, linen, scalloped and embroidered, 15".....	Each	.20	7129	Percalé, assorted patterns.....	Yard	.11
12142	Napkins, linen, scalloped and embroidered 15".....	Each	.16	9255	Perfumes:		
7426	Needles, bodkins.....	Doz.	.07	5597	Extract, quadruple, Hudnut's.....	Bot.	.66
7583	Needles, darning.....	Doz.	.03	5599	Colgate's, 2-oz.....	Bot.	.58
9518	Needles, Mittraileuse.....	Case	.09	6754	Colgate's, 1-oz.....	Bot.	.39
11474	Needles, embroidery.....	Pkg.	.02	8885	Triple extract.....	Bot.	.19
				8886	Lotions, assorted, Piver's.....	Bot.	.47

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
	Perfumes—Continued.			11195	Ribbon, velvet, black, No. 30	Yard	\$0.22
8879	Assorted, Piver's	Bot.	\$0.76	11263	Ribbon, satin, white, No. 22	Yard	.24
9139	Extract, Eclat, No. 25, Colgate's	Bot.	.70	11274	Ribbon, satin, red, No. 1	Piece	.06
9159	Eau de Cologne	Bot.	.23	11275	Ribbon, satin, red, No. 1½	Piece	.11
9161	Eau de Cologne	Bot.	.14	11459	Ribbon, satin, No. 8	Yard	.29
11854	Extract, Eclat, No. 15	Bot.	.47	11478	Ribbon, moire, No. 80	Yard	.11
	Pillow cases (see Cases).			11625	Ribbon, velvet, Aberdeen, 1½"	Yard	.02
2429	Pins, hair, celluloid, 1 doz.	Box	.15	11626	Ribbon, velvet, Aberdeen, 1½"	Yard	.03
5487	Pins, hair, wire	Cab.	.04	11697	Ribbon, taffeta, assorted, No. 60	Yard	.09
6168	Pins, common	Book	.06	11698	Ribbon, taffeta, assorted, No. 80	Yard	.10
7732	Pins, Princess	Book	.05	11699	Ribbon, satin, flowered, No. 60	Yard	.10
8692	Pins, safety, Ascot	Each	.07	11711	Ribbon, satin, flowered, No. 80	Yard	.11
8989	Pins, safety, Duplex No. 2½	Doz.	.05	11712	Ribbon, satin, taffeta, No. 60	Yard	.10
8991	Pins, safety, Duplex No. 3	Doz.	.06	11713	Ribbon, taffeta, No. 80	Yard	.13
11318	Pins, safety, bright, No. 1	Card	.03	11716	Ribbon, taffeta, No. 60	Yard	.31
11319	Pins, safety, bright, No. 2	Card	.04	11717	Ribbon, taffeta, No. 80	Yard	.34
11476	Pins, mourning	Box	.01	11871	Ribbon, taffeta, tango and copper	Yard	.13
11479	Pins, hat	Each	.38	11872	Ribbon, taffeta, tango and copper	Yard	.14
12344	Pins, hair, plain, shell color	Doz.	.30	11888	Ribbon, fancy	Yard	.08
12345	Pins, hair, crimp, shell color	Doz.	.30	11889	Ribbon, fancy	Yard	.05
12346	Pins, hair, plain, amber color	Doz.	.30	11891	Ribbon, fancy	Yard	.12
12347	Pins, hair, crimp, amber color	Doz.	.30	11892	Ribbon, fancy	Yard	.15
9849	Pique, white, 27"	Yard	.16	11893	Ribbon, fancy	Yard	.23
11237	Pique, vesting	Yard	1.96	11949	Ribbon, black velvet, No. 8	Yard	.20
11288	Pique, white, 27"	Yard	.25	11951	Ribbon, black velvet, No. 9	Yard	.19
11645	Pique, warp wets	Yard	.27	12134	Ribbon, fancy	Yard	.46
7151	Polish, nail, Hudnut's	Bot.	.22	12146	Ribbon, velvet, No. 3	Yard	.07
11941	Poplin, Peerless, 27"	Yard	.17	12225	Ribbon, satin, No. 3	Yard	.03
5582	Powder, talcum, Colgate's	Tin	.13	11532	Robes, bath, men's, Turkish	Each	5.10
5619	Powder, talcum, Hudnut's	Tin	.22	11562	Robes, bath, men's, Terry cloth	Each	3.00
5626	Powder, face, La Blanche	Box	.44		Robes (see also Packages Royal Society embroidery).		
5634	Powder, tooth, Euthymol	Tin	.15	9369	Rompers, children's	Each	.45
5638	Powder, talcum, Mennen's	Tin	.13	9656	Rompers, children's	Each	.45
5639	Powder, tooth, carbolic, small	Tin	.09	11955	Rompers, boys', Alheneed's	Suit	.43
5647	Powder, tooth, Lyon's	Tin	.19		Rompers, (see also Packages Royal Society embroidery).		
6287	Powder, tooth, Colgate's	Tin	.13	12351	Rouge, lip	Jar	.18
7156	Powder, face, Hudnut's	Pkg.	.43	11836	Rugs, steamer, wool	Each	4.80
8213	Powder, tooth, Sanitol	Tin	.17		Sacques (see Packages Royal Society embroidery).		
9347	Powder, talcum, P. C.	Tin	.12	8819	Salts, smelling	Bot.	.22
11448	Powder, face, rice, Piver's	Pkg.	.56	8177	Salve, witch hazel	Jar	.10
11663	Powder, sachet, Piver's	Bot.	.31	9562	Sateen, No. 90	Yard	.16
11873	Powder, tooth, carbolic, medium	Tin	.18	9557	Serge, indigo blue	Yard	1.95
12224	Powder, talcum, Quelque Floes	Bot.	.75	9571	Serge, blue, white stripe	Yard	1.90
11878	Presses, racquet	Each	.74	9721	Serge, cream	Yard	2.25
7731	Puffs, powder	Each	.29	9922	Serge, black	Yard	2.40
11338	Puffs, powder	Each	.22	9923	Serge, black	Yard	2.25
11339	Puffs, powder	Each	.23	9926	Serge, cream	Yard	1.70
	Quilts (see Bedspreads).			9969	Serge, indigo blue	Yard	3.00
11599	Rackets, tennis, Geneva	Each	1.10	9999	Serge, blue	Yard	2.60
11611	Rackets, tennis, All Comes	Each	6.60	11232	Serge, black	Yard	2.70
12249	Rackets, tennis, Slocum	Each	3.50	11234	Serge, gray	Yard	2.70
11816	Rattles, celluloid	Each	.10	11489	Serge, striped, herringbone	Yard	2.55
5857	Razorine	Pkg.	.11	11573	Serge, gray	Yard	2.00
8744	Ribbon, satin, Seal, No. 2	Yard	.03	11347	Sets, table linen, 1 cloth 45" and 6 napkins 15"	Set	6.20
8745	Ribbon, satin, Seal, No. 3	Yard	.04	11461	Sets, table linen, 1 cloth 72" and 12 napkins 22"	Set	4.15
8746	Ribbon, satin, Jupiter, No. 5	Yard	.07	11462	Sets, table linen, 1 cloth 72" x 90" and 12 napkins 22"	Set	4.60
8747	Ribbon, satin, Jupiter, No. 7	Yard	.09	11463	Sets, table linen, 1 cloth 72" x 105" and 12 napkins 26"	Set	7.05
8748	Ribbon, satin, Jupiter, No. 9	Yard	.10		Shades, eye (see Stationery).		
8749	Ribbon, satin, Exposition, No. 22	Yard	.11	9651	Shampoo, liquid, Sanitol	Bot.	.17
8751	Ribbon, satin, Exposition, No. 40	Yard	.12	12213	Shampoo, Canthrox	Bot.	.40
8752	Ribbon, satin, Exposition, No. 60	Yard	.15	5442	Sheeting, linen	Yard	.78
8891	Ribbon, satin, Exposition, No. 80	Yard	.18	7139	Sheeting, linen, 80"	Yard	.78
8942	Ribbon, taffeta, No. 16	Yard	.10	9916	Sheeting, rubber, white, 4/4	Yard	.39
9618	Ribbon, taffeta, No. 80	Yard	.25	9917	Sheeting, rubber, white, 5/4	Yard	.55
9857	Ribbon, taffeta, No. 5	Yard	.05	9918	Sheeting, rubber, white, 6/4	Yard	.63
9858	Ribbon, taffeta, No. 7	Yard	.06	11758	Sheeting, linen, bleached, 90"	Yard	1.20
9859	Ribbon, taffeta, No. 9	Yard	.08	5478	Sheets, cotton, 90" x 90"	Each	.80
9913	Ribbon, Seal, No. 14	Yard	.02	5479	Sheets, cotton, 54" x 90"	Each	.57
11186	Ribbon, velvet, black, No. 3	Yard	.03	5481	Sheets, cotton, 72" x 90"	Each	.75
11187	Ribbon, velvet, black, No. 5	Yard	.05				
11188	Ribbon, velvet, black, No. 7	Yard	.07				
11189	Ribbon, velvet, black, No. 9	Yard	.08				
11191	Ribbon, velvet, black, No. 12	Yard	.10				
11192	Ribbon, velvet, black, No. 16	Yard	.12				
11193	Ribbon, velvet, black, No. 20	Yard	.12				
11194	Ribbon, velvet, black, No. 22	Yard	.17				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
11928	Sheets, H. S., linen, 72" x 108".....	Pair	\$8.90		Stationery—Continued.		
11933	Sheets, H. S., linen, 90" x 117".....	Pair	9.15	5691	Cards, playing, Panama.....	Pkg.	\$0.30
12226	Sheets, H. S., linen, 72" x 108".....	Pair	5.65	9113	Cards, playing, Bicycle.....	Pkg.	.11
12227	Sheets, H. S., linen, 90" x 117".....	Pair	6.55	9813	Cards, playing, Pinochle.....	Pkg.	.10
9575	Shields, garment.....	Each	.20	35321	Clips, Gem.....	Box	.03
11471	Shields, dress, No. 2.....	Pair	.14	12199	Clips, pen and pencil.....	Each	.01
11472	Shields, dress, No. 3.....	Pair	.15	9173	Envelopes, linen, Highland.....	Box	.58
11673	Shields, dress, No. 2.....	Pair	.20	9176	Envelopes, linen, Belmar.....	Box	.51
11674	Shields, dress, No. 3.....	Pair	.22	11352	Envelopes, size 10.....	Pkg.	.02
11675	Shields, dress, No. 4.....	Pair	.24	35298	Eradicator, ink.....	Set	.19
11359	Shirting, Madras, 32".....	Yard	.24	35311	Erasers, ink and pencil.....	Each	.04
2435	Shirts, men's, Royal Blue.....	Each	.85	35299	Erasers, rubber, red.....	Each	.05
5681	Shirts, men's, full dress.....	Each	1.30	35325	Holders, hand blotter.....	Each	.31
8511	Shirts, men's, Windsor.....	Each	.75	6432	Ink, Carter's, 2-oz.....	Bot.	.03
8968	Shirts, men's, white, plaited.....	Each	1.60	7773	Ink, fountain pen.....	Bot.	.17
8995	Shirts, men's, Manhattan.....	Each	1.70	12231	Ink, indelible, 1-oz.....	Bot.	.16
9261	Shirts, men's, soft, with detached collar.....	Each	.70	35294	Ink wells, glass, single.....	Each	.06
9498	Shirts, men's, khaki.....	Each	.88	35295	Ink wells, glass, double.....	Each	.21
9666	Shirts, men's, khaki, wool.....	Each	2.60	35296	Pads, desk.....	Each	.76
9716	Shirts, men's, Arab, white.....	Each	.70	35313	Pads, scratch, 3" x 5".....	Each	.01
9995	Shirts, men's, wool.....	Each	2.15	35327	Pads, scratch, 5" x 8".....	Each	.02
11145	Shirts, men's, negligee, Manhattan.....	Each	1.40	35314	Pads, ruled, 8" x 10".....	Each	.04
11164	Shirts, men's, blue, chambray.....	Each	.45	9172	Paper, note, linen, Highland.....	Box	.38
11378	Shirts, men's, wool, U. S. A.....	Each	3.70	9174	Paper, note, linen, Belmar.....	Box	.27
11583	Shirts, men's, white dress, thousand plaited.....	Each	1.70	5651	Paper, writing, with envelopes.....	Box	.24
11584	Shirts, men's, white dress, thousand plaited.....	Each	2.85	5937	Paper, writing, with envelopes.....	Box	.11
11769	Shirts, men's, black sateen.....	Each	.43	5938	Paper, writing.....	Pkg.	.15
11835	Shirts, men's, blue chambray.....	Each	.80	9385	Paper, writing.....	Pkg.	.11
11851	Shirts, men's, negligee, no collar.....	Each	1.30	6448	Paper, writing.....	Pkg.	.15
11852	Shirts, men's, white, no collar.....	Each	1.55	35328	Paper, writing.....	Pkg.	.11
11856	Shirts, men's, negligee, with collar.....	Each	1.30	35324	Paper, writing.....	Pkg.	.11
11998	Shirts, boy scout.....	Each	1.05	35317	Paper, writing.....	Pkg.	.11
12221	Shirts, sport, short sleeves.....	Each	1.25	35316	Paper, writing.....	Pkg.	.11
5988	Skins, chamois, 15" x 20".....	Each	.27	35315	Paper, writing.....	Pkg.	.11
7389	Skins, chamois, face.....	Each	.09	12211	Paper, writing.....	Pkg.	.11
5329	Soap, Turkish bath.....	Cake	.04	12212	Paper, writing.....	Pkg.	.11
5561	Soap, tar, Packer's.....	Cake	.18	35312	Paper, writing.....	Pkg.	.11
5562	Soap, glycerine, Pears.....	Cake	.16	11367	Paper, writing.....	Pkg.	.11
5565	Soap, sulphur, Pears.....	Cake	.08	11368	Paper, writing.....	Pkg.	.11
5566	Soap, Attar of Rose, Pears.....	Cake	.45	7234	Paper, writing.....	Pkg.	.11
5572	Soap, Bay Rum.....	Cake	.07	7235	Paper, writing.....	Pkg.	.11
5573	Soap, Prickly Heat.....	Cake	.07	7236	Paper, writing.....	Pkg.	.11
5576	Soap, Cuticura.....	Cake	.23	7237	Paper, writing.....	Pkg.	.11
5581	Soap, Cashmere Bouquet, small.....	Cake	.10	7238	Paper, writing.....	Pkg.	.11
5585	Soap, unscented, Pears.....	Cake	.09	7239	Paper, writing.....	Pkg.	.11
5611	Soap, Pumex.....	Cake	.05	11917	Paper, writing.....	Pkg.	.11
5617	Soap, Golf Queen.....	Cake	.18	35318	Paper, writing.....	Pkg.	.11
5635	Soap, shaving, Colgate's.....	Stick	.16	35319	Paper, writing.....	Pkg.	.11
5641	Soap, shaving, Colgate's.....	Cake	.04	35322	Paper, writing.....	Pkg.	.11
5643	Soap, shaving, Williams'.....	Stick	.16	7152	Paper, writing.....	Pkg.	.11
5646	Soap, Violet Sec.....	Cake	.22	11362	Paper, writing.....	Pkg.	.11
6463	Soap, Cashmere Bouquet, large.....	Cake	.19	11875	Paper, writing.....	Pkg.	.11
6464	Soap, liquid green, Hudnut's.....	Bot.	.44	5622	Paper, writing.....	Pkg.	.11
8947	Soap, Maxine Elliott.....	Cake	.08	7264	Paper, writing.....	Pkg.	.11
9789	Soap, Bouquet, No. 11.....	Cake	.08	7774	Paper, writing.....	Pkg.	.11
11374	Soap, Milkweed Cream.....	Cake	.19	11846	Paper, writing.....	Pkg.	.11
11676	Soap, castile.....	Lb.	.10	11534	Paper, writing.....	Pkg.	.11
11677	Soap, castile.....	Cake	.18		Stumps and bails (see Cricket supplies).		
11678	Soap, hotel, P. R. R.....	Cake	.03	9153	Suiting, tweed.....	Yard	2.80
11881	Soap, Facial, Woodbury's.....	Cake	.20	9536	Suiting, tweed.....	Yard	2.05
12116	Soap, Verbena.....	Cake	.08	9554	Suiting, tweed.....	Yard	2.65
12148	Soap, Palmolive.....	Cake	.10	9658	Suiting, flannel, fancy.....	Yard	1.75
5621	Sponges, rubber, feather edge.....	Each	.39	9967	Suiting, tweed.....	Yard	2.10
9299	Sponges, rubber, No. 5.....	Each	.50	9971	Suiting, tweed, fancy.....	Yard	2.40
9324	Sponges, rubber, J. I. C.....	Each	.36	11167	Suiting, silk.....	Yard	1.75
11435	Sponges, rubber.....	Each	.43	11219	Suiting, union.....	Yard	.27
	Spreads, bed (see Bedspreads).			11231	Suiting, blue, herringbone.....	Yard	2.50
	Stationery:			11294	Suiting, silk.....	Yard	1.75
9336	Albums, postcard.....	Each	1.65	11575	Suiting, flannel.....	Yard	2.25
35323	Blotters, desk, large.....	Each	.03	11576	Suiting, flannel.....	Yard	2.45
35297	Blotters, hand, 25s.....	Pkg.	.04	11598	Suiting, flannel.....	Yard	2.45
35326	Books, memo, indexed.....	Each	.17	12222	Suiting, Osnaburg flour sacks.....	Each	.10
12236	Books, note, Morocco, with detachable filler.....	Each	.21	7161	Suiting, Union.....	Yard	.35
12237	Extra fillers for above.....	Each	.03	7162	Suits, bathing, men's.....	Suit	3.20
9384	Cards, correspondence.....	Box	.07	7489	Suits, bathing, men's.....	Suit	2.40
				9199	Suits, bathing, ladies.....	Suit	3.00
					Suits, bathing, ladies.....	Suit	1.85



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
9227	Suits, union, men's, B.V.D.	Suit	\$0.77	9988	Ties, Windsor, polka dot	Each	\$0.25
9798	Suits, bathing, boys'	Suit	.87	11381	Ties, four-in-hand	Each	.44
9952	Suits, Palm Beach, silk	Suit	10.30	11382	Ties, batwing	Each	.32
9997	Suits, white duck	Suit	6.00	11429	Ties, batwing	Each	.33
11112	Suits, union, ladies', lisle	Suit	1.10	11718	Ties, midgy blouse	Each	.80
11315	Suits, bathing, ladies'	Suit	2.25	11724	Ties, wash, four-in-hand	Each	.22
11324	Suits, bathing, ladies'	Suit	3.95	11847	Ties, batwing	Each	.17
11521	Suits, union, ladies'	Suit	.42	11882	Ties, silk, four-in-hand, with ring	Each	.36
11522	Suits, union, men's, Porosknit	Suit	.68	12284	Ties, ladies', string	Each	.16
11786	Suits, bathing, ladies'	Suit	3.65	1916	Tonic, hair, Herpicide, large	Bot.	.77
11791	Suits, union, ladies'	Suit	.38	1932	Tonic, hair, Auxiliator, large	Bot.	.52
11853	Suits, sleeping	Suit	.90	1933	Tonic, hair, Auxiliator, small	Bot.	.24
12186	Suits, bathing, children's	Suit	1.05	2196	Tonic, hair, Icy Kol	Bot.	.20
	Suits, (see also Packages Royal Society embroidery).			6166	Tonic, hair, Cardinal, Eau de quinine, Hudnut's, 4½-oz.	Bot.	.45
8217	Supports, collar	Set	.06	7147	Tonic, hair, brilliantine	Bot.	.43
11719	Supports, collar	Set	.04	7195	Tonic, hair, Eau de Quinine, Pinaud's, 8-oz.	Bot.	.50
8734	Supporters, hose, children's	Pair	.16	8764	Tonic, hair, Herpicide, small	Bot.	.42
9815	Supporters, hose, ladies', bathing	Pair	.22	11996	Tonic, hair, Bald Pate	Bot.	.67
11412	Supporters, hose, ladies'	Pair	.46		Tooth wash (see Wash).		
5822	Suspenders, men's, President	Pair	.38	2262	Towelling, huckaback, 22"	Yard	.39
7165	Suspenders, men's, Pioneer	Pair	.44	5463	Towelling, crash, 17"	Yard	.19
11127	Suspenders, men's, No. 49	Pair	.27	5464	Towelling, glass, 17"	Yard	.15
11128	Suspenders, men's	Pair	.48	7696	Towelling, huckaback, 25"	Yard	.44
11789	Suspenders, men's, Guyot	Pair	.44	8699	Towelling, huckaback, 15"	Yard	.27
9812	Swiss, dotted, Torquay	Yard	.20	2267	Towels, barber's	Each	.07
7268	Syringes, fountain, combination	Each	1.35	6155	Towels, Turkish, bleached	Each	.19
9825	Syringes, ear	Each	.10	8649	Towels, diaper, H. S., embroidered, 15" x 24"	Each	.32
9826	Syringes, nasal	Each	.13	8652	Towels, huckaback, embroidered, 15" x 24"	Each	.41
	Tacks, thumb (see Stationery).			8788	Towels, glass	Each	.17
5168	Tape, twilled, English, ¾ and ¾	Piece	.06	8789	Towels, huck, linen, 17" x 34"	Each	.11
5169	Tape, twilled, English, ¾, ¾, and ¾	Piece	.05	9187	Towels, huck, linen, 24" x 42"	Each	.26
9115	Tape, twilled, English, 1"	Piece	.09	9595	Towels, embroidered, 15" x 24"	Each	.23
11483	Tape, bias, lawn, No. 3, 12-yard	Piece	.08	9596	Towels, huck, H. S., 20" x 40"	Each	.32
11484	Tape, bias, lawn, No. 4, 12-yard	Piece	.09	9769	Towels, T. B., white, 30" x 60"	Each	.74
11485	Tape, bias, lawn, No. 5, 12-yard	Piece	.10	9899	Towels, T. B., 20" x 42"	Each	.17
11486	Tape, bias, lawn, No. 6, 12-yard	Piece	.11	11264	Towels, T. B., 24" x 42"	Each	.25
11487	Tape, bias, lawn, No. 7, 12-yard	Piece	.12	11245	Towels, T. B., 24" x 45"	Each	.35
11488	Tape, bias, lawn, No. 8, 12-yard	Piece	.13	11551	Towels, T. B., 24" x 44"	Each	.43
11494	Tape, bias, linen, No. 3, 6-yard	Piece	.08	11863	Towels, huck, H. S., embroidered, 15" x 24"	Each	.36
11495	Tape, bias, linen, No. 4, 6-yard	Piece	.09	11864	Towels, diaper, scalloped edge and embroidered, 15" x 24"	Each	.41
11496	Tape, bias, linen, No. 5, 6-yard	Piece	.10	11865	Towels, huck, H. S. and embroidered	Each	.30
11497	Tape, bias, linen, No. 6, 6-yard	Piece	.12	11866	Towels, huck, H. S. and embroidered	Each	.29
11498	Tape, bias, linen, No. 7, 6-yard	Piece	.13	12178	Towels, linen, H. S. and embroidered	Each	.41
11499	Tape, bias, linen, No. 8, 6-yard	Piece	.14	12179	Towels, linen, H. S. and embroidered	Each	.32
11723	Tape, lingerie, assorted colors	Piece	.08	12181	Towels, linen, scalloped and embroidered	Each	.43
12127	Tape, black, ¼", 10-yard	Piece	.04	12182	Towels, linen, embroidered	Each	.34
12128	Tape, black, ¾", 10-yard	Piece	.05	12183	Towels, linen, embroidered	Each	.38
12129	Tape, black, 1", 10-yard	Piece	.06	8512	Umbrellas, 28"	Each	.89
12131	Tape, black, 1½", 10-yard	Piece	.07	8514	Umbrellas, ladies', 26"	Each	1.40
12132	Tape, black, 2", 10-yard	Piece	.08	8515	Umbrellas, ladies', 26"	Each	1.95
12133	Tape, black, 1", 10-yard	Piece	.09	8876	Umbrellas, cotton	Each	1.40
6794	Thimbles, aluminum	Each	.01	9193	Umbrellas, men's, 26"	Each	1.20
11793	Thimbles, sterling silver	Each	.30	9194	Umbrellas, children's, taffeta	Each	.80
5489	Thread, silk	Spool	.04	9689	Umbrellas, ladies', 26"	Each	1.00
5788	Thread, Clark's, Anchor	Spool	.07	9744	Umbrellas, men's	Each	1.00
5789	Thread, khaki	Spool	.07	11387	Umbrellas, men's, 30"	Each	1.55
7429	Thread, sansilk, assorted colors	Spool	.04	11519	Umbrellas, ladies', 26"	Each	.68
8146	Thread, embroidery, silk	Skein	.03	11523	Umbrellas, ladies', 28"	Each	.93
9245	Thread, buttonhole, silk	Spool	.02	5819	Undershirts, short sleeves	Each	.18
9949	Thread, linen, white	Spool	.14	6459	Undershirts, Porosknit	Each	.36
11943	Thread, linen, Barbour's	Spool	.10	6461	Undershirts, Sea Island	Each	.37
5474	Ticking, bed	Yard	.19	7727	Undershirts, gauze	Each	.34
5699	Ties, silk, four-in-hand	Each	.39	7981	Undershirts, Sea Island	Each	.44
5711	Ties, batwing	Each	.35	8567	Undershirts, Athletic	Each	.41
8233	Ties, bow, white, dress	Each	.24	8987	Undershirts, B. V. D.	Each	.37
9427	Ties, four-in-hand	Each	.45	12144	Undershirts, Athletic	Each	.65
9428	Ties, four-in-hand	Each	.39	9425	Underwaists, boys' and girls'	Each	.24
9434	Ties, batwing, silk	Each	.34	5615	Vaseline, white, perfumed	Bot.	.19
9655	Ties, four-in-hand	Each	.43	5616	Vaseline, white	Bot.	.14
9677	Ties, four-in-hand	Each	.38	9253	Vaseline, white, perfumed	Tube	.08
9817	Ties, club, pointed end	Each	.21	11911	Vaseline, carbolated	Bot.	.07
9976	Ties, black teck	Each	.41	2399	Vests, ladies', gauze	Each	.23
9977	Ties, black teck	Each	.45	6667	Vests, ladies', gauze	Each	.14
9979	Ties, black teck	Each	.25	11386	Vests, ladies', Comfy Cut	Each	.21
9984	Ties, Scotch plaid	Each	.24	11763	Vests, ladies'	Each	.25
9986	Ties, Windsor, black	Each	.20				

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
11764	Vests, ladies'.....	Each	\$0.28	12215	Voile, corded.....	Yard	\$0.20
11451	Voile.....	Yard	.17	12216	Voile, chain check.....	Yard	.24
11547	Voile, embroidered.....	Yard	.59	12217	Voile, triple dashed.....	Yard	.25
11559	Voile, Hedsor.....	Yard	.21	12218	Voile, cord, satin striped.....	Yard	.29
11561	Voile, dashed.....	Yard	.18	12223	Voile, cord, seed.....	Yard	.27
11568	Voile, dashed, colored.....	Yard	.21	12253	Voile, seed marquette.....	Yard	.33
11579	Voile, seed, white.....	Yard	.19	12313	Voile, corded, No. 465-466.....	Yard	.16
11624	Voile, fancy.....	Yard	.27	12314	Voile, corded, P. J.....	Yard	.25
11648	Voile, Harston.....	Yard	.37	12232	Waists, misses', No. 704.....	Each	.47
11649	Voile, shadow stripe.....	Yard	.21	12233	Waists, misses', No. 712.....	Each	.73
11653	Voile, chiffon check.....	Yard	.20	5557	Wash, tooth, Rubifoam.....	Bot.	.19
11688	Voile, splashed.....	Yard	.18	5977	Wash, tooth, Glyco Thymoline.....	Bot.	.23
11689	Voile, splashed.....	Yard	.16	5987	Wash, tooth, Sozodont.....	Bot.	.17
11767	Voile, ratine, bordered.....	Yard	.24	9579	Wash, tooth, Dentrifice, Odol.....	Bot.	.30
11785	Voile, novelty.....	Yard	.19	11944	Wash, tooth, antiseptic, P. C.....	Bot.	.12
11819	Voile, mercerized.....	Yard	.23	5983	Water, Florida.....	Bot.	.30
11837	Voile, embroidered.....	Yard	.42	6484	Water, toilet, Hudnut's.....	Bot.	.68
11838	Voile, mercerized.....	Yard	.27	8328	Water, toilet, Pinaud's.....	Bot.	1.75
11839	Voile, embroidered.....	Yard	.23	8887	Water, toilet, Piver's.....	Bot.	.67
11897	Voile, reception.....	Yard	.20	8948	Water, toilet, Williams.....	Bot.	.43
11914	Voile, corded.....	Yard	.24	9142	Water, toilet, Colgate's, 3-oz.....	Bot.	.38
11915	Voile, Kabul.....	Yard	.15	9143	Water, toilet, Colgate's, 5-oz.....	Bot.	.49
11916	Voile, Gaberdine.....	Yard	.21	11828	Wavers, hair.....	Box	.04
11946	Voile, lace, striped.....	Yard	.25		Wax, sealing (see Stationery.).....		
11947	Voile, satin, striped.....	Yard	.25	9422	Witch Hazel, P. C.....	Bot.	.20
11948	Voile, embroidered.....	Yard	.26	11549	Wrappers, infants'.....	Each	.21
11952	Voile, striped.....	Yard	.13	5721	Yardsticks.....	Each	.12

#### Additions to Panama Canal Library.

The following is bulletin No. 6 of recent additions to the Canal library at Balboa Heights:

#### GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS, ETC.

Committee on Military Affairs, Military training in our land grant colleges. Abstract of address before the Committee on Military Affairs, House of Representatives, 1916. By Edmund J. James.

Temple University. Case against state-managed insurance under workmen's compensation laws. Address delivered at Temple University. By F. Robertson Jones. 1916.

Massachusetts Highway Commission, Twenty-first annual report of the Massachusetts Highway Commission, for the fiscal year ending November 30, 1915.

Ohio State Committee on Rural Credits and Cooperation. How to finance the farmer—private enterprise—not state aid. By Myron T. Herrick and R. Ingalls. 1915.

Railway Equipment and Publication Company, Pocket list of railroad officials. First quarter, 1916.

Bureau of Navigation, List of merchant vessels of the United States. 1915.

#### MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.

Builders Iron Foundry, Type D register for Venturi meter, leaflet. Bulletin No. 84, cold water. Catalogue of the Venturi meter.

Elliott-Fisher Company, Accounting control for banks, booklet. Elliott-Fisher visible writing book-recording machine, booklet. Elliott-Fisher products, catalogue. Elliott-Fisher standard writing-adding-subtracting machine (model T, visible), booklet.

Hendee Manufacturing Company, 1916 catalogue of Indian motorcycles.

International Nickel Company, Monel metal. Booklet and price list.

Ivanhoe-Regent Works of General Electric Company, Catalogue No. 108 and price lists of Regent semi-indirect bowls for decorative and commercial lighting. Catalogue No. 303 and price list of Ivanhoe metal reflectors and fittings for multiple Mazda lamps. Catalogue No. 800 of Holophane reflectors and fittings. Catalogue No. 712 of Regent opal reflectors and fittings for commercial lighting.

Henry Maurer & Sons, Fire brick, booklet. Herculean arch and Phoenix wall block, booklet.

National Scale Company, Bulletin No. 100, counting machines. Bulletin No. 200, trucks, elevating.

A. N. Pierson, Inc., Cromwell gardens, handbook of trees, shrubs, roses, plants for garden and greenhouse, 1916.

Schwerdtle Stamp Company, Inc., Catalogue No. 26 of rubber stamps, seals, stencils, etc.

Service Motor Truck Company, Catalogue and manual

of motor trucks. Specifications of Service motor trucks, leaflet.

Standard Motor Construction Company, Catalogue and price list of engines for yachts, launches, and working boats. Results of a prospective purchaser's inquiry about the Standard motors, booklet.

Sullivan Machinery Company, Bulletin No. 70-A, rotor hammer drills.

Underwood Typewriter Company, Underwood automatic typewriter operator, booklet.

United Brass Manufacturing Company, Catalogue C, of brass goods for water, gas, and steam.

United States Infantry Association, Catalogue of military books, 1916. Price list of periodicals, 1916.

Wilson-Jones Loose Leaf Company, General catalogue No. 36 of deluxe loose leaf binders and systems.

Deluxe style B tray binder, folder.

#### ARTICLES CONCERNING THE CANAL.

The Excavating Engineer, monthly, Milwaukee: "Excavation from the slides on the Panama Canal", page 178, February, 1916, issue.

Shipbuilding and Shipping Record, weekly, London: "Ship-repairing facilities at the Panama Canal", page 77, January 27, 1916, issue.

#### Report of Sales of Christmas Seals.

During the season of 1915 the number of Red Cross Christmas seals sold through the Canal Zone chapter was 45,981. The sales were distributed among the Canal Zone towns as follows:

Ancon.....	12,846
Balboa.....	12,366
Cristobal.....	9,892
Pedro Miguel.....	3,751
Gatun.....	3,436
Paraiso.....	1,589
Empire.....	1,740
Camp Gaillard.....	236
Camp Otis.....	225
Total.....	45,981

The several organizations making sales attained results as follows:

Schools.....	26,931
Canal clubhouses.....	10,434
Hotels, commissaries, and quartermasters.....	3,525
Ancon and Colon Hospital nurses.....	1,640
Post exchanges.....	1,061
Others.....	2,390
Total.....	45,981

The largest individual sales were as follows: Ancon schools, 8,380; Cristobal schools, 7,105; Balboa clubhouse, 6,977; Balboa schools, 4,355; Pedro Miguel schools, 2,600; Gatun schools, 2,306.

Based on a population in the towns named

aggregating 29,271, according to the figures of the police enumeration, the sales *per capita* were 1.57. After deducting the local expenses and the 10 per cent of net proceeds sent to the central organization, the income from this source available for tuberculosis work on the Isthmus amounts to \$400.61.

The February number of the *Red Cross Magazine* contains an estimate of 80,000,000 as the total number of seals sold by the national organization during the season of 1915, against 55,000,000 in 1914.

#### COMMISSARY DEPARTMENT.

##### Ice Cream Schedule.

The following list shows the flavors of No. 1 ice cream which will be on sale at the commissary stores on the respective days. The schedule is subject to change without notice:

THE PANAMA CANAL SUPPLY DEPARTMENT, (INCLUSIVE).			
Monday.....	March 6.....	Chocolate	
Tuesday.....	March 7.....	Pineapple.	
Wednesday.....	March 8.....	Bisque.	
Thursday.....	March 9.....	Peach.	
Friday.....	March 10.....	Coffee.	
Saturday.....	March 11.....	Caramel	
Sunday.....	March 12.....	Strawberry.	
Monday.....	March 13.....	Peach.	
Tuesday.....	March 14.....	Coffee.	
Wednesday.....	March 15.....	Strawberry.	
Thursday.....	March 16.....	Caramel.	
Friday.....	March 17.....	Banana.	
Saturday.....	March 18.....	Pineapple.	
Sunday.....	March 19.....	Chocolate.	
Monday.....	March 20.....	Bisque.	
Tuesday.....	March 21.....	Caramel.	
Wednesday.....	March 22.....	Pineapple.	
Thursday.....	March 23.....	Chocolate.	
Friday.....	March 24.....	Strawberry.	
Saturday.....	March 25.....	Banana.	
Sunday.....	March 26.....	Peach.	
Monday.....	March 27.....	Chocolate.	
Tuesday.....	March 28.....	Strawberry.	
Wednesday.....	March 29.....	Bisque.	
Thursday.....	March 30.....	Peach.	
Friday.....	March 31.....	Coffee.	
Saturday.....	April 1.....	Caramel.	
Sunday.....	April 2.....	Pineapple.	

In addition to the above schedule, vanilla ice cream may be ordered daily.

BENJ. L. JACOBSON,  
Deputy Commissary.

##### Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire,

Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m. and 3 to 6.30 p. m.

The Pedro Miguel store is open from 8 a. m. to 12 m. and from 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

#### Price Changes.

The following changes in prices of articles in stock at the commissary stores become effective March 1:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Aprons, gingham, ea.	\$0.24	\$0.26
Barrettes, ea.	.23	.21
Barstie, yd.	.10	.12
Bats, men's, ea.	.44	.41
Belts, sanitary, ea.	.15	.12
Belts, children's, ea.	.22	.15
Belts, men's, ea.	.11	.10
Blankets, ea.	1.30	1.40
Blankets, ea.	1.70	2.20
Blouses, middy, ea.	1.25	1.30
Blouses, middy, ea.	1.25	1.30
Brushes, shaving, ea.	1.00	1.05
Brushes, shaving, ea.	.24	.26
Brushes, shaving, ea.	.70	.67
Burlap, yd.	.14	.21
Buttons, ea.	.03	.04
Cambric, yd.	.38	.44
Cambric, yd.	.12	.13
Caps, bathing, ea.	.22	.19
Cloths, sideboard, ea.	.66	.56
Cases, pillow, pr.	1.20	1.45
Combs, ea.	.32	.30
Combs, ea.	.23	.28
Comfortables, ea.	1.20	1.40
Cotton, absorbent, pkg.	.73	.12
Crepe, yd.	.41	.39
Crimpers, hair, bunch.	.06	.07
Curtain, Swiss, yd.	.10	.08
Damask, yd.	.36	.45
Dimity, yd.	.08	.11
Dioxigen, bot.	.28	.30
Drill, yd.	.22	.25
Drill, yd.	.36	.45
Drill, yd.	.26	.32
Drill, yd.	.30	.28
Duck, yd.	.40	.50
Emboss, ea.	.04	.05
Fasteners, snap, on tape, yd.	.23	.25
Flannel, yd.	.08	.10
Handkerchiefs, ea.	.17	.19
Hats, ea.	.50	.44
Hats, ea.	.42	.40
Hats, ea.	3.30	3.15
Hats, ea.	1.30	1.35
Hose, pr.	.34	.30
Hose, pr.	.34	.30
Hose, pr.	.34	.30
Muslin, yd.	.08	.09
Fasteners, snap, on tape, yd.	.23	.25
Muslin, yd.	.21	.19
Nankins, ea.	.23	.25
Nightshirts, ea.	1.12	1.10
Overalls, pr.	1.05	.91
Pajamas, suit.	.95	.85
Pajamas, suit.	90	1.00
Powder, face, box.	.41	.44
Rugs, steam, yd.	4.50	4.80
Serge, cream, yd.	1.40	1.70
Sheets, pr.	6.90	9.15
Sheets, pr.	7.10	8.90
Shirts, ea.	1.60	1.30
Shirts, ea.	.41	.43
Suits, bathing, suit.	2.20	2.40
Suits, bathing, suit.	1.05	.87
Thimbles, ea.	.32	.30
Thread, spool.	.10	.07
Ties, ea.	.37	.32
Ties, ea.	.18	.21
Towels, yd.	.13	.11
Bedspreads, ea.	1.15	1.30

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., February 29, 1916.

The following insignificantly addressed letters and papers have been received at the office of the Director of Posts and may be procured upon request of the addressee:

Balun, Joseph	Marvitz, Joe
Boleman, Lee	Mitchell, Guy C.
Border, Joseph H.	Ochoa, Ramon
Briscoe, Dr. C. D.	Pitcock, Robert L.
Carpain, W. F.	Queman, LeRoy
"Duval, Dr. D. F.	Reich, Mrs. L.
"Garrido, Berta	Schickling, Rev. R. A.
Goodrich, Mrs. Paul M.	Schofield, B. F.
Greaves, J. B.	Steffen, Oscar F.
Gunn, J. Kinar	Stone, Hugh
Halliman, James	Tesgard, George
"Hawkins, L. M.	Templeton, T. H.
Lawton, J. E.	Waters, Frank
Mcadden, George	
"Card, Paper.	

### OFFICIAL CIRCULARS.

#### Acting Paymaster.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., February 23, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective February 24, 1916, Mr. R. W. Glaw is appointed Paymaster, Panama Canal, to act as such until Mr. J. H. McLean, Paymaster, returns from leave and resumes the duties of the office.

JAY J. MORROW,  
Acting Governor.

#### Rates for Service of Wrecking Cranes.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., February 9, 1916.

CIRCULAR NO. 692-3:

1. Effective at once, the following rates will be charged for the service of 75-ton cranes:

Between departments and divisions of The Panama Canal and the Panama Railroad \$3.00	Per hour.
For overtime service.....	4.50
To individuals and companies.....	4.50
For overtime service.....	6.00

The expense of special engine and crew used with these cranes will be billed, in addition to the above rates, at the regular tariff for such service.

2. The rates for the 100-ton wrecking crane will be:

Between departments and divisions of The Panama Canal and the Panama Railroad \$20.00	Per hour.
For overtime service.....	22.50

JAY J. MORROW,  
Acting Governor.

#### Leave Regulations.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., February 28, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

Referring to paragraphs 2 and 3 of Circular 602, heads of departments and divisions may, effective at once, grant employees leave of absence for 10 days or less, instead of a maximum of five days, without prior approval of this office. This absence will not be shown on the daily leave order, but must be covered in all cases by form PC-484 upon the employee's return to duty, and submitted to the Chief Tin-keeper.

JAY J. MORROW,  
Acting Governor.

#### Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, March 8, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for licenses must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than the day previous to the examination. In addition, all persons desiring chauffeur's licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeur's licenses will be given on Tuesday, the day before the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, March 10, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By order of the chairman of the board.

Geo. J. VANDERSLICE,  
Recorder, Board of Local Inspectors.

### SHIPPING INFORMATION.

#### Tide Predictions, Port of Balboa.

DATE.	Time and height of high and low water.			
Wed., March 1.....	0:56 13.7	7:24 1.8	13:36 14.0	19:51 2.1
Thurs., March 2.....	1:59 14.4	8:22 0.8	14:32 15.0	20:48 1.0
Fri., March 3.....	2:53 15.2	9:13 -0.1	15:22 15.9	21:37 0.0
Sat., March 4.....	3:43 15.7	9:58 -0.7	16:09 16.5	22:22 -0.6
Sun., March 5.....	4:31 16.0	10:41 -0.9	16:53 16.7	23:04 -0.9
Mon., March 6.....	5:16 15.9	11:21 -0.7	17:34 16.3	23:43 -0.6
Tues., March 7.....	5:57 15.6	12:00 0.0	18:14 16.0	.....
Wed., March 8.....	0:23 0.1	6:37 1.9	12:41 0.9	18:54 15.2
Thurs., March 9.....	1:03 1.0	7:16 1.4	13:22 2.0	19:31 14.2
Fri., March 10.....	1:47 2.1	7:55 1.3	14:07 3.2	20:11 13.1
Sat., March 11.....	2:36 3.2	8:39 1.9	15:00 4.3	20:57 12.1
Sun., March 12.....	3:33 4.3	9:36 1.1	16:04 5.1	22:00 11.3
Mon., March 13.....	4:40 4.7	10:55 10.7	17:14 5.5	23:20 11.1
Tues., March 14.....	5:49 4.7	12:18 10.9	18:23 5.2	.....
Wed., March 15.....	0:31 11.3	6:54 4.3	13:19 11.6	19:25 4.5
Thurs., March 16.....	1:30 12.0	7:48 3.5	14:04 12.4	20:15 3.5
Fri., March 17.....	2:14 12.8	8:34 2.6	14:42 13.4	20:57 2.4
Sat., March 18.....	2:55 13.6	9:13 1.7	15:17 14.3	21:36 1.3
Sun., March 19.....	3:33 14.4	9:49 1.6	15:52 15.0	22:12 0.5
Mon., March 20.....	4:11 14.9	10:25 1.5	16:26 15.6	22:48 -0.1
Tues., March 21.....	4:49 15.2	11:00 1.2	17:03 16.0	23:24 -0.3
Wed., March 22.....	5:28 15.4	11:37 0.7	17:41 16.0	.....
Thurs., March 23.....	0:03 -0.2	6:07 15.2	12:16 0.6	18:21 15.8
Fri., March 24.....	0:44 0.3	6:51 14.8	13:00 1.2	19:04 15.2
Sat., March 25.....	1:32 1.0	7:37 14.2	13:51 2.1	19:53 14.4
Sun., March 26.....	2:28 1.8	8:32 13.4	14:52 3.0	20:52 13.5
Mon., March 27.....	3:35 2.6	9:40 12.8	16:04 3.5	22:07 12.9
Tues., March 28.....	4:47 2.9	11:01 12.7	17:21 3.6	23:32 12.8
Wed., March 29.....	5:59 2.7	12:19 13.3	18:32 .....	.....
Thurs., March 30.....	0:48 13.2	7:05 2.1	13:22 14.1	19:37 2.0
Fri., March 31.....	1:49 14.0	8:03 1.2	14:15 15.0	20:31 1.0

#### APRIL.

DATE.	Time and height of high and low water.			
Sat., April 1.....	2:40 14.7	8:52 0.5	15:01 15.7	21:18 0.1
Sun., April 2.....	3:26 15.2	9:36 0.0	15:43 16.1	22:00 -0.4
Mon., April 3.....	4:09 15.5	10:17 -0.1	16:24 16.2	22:39 -0.6
Tues., April 4.....	4:50 15.4	10:36 0.1	17:03 15.9	23:16 -0.3

The tides are placed in the order of occurrence, with



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., February 27, 1916.)

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Feb. 21...	Potomac (tug)....	American....	United States Navy.....	Balboa.....	Cristobal.....	Ballast.....			

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
Feb. 22...	Haiti.....	French Line.....	Bordeaux.....	Feb. 23...	Europa.....	La Veloce Line.....	Genoa.
Feb. 22...	Belgian.....	Leyland Line.....	Liverpool.....	Feb. 26...	Cavina.....	Elders & Fyffe.....	Bristol-Jamaica.
Feb. 23...	Ethel Clarke (bark).....	Robert Wilcox & Co.....	Gulfport.....	Feb. 26...	Belgian.....	Leyland Line.....	Brunsuick, Ga.
Feb. 26...	Cavina.....	Elders & Fyffes.....	Port Limon.....	Feb. 27...	Haiti.....	French Line.....	Bordeaux.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
Feb. 28...	Patria.....	Cuban Government.....	Havana.....	.....	Limaité.....	International Petroleum Co.....	Unknown.
Feb. 29...	Kilpatrick.....	U. S. Army transport.....	Galveston.....	.....	Patria.....	Unknown.....	Unknown.
March 18...	Albion.....	.....	.....	.....	Albion.....	Leyland Line.....	Unknown.
.....	.....	.....	.....	.....	Wisdom (yacht).....	Private.....	Unknown.
.....	.....	.....	.....	.....	Ethel Clarke.....	Robert Wilcox & Co.....	Gulfport.

## \*EXPECTED DEPARTURES.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
Feb. 21...	Clapet No. 2.....	Pinel Brothers.....	Panama.....	Feb. 21...	Huatllaga.....	Peruvian Line.....	Callao.
Feb. 22...	La Primera.....	Standard Oil Co.....	San Francisco.....	Feb. 21...	Santa Maria.....	Santa Maria S. S. Co.....	Port San Luis.
Feb. 22...	Eurana.....	Walker, Armstrong & Co.....	Tacoma.....	Feb. 21...	Jamaica.....	Pacific Steam Nav. Co.....	Buenaventura.
Feb. 23...	Aysen.....	United States Navy.....	Valparaiso.....	Feb. 21...	Clapet No. 2.....	Pinel Brothers.....	Panama.
Feb. 24...	Denner.....	United States Navy.....	Nicaragua.....	Feb. 23...	La Primera.....	Standard Oil Co.....	San Francisco.
Feb. 24...	Urubamba.....	Peruvian Line.....	Callao.....	Feb. 24...	Eurana.....	Walker, Armstrong & Co.....	Bordeaux.
Feb. 26...	Mayfair.....	South Sea Navigation Co.....	San Francisco.....	Feb. 25...	Salvador.....	Pacific Steam Nav. Co.....	Salina Cruz.

## EXPECTED ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
Feb. 27...	Acajulla.....	Pacific Steam Nav. Co.....	Guayaquil.....	Feb. 28...	Urubamba.....	Peruvian Line.....	Callao.
Feb. 27...	Guatemala.....	Pacific Steam Nav. Co.....	Chilean ports.....	Feb. 28...	Aysen.....	South American S. S. Co.....	Valparaiso.
.....	San Francisco.....	Johnson Line.....	South American pts.....	Feb. 28...	Cauca.....	Pacific Steam Nav. Co.....	Tumaco.
.....	Herbales.....	Brussaard & Kosterud.....	Toopilla.....	Feb. 28...	Denner.....	Pacific Steam Nav. Co.....	Nicaragua.
.....	Mama (yacht).....	W. Scoresby Routledge.....	San Francisco.....	.....	Guatemala.....	Pacific Steam Nav. Co.....	Peruvian ports.
Feb. 28...	Stryo Maru.....	Toyo Kisen Kaisha.....	Coronel.....	.....	.....	.....	.....
Feb. 29...	Palena.....	South American S. S. Co.....	Valparaiso.....	.....	.....	.....	.....
March 2...	Paraiso.....	Long Beach S. S. Co.....	Guayaquil.....	.....	.....	.....	.....
March 7...	Limari.....	South American S. S. Co.....	Valparaiso.....	.....	.....	.....	.....
March 9...	Annie Johnson.....	Johnson Line.....	.....	.....	.....	.....	.....

## EXPECTED DEPARTURES.

their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights, in feet and tenths, are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sealevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3.47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, March 6 and April 3, will not land mail in New York, until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the sailings on March 6 and April 3.

When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, February 26, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gamboua	Gatun Lake	Miraflores Lake
Sun., Feb. 20.....	125.75	92.00	86.40	86.43	54.02
Mon., Feb. 21.....	125.60	91.90	86.45	86.43	53.94
Tues., Feb. 22.....	126.00	91.80	86.43	86.41	53.74
Wed., Feb. 23.....	125.50	91.82	86.40	86.41	53.82
Thurs., Feb. 24.....	126.20	92.14	86.40	86.43	54.05
Fri., Feb. 25.....	126.10	92.19	86.51	86.44	54.10
Sat., Feb. 26.....	127.35	93.33	86.57	86.44	54.17

Heights of low water to nearest foot.

125 0 91 0

## Sailings of Vessels In Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.			
Vessel.	Line.	Sails	Arrives.
Almirante.....	U. F. C.	Feb. 23.....	Mar. 1
Panama.....	P. R. R.	Feb. 24.....	Mar. 1
Pastores.....	U. F. C.	Feb. 26.....	Mar. 5
Zapaca.....	U. F. C.	Mar. 1.....	Mar. 27
Allianca.....	P. R. R.	Mar. 2.....	Mar. 8
Calamares.....	U. F. C.	Mar. 4.....	Mar. 12
Carrillo.....	U. F. C.	Mar. 8.....	Mar. 15
Colon.....	P. R. R.	Mar. 9.....	Mar. 15
Tenadores.....	U. F. C.	Mar. 11.....	Mar. 19
Santa Maria.....	U. F. C.	Mar. 15.....	Mar. 22
Advance.....	P. R. R.	Mar. 16.....	Mar. 23
Metapan.....	U. F. C.	Mar. 18.....	Mar. 27
Almirante.....	P. R. R.	Mar. 22.....	Mar. 29
Panama.....	P. R. R.	Mar. 23.....	Mar. 29
Pastores.....	U. F. C.	Mar. 25.....	Mar. 31
Zapaca.....	U. F. C.	Mar. 29.....	Apr. 5
Allianca.....	P. R. R.	Mar. 30.....	Apr. 5
Calamares.....	U. F. C.	Apr. 1.....	Apr. 9

## CRISTOBAL-COLON TO NEW YORK.

Advance.....	P. R. R.	Mar. 2.....	Mar. 9
Santa Maria.....	U. F. C.	Mar. 2.....	Mar. 9
Metapan.....	U. F. C.	Mar. 6.....	Mar. 14
Panama.....	P. R. R.	Mar. 9.....	Mar. 15
Almirante.....	U. F. C.	Mar. 9.....	Mar. 16
Pastores.....	U. F. C.	Mar. 13.....	Mar. 20
Allianca.....	P. R. R.	Mar. 16.....	Mar. 22
Zapaca.....	U. F. C.	Mar. 16.....	Mar. 23
Calamares.....	U. F. C.	Mar. 20.....	Mar. 27
Colon.....	P. R. R.	Mar. 23.....	Mar. 29
Carrillo.....	U. F. C.	Mar. 23.....	Mar. 30
Tenadores.....	U. F. C.	Mar. 27.....	Apr. 3
Advance.....	P. R. R.	Mar. 30.....	Apr. 6
Santa Maria.....	U. F. C.	Mar. 30.....	Apr. 6
Metapan.....	U. F. C.	Apr. 3.....	Apr. 11
Panama.....	P. R. R.	Apr. 6.....	Apr. 12

## NEW ORLEANS TO CRISTOBAL-COLON.

Atenas.....	U. F. C.	Feb. 26.....	Mar. 4
Heredia.....	U. F. C.	Mar. 1.....	Mar. 6
Turrialba.....	U. F. C.	Mar. 4.....	Mar. 11
Paraguarina.....	U. F. C.	Mar. 8.....	Mar. 13
Abangares.....	U. F. C.	Mar. 11.....	Mar. 18
Carriago.....	U. F. C.	Mar. 15.....	Mar. 20
Atenas.....	U. F. C.	Mar. 18.....	Mar. 25
Heredia.....	U. F. C.	Mar. 22.....	Mar. 27
Turrialba.....	U. F. C.	Mar. 25.....	Mar. 31
Paraguarina.....	U. F. C.	Mar. 29.....	Apr. 3
Abangares.....	U. F. C.	Mar. 31.....	Apr. 8
Carriago.....	U. F. C.	Apr. 1.....	Apr. 11
Heredia.....	U. F. C.	Apr. 4.....	Apr. 15

## CRISTOBAL-COLON TO NEW ORLEANS.

Carriago.....	U. F. C.	Mar. 5.....	Mar. 10
Atenas.....	U. F. C.	Mar. 5.....	Mar. 13
Heredia.....	U. F. C.	Mar. 12.....	Mar. 17
Turrialba.....	U. F. C.	Mar. 12.....	Mar. 20
Paraguarina.....	U. F. C.	Mar. 19.....	Mar. 24
Abangares.....	U. F. C.	Mar. 19.....	Mar. 27
Carriago.....	U. F. C.	Mar. 26.....	Mar. 31
Atenas.....	U. F. C.	Mar. 26.....	Apr. 3
Heredia.....	U. F. C.	Mar. 29.....	Apr. 7
Turrialba.....	U. F. C.	Mar. 29.....	Apr. 10
Paraguarina.....	U. F. C.	Mar. 30.....	Apr. 14
Abangares.....	U. F. C.	Mar. 30.....	Apr. 17

# CANAL



# RECORD

Volume IX.

BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, MARCH 8, 1916.

No. 29.

## The Canal Record

Official publication of The Panama Canal.

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All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, 1916, on this basis; and subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Tests of Unloader Towers at Cristobal Coaling Plant.

The acceptance tests of the unloader towers at the new coaling plant at the Atlantic terminus, which were begun on February 28, are still under way. The various features of operation are being observed, preparatory to measurements and reports.

The Canal collier *Ulysses* was brought under the towers with a full cargo of coal, approximately 12,000 tons, and unloaded from all four holds until the depth was reached at which the delay necessitated by trimming was such as to detract from the value of the operations, in which speed is of great importance. The *Ulysses* was then transferred to the Brown hoist at the old coaling plant, for the removal of the remainder of the cargo, and the *Achilles*, which had two full holds at the time, was substituted in the tests of the unloaders. The discharge of the cargo of the *Achilles* will probably be completed in the afternoon of Wednesday, March 8, after which the collier will sail for Norfolk.

### Increasing Output of Gravel Plant.

The hours of operation of the gravel handling plant at Gamboa have been increased from eight to 12 hours per day, effective March 1. The principal reason for increasing the hours of operation is to maintain an ample supply of gravel for use in the manufacture of concrete blocks for the East Breakwater.

### Vessels Arriving at Balboa for Coal and Supplies.

Four ships have come into Balboa during the current week to take on coal and supplies, and coincidentally to see if transit of the Canal

could be effected. These were, in order of arrival, the *Greystoke Castle*, from Portland for St. Vincent, with lumber; the *California*, from Talit with nitrates, to take orders at Balboa, depending on conditions; the *Wasana*, from Portland to Great Britain, with wheat; and the *Heraclides*, from Tocopilla with nitrates, to take orders at Balboa.

### Excavation from Cut During the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, March 6, amounted to 246,011 cubic yards. In addition an aggregate of 75,976 cubic yards of spoil was rehandled by the pipe line suction dredge No. 86, the seagoing suction dredge *Culebra*, and the Belgian ladder dredge No. 5.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	72,705
Gamboa.....	15-yard dipper.....	67,546
Puraiso.....	15-yard dipper.....	68,825
Coral.....	Ladder.....	36,435
Culebra.....	Seagoing suction.....	32,556
No. 86.....	Pipeline suction.....	32,340
No. 5.....	Belgian ladder.....	11,039
No. 83.....	Pipeline suction.....	500

The pipeline suction dredge No. 83 was transferred last week from excavation for the approaches to the new coaling station at Cristobal to Gaillard Cut, to assist in the work of removing slide material.

The average aggregate output of the dredges during the 19 weeks preceding that ending at midnight of Monday, March 6, was 257,177 cubic yards, the total amount of primary excavation during that period (since October 19) having been 4,886,371 cubic yards. This has been an average of 36,739.6 cubic yards for each of the 133 days.

### Storage for Dredge Spares at Paraiso.

A shed for the storage of spare parts for the dredges and other pieces of floating equipment of the Dredging Division is being erected in the rear of the repair wharf at Paraiso on the fill recently made by dredge No. 86. The building was recovered from the abandoned shops at Empire and is in fair condition. It is 212 feet long by 50 feet wide, with a height of 28 feet to the eaves of the roof.

### Derrick Barge Handles Boilers Across the Canal.

The four boilers from the steam electric plant on the west side of the locks at Gatun were transferred across the Canal on Saturday, March 4, on their way to the Miraflores plant, where all of the old Gatun plant equipment is to be installed. The boilers were handled across the Canal at the upper end of the locks by derrick barge No. 157, which has been engaged in placing armor on the breakwaters in Limon Bay.

The moving of the condensers, generators, steam turbines, and other heavy parts of the machinery is now in progress.

## BAGGAGE AT QUARANTINE.

### Arrangement to Expedite Handling of Baggage of Passengers Destined to Quarantine at Colon.

The handling of the baggage of the passengers disembarking from some of the ships which come into Colon or Cristobal is complicated by the necessity of detaining part of the passengers in quarantine while others off the same ship will be admitted without detention. The baggage of the quarantinable passengers must be segregated and stored, pending the release of its owners, while the baggage of the passengers who are not liable to quarantine must be turned over to them immediately, as many of them wish to make close connections with trains crossing the Isthmus or ships sailing from the ports.

The entry on the same ship of quarantinable passengers and passengers not liable to detention may happen in the case of a ship which has made a call at a yellow fever port on the way to Colon. If the vessel anchored well offshore at such a port, and none of the ship's company was allowed to go ashore, the original passengers would not be liable to infection.

New passengers coming aboard might be infected, but the absence of mosquitoes from the ship would insure against the transmission of the fever to the original ship's company by contact with infected persons. When the ship arrives at Colon the part of her company which came from the clean port is in the status of having made a direct voyage, as far as yellow fever infection is concerned, and will enter the port without detention. The part from the yellow fever port will not be allowed to pass the quarantine until the period of incubation, six days, has been completed.

This situation has resulted in considerable confusion in the handling of baggage, and tiresome detention of passengers at the docks, not infrequently for a period of four hours or longer. To remedy this the Chief Quarantine Officer has arranged with the Panama Railroad to store the baggage of passengers destined to quarantine, pending their release, and for the customs service to make prompt inspection of their baggage when they are released from quarantine, so that they may go about their business.

The Chief Quarantine Officer has also addressed a circular letter to steamship companies, masters of vessels, and others concerned, explaining the arrangement and requesting cooperation. He requests that arrangements be made immediately to handle the baggage of all incoming passengers who are subject to quarantine, in this manner:

A manifest of the baggage belonging to such persons is to be prepared. Checks for the separate pieces are to be issued to the owners. The check number for each piece will be entered on the manifest. The baggage is to be segregated and turned over to the Panama Railroad on arrival at dock. The



railroad will assume responsibility for the baggage and store it, for release upon presentation of the checks.

The pursers of the incoming vessels who arrange for the handling of baggage should explain to the passengers destined to quarantine that their baggage, including trunks and other bulky packages, will not be taken to the quarantine station. Hand baggage, consisting of suit cases, satchels, etc., containing necessary personal effects of passengers for use while they are detained, may be taken by the passengers to the quarantine station.

At Balboa a system similar to this is already in effect.

#### QUARANTINE ACTIVITIES.

##### Examinations Increased in January with Entry of Greater Number of Vessels.

Immigration to the Isthmus from foreign ports in January exceeded emigration to foreign ports from the Isthmus by 248, according to the count kept by the officials of the quarantine service at the ports of Cristobal-Colon and Balboa-Panama.

This makes the net emigration since July 1, 1913, a period of two years and seven months, amount to 26,709. During approximately the same period the Canal force diminished from 42,262 on June 25, 1913, to 23,918 on January 26, a decrease of 18,344.

The total number of passengers and crews examined at the ports during January was 11,641, in addition to which there were 15 stowaways, making a total of 11,656 persons examined, of whom 3,536 were at Balboa-Panama and 8,120 at Cristobal-Colon. A comparison of the numbers of passengers and crews examined during the months of the preceding year and during the month of January, 1916, is afforded by the following table:

Month.	Passengers.	Crews.	Total.
January, 1915.....	3,887	10,232	14,119
February.....	4,300	9,332	13,632
March.....	6,014	12,155	18,169
April.....	3,695	11,032	14,637
May.....	5,391	11,772	17,163
June.....	4,969	12,756	17,725
July.....	4,974	14,136	19,110
August.....	4,900	14,814	19,714
September.....	4,606	13,514	18,120
October.....	3,940	10,536	14,476
November.....	3,289	7,230	10,519
December.....	3,708	7,211	10,419
January, 1916.....	3,142	8,499	11,641
Total.....	56,225	143,219	199,444

The falling off in numbers during the past four months has been due to the closing of the Canal, though the number of vessels entering the ports in January (112) was greater than the 98 in December, and the 103 in November. The vessels entering in October numbered 168, those in September 234. The Canal was closed on September 18, but with the passage of small waiting vessels through the Canal in December, hopes were aroused of the resumption of traffic and vessels have been coming into the ports on the chance on making the transit. The number of vessels calling at the ports, independently of Canal traffic, is approximately 100 a month.

A summary of the quarantine activities on the Isthmus during January is given in this consolidated report for the ports of Balboa-Panama and Cristobal-Colon:

Number of vessels inspected and passed... 128  
Number of vessels held in quarantine... 12

Total..... 140

Number of special inspections made to enforce compliance with antipague and mosquito-breeding regulations..... 101

Number of vessels fumigated on arrival	11
Number of vessels fumigated on departure.....	0
Total.....	11
Number of crew examined.....	8,499
Number of passengers examined.....	3,142
Total.....	11,641
Number of supplementary inspections	15
Number of stowaways.....	15
Number of persons vaccinated at ports of arrival because of compulsory vaccination law.....	410
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law.....	451
Total.....	861
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and plague.....	451
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague.....	1,478
Total.....	1,929
Total number of persons landed from foreign ports:	
Cabin.....	1,609
Steerage.....	921
Total.....	2,530
Total number of persons embarked for foreign ports:	
Cabin.....	1,131
Steerage.....	1,151
Total.....	2,282
Total number of persons arriving from coast towns on small launches and sailing craft.....	1,792
Total number of persons sailing for coast towns on small launches and sailing craft.....	1,574
Apparent increase for month from coast towns.....	218
Apparent increase for month from foreign ports:	
Cabin (increase).....	478
Steerage (decrease).....	230
Net increase for month.....	248
Number of persons rejected and deported.....	13
Number of bills of health issued or viséed.....	108
Number of inspections of docks.....	26
Number of inspections of vessels at docks.....	187
Number of persons landed.....	4,322
Less number for Pacific ports.....	210
Total.....	4,112
Total number of persons sailing.....	3,856
Total apparent increase for month.....	256

#### Classes for Instruction in First Aid.

Three classes for instruction in first aid have been formed among women in the Canal Zone, and three men have made application for instruction. As only four persons are required for a class, it is anticipated that a class for men will be formed shortly. The classes which have been formed among the women contain 10 or more persons each. The first was formed at Camp Otis, the second at Ancon, and the third at Fort Grant. All are under the instruction of officers of the Medical Corps of the United States Army.

Details regarding the procedure in the formation of classes were published in THE CANAL RECORD of January 12.

The submarine C-4 of the flotilla stationed in Canal waters is undergoing a general overhauling in the dry dock of the Cristobal shops.

#### WEATHER CONDITIONS.

In the Canal Zone during the Month of February, 1916.

The rainfall for the month was in excess of the normal at 11 stations and deficient at seven; totals ranged from .59 inch at Miraflores to 5.54 inches at Quipo, on the Siro River. The maximum amount of rainfall recorded on any one day was 1.12 inches, at Brazos Brook on the 4th. Light showers occurred very generally throughout the Canal Zone during the month. The February rainfall for three years has been as follows:

STATIONS.	1914	1915	1916	Station average.	Years of record.	Rainy days, 1916.
<i>Pacific Section-</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>		
Balboa.....	.00	2.73	1.46	.69	17	7
Balboa Heights.....	.02	2.90	1.48	.92	18	8
Miraflores.....	.00	1.17	.59	1.36	8	11
Pedro Miguel.....	.07	1.69	.86	.90	9	13
Rio Grande.....	.25	2.81	1.12	.83	12	11
<i>Central Section-</i>						
Culebra.....	.20	3.63	1.61	.71	26	15
Camacho.....	.33	3.45	1.36	1.05	10	14
Empire.....	.27	3.53	1.49	.90	11	13
Gambou.....	.23	3.75	1.52	.90	31	11
Juan Mina.....	.38	3.43	2.50	1.60	6	17
Alhajuela.....	.22	2.53	1.31	.86	17	17
Vigia.....	.51	2.34	1.33	2.02	8	14
Frijoles.....	1.33	5.66	3.48	3.30	5	18
Trinidad.....	1.16	8.88	2.81	3.21	9	22
Monte Lirio.....	1.55	6.57	2.60	3.89	9	14
<i>Atlantic Section-</i>						
Gatun.....	1.07	13.17	2.33	3.21	12	19
Brazos Brook.....	.94	14.32	3.62	3.69	10	20
Colon.....	1.32	12.37	1.96	1.72	46	22
Bocas del Toro.....	5.97	9.90	4.55	9.53	8	25

The estimated rainfall over the Gatun Lake watershed was 30 per cent above the normal while over the Chagres River above Alhajuela it was nine per cent below the normal, the normal in each case being for a period of 15 years.

The air temperature at Balboa Heights was 1.5° Fahrenheit below normal, and at Colon it was approximately normal. The relative humidity, daytime cloudiness, and atmospheric pressure were above normal on both coasts, while the sea water temperature was below normal at Balboa and Colon. The wind movement and the evaporation exceeded the station averages on both coasts, but was slightly deficient over the lake surface at Gatun.

No fogs were observed at either coast, and only a few fogs occurred at interior stations. All of the fogs were dissipated by 6 a. m.

Elevations of Gatun Lake, in feet above mean sealevel, were as follows: Mean for the month, 86.37; maximum, on the 29th, 86.50; minimum, on the 9th, 86.26. Evaporation from the lake surface amounted to 5.985 inches.

The following is a summary of the climatological conditions recorded at the Atlantic and Pacific coast stations:

STATIONS.	Pressure (reduced to mean of 24 hours)	Temperature.						Mean relative humidity.	Precipitation.				Wind.			
		Mean.	Maximum.	Date.	Minimum.	Date.	Total inches.		Station average.	Days of .01 inch or more.	Total movement (miles).	Prevailing direction.	Max. velocity in miles.	Direction.	Date.	
Colon.....	29.908	79.8	85	Feb. 29	73	Feb. 18	84	1.96	1.72	22	11,532	N.	33	N.	Feb. 17	
*Balboa Heights...	29.890	79.0	90	Feb. 6	68	Feb. 5	84	1.48	.92	8	7,934	N.W.	30	N.	Feb. 4	

\*Formerly Ancon.



## RECEIPTS AND EXPENSES.

Small Levy of Tolls in January.—Deficit for Fiscal Year Exceeds \$2,450,000.

The slight Canal traffic in January yielded tolls amounting to \$654.39. On account of the closing of the Canal and the policy adopted of not attempting to handle any traffic, other than vessels which had waited since October at the entrances to pass through, the transits in January consisted only of the schooner *Carib II*, which had been waiting; the schooner *A. J. West*, which was handled through in order that she might be repaired at the dry dock to make her seaworthy; several locally owned small launches, which could pass through the dredging fleet without occasioning any interference; and vessels engaged in

the service of the Government on the Isthmus.

Two launches made the transit from the Atlantic entrance, and the tolls levied on them amounted to \$18. The two schooners went from the Pacific to the Atlantic, and the tolls from them aggregated \$636.39. The total of tolls collected in January, \$654.39, is less than one-eighth of one per cent of the \$573,365.67 of tolls collected in July, 1915, the month of greatest revenue since the Canal was placed in operation. It will be noted that the cost of operation and maintenance in January, \$595,713.27, was in excess of the tolls collected in the month of greatest revenue.

During the fiscal year ending June 30, 1915, the excess of tolls over the expenses of operation and maintenance amounted to \$276,636.

.38. During the current fiscal year, out of the seven months to February 1 there have been practically two and one-half months of Canal operation, and the expenses have been very high on account of the cost of dredging work which is charged to maintenance. The cost of dredging in Gaillard Cut charged to operation and maintenance in January was \$307,451.62, over half the total of operation and maintenance. In the month of January, 1915, it was \$187,922.63, or \$119,528.99 less than in the corresponding month of the current year.

A summary of the costs charged to operation and maintenance, in comparison with the figures for December, and the fiscal year to February 1, this year and last, follows:

ITEMS.	January, 1916.	December, 1915.	January, 1915.	Fiscal Year to Date.	
				This Year.	Last Year.
Marine Division:					
Admeasurement of vessels.....	\$211.94	\$287.45	\$843.69	\$4,759.88	\$5,650.75
Local inspection.....	243.99	568.21	299.73	2,455.11	2,086.70
Aids to navigation.....	5,971.95	4,602.42	4,343.23	33,680.80	26,281.42
Pilotage.....	321.74	243.28	6,405.48	20,832.34	28,172.30
Operation of harbor tugs—balance.....	2,679.45	6,012.56		24,940.07	
Total, Marine Division.....	9,429.07	11,713.92	11,892.13	86,668.20	62,191.17
Lock operation and maintenance—					
Gatun Locks:					
Superintendence.....	1,137.38	1,228.71	1,697.92	8,062.26	10,661.97
Operation.....	3,803.51	4,216.25	6,066.66	51,995.12	60,249.33
Maintenance of machinery and equipment.....	6,107.80	5,829.22	10,461.10	112,016.08	42,995.40
Maintenance of structure.....	741.39	1,882.71	4,435.57	7,174.81	18,289.48
Miscellaneous supplies and expenses.....	110.98	46.22	171.18	1,243.65	1,892.48
Total, Gatun Locks.....	11,901.06	13,203.11	22,852.43	180,191.92	133,191.66
Gatun Spillway:					
Operation.....	32.29	131.93	86.21	729.81	670.93
Maintenance of machinery and equipment.....	1,440.98	816.59		3,448.56	3,337.51
Maintenance of structure.....	662.18		2,192.60	766.70	4,001.74
Total, Gatun Spillway.....	2,135.45	948.52	2,278.81	4,945.07	8,010.18
Pedro Miguel Lock:					
Superintendence.....	1,132.34	1,296.12	1,728.90	9,611.09	8,200.52
Operation.....	2,493.01	2,257.40	6,175.53	29,601.73	50,110.18
Maintenance of machinery and equipment.....	4,375.74	3,837.21	6,545.99	35,267.40	25,357.43
Maintenance of structure.....	671.39	892.91	3,965.56	9,122.53	11,981.90
Miscellaneous supplies and expenses.....	90.72	194.24	148.23	1,302.39	958.29
Total, Pedro Miguel Lock.....	8,763.30	8,477.88	18,564.21	85,635.14	96,622.24
Pedro Miguel Dam:					
Maintenance.....					42.00
Miraflores Locks:					
Superintendence.....	951.88	1,287.80	1,970.79	9,127.71	10,170.25
Operation.....	4,219.74	3,742.08	7,438.32	29,043.51	63,034.10
Maintenance of machinery and equipment.....	3,781.30	4,048.78	14,696.52	33,181.99	43,833.49
Maintenance of structure.....	630.06	718.98	2,716.19	6,562.90	11,981.90
Miscellaneous supplies and expenses.....	151.56	189.65	311.25	1,559.41	1,934.01
Total, Miraflores Locks.....	9,734.54	9,987.29	27,133.07	89,475.52	130,952.85
Miraflores Spillway and East Dam:					
Operation.....	13.31	113.44	16.55	179.81	651.50
Maintenance of machinery and equipment.....	442.85	532.97	570.80	1,578.23	7,676.98
Maintenance of structure.....	58.12	9.53	30.45	387.03	320.47
Total, Miraflores Spillway and East Dam.....	514.28	655.99	671.80	2,145.07	8,648.95
Miraflores West Dam:					
Maintenance.....	7.51	70.26		347.72	377.17
Total, lock operation and maintenance.....	33,056.14	33,343.05	71,446.32	363,040.44	377,845.05
Dredging:					
Atlantic entrance.....	399.98	534.73	20,993.17	6,339.37	80,342.68
Gatun Lake.....					
Gaillard Cut.....	307,451.62	307,187.32	187,922.63	1,921,361.81	830,821.56
Miraflores Lake.....	6,052.38			15,369.01	4,978.80
Pacific entrance.....					
Total, dredging.....	313,934.18	307,722.05	208,915.80	1,943,070.19	916,143.04
Gatun Dam, maintenance:					
Removal of floating obstructions.....	1,447.55	1,109.32	1,472.43	12,640.61	12,253.99
Gatun-Miraflores Levee, maintenance.....	1,628.98	1,761.06	1,154.07	12,003.08	7,282.96
Colo. West Breakwater, maintenance.....	666.52			904.50	22,241.50
Colo. East Breakwater, maintenance.....	62.01	15,993.15		41,328.32	
Naos Island Breakwater, maintenance.....				58.45	461.93
Damages to vessels in locks.....	94.18		201.04	1,422.82	393.27
Damages to vessels in Canal.....				29,413.64	
Operation of floating derricks.....	13,061.87	12,127.21		13,659.13	19,034.68
Maintenance of transportation tracks.....	4,322.07	1,350.82	3,696.83		
Total, operation and maintenance.....	377,702.20	385,120.59	298,778.62	2,504,209.38	1,417,877.59
Proportion of overhead expenses.....	218,011.07	195,133.12	136,247.12	1,337,303.22	769,734.48
Total.....	595,713.27	580,253.71	435,025.74	3,841,512.60	2,187,612.07
Tolls earned.....	654.39	10,826.00	398,601.12	1,431,136.39	1,900,064.63
Tolls earned in excess of expenses.....					
Expenses in excess of tolls earned.....	595,058.88	569,427.71	36,424.62	2,450,376.21	283,547.39

## FORCE AND QUARTERS.

## Summary of Labor Force and Quarters at End of Month of January.

The total force employed on the Isthmus by the Panama Canal, the Panama Railroad, and contractors on January 26 amounted to 23,918. This was an increase of 2,003 over the 21,915 employed on December 23, 1915, which was the least number that had been employed since 1906. The number employed at the end of January this year was, however, 935 less than those employed at the end of January, 1915, and 9,701 less than the 33,619 employed on January 28, 1914.

The increases since December 23, 1915, were

principally 1,404 in the force employed by the Panama Railroad; 281 in the force of the commissary branch of the Supply Department; 148 in the Mechanical Division; and 67 in the force employed by contractors. The divisions in which there were the principal decreases included Terminal Construction, 207; the quartermaster branch of the Supply Department, 192; the Fortification Division, 139; and the Building Division, 86.

A summary of the force report for the half-month ending January 26, and of the occupation of Panama Canal and Panama Railroad quarters on the Isthmus on January 31 is given herewith:

DEPARTMENT OR DIVISION.	SILVER EMPLOYEES*														Total silver.	Total gold.	Grand total.
	Artisans.						Laborers.										
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Euro- pean 16 cents.	13 cents.	10 cents.	7 cents.	5 cents.					
Operation and Main- tenance, locks & office	307	...	3	25	7	...	9	1	8	43	...	...	403	136	539		
Terminal Constr'ct'n	416	1	76	225	560	86	...	73	296	631	4	16	2,384	307	2,691		
Building	94	2	333	450	450	32	...	3	169	145	3	1	1,689	172	1,861		
Electrical	81	...	29	43	87	74	...	...	...	5	...	...	320	186	506		
Municipal Eng.	310	...	50	143	214	147	17	1	204	622	10	31	1,749	82	1,831		
Dredging	1,883	1	11	48	179	71	...	...	113	40	...	4	2,350	339	2,689		
Mechanical	143	8	79	124	601	658	...	14	51	182	8	7	1,875	831	2,706		
Marine	138	...	...	...	...	...	...	...	...	...	...	...	138	36	174		
Fortifications	40	...	27	44	77	...	...	1	41	45	1	1	286	61	347		
General Construct'n	5	...	...	...	...	2	...	1	47	24	1	1	81	2	73		
Total	3,427	12	608	1,102	2,175	1,070	26	94	929	1,737	26	69	11,275	2,152	13,427		
Supply; main office	1,000	...	4	...	18	15	317	...	367	18	...	...	1,744	185	1,929		
Commissary	433	...	2	3	7	15	...	2	33	140	551	...	460	22	482		
Subsistence	757	32	58	66	65	...	...	...	...	...	...	...	1,708	79	1,787		
Quartermaster	25	...	...	...	...	...	...	...	...	...	...	...	23	207	230		
Accounting	406	...	3	3	11	...	...	...	23	354	9	20	836	185	1,021		
Health	119	1	1	...	...	...	...	...	...	...	...	...	121	417	538		
Executive	358	94	46	192	385	995	963	58	344	493	5	12	3,945	337	4,282		
Panama Railroad	31	2	8	20	10	...	...	...	34	58	...	...	163	48	211		
Contractors	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Grand total	6,554	141	730	1,391	2,671	2,095	1,315	185	1,470	3,560	58	105	20,275	3,643	23,918		
Month previous	6,526	187	751	1,409	2,351	1,355	754	148	1,355	3,358	55	109	19,461	3,554	21,015		
Changes	+28	-46	-21	-18	+31	+740	+561	+37	+115	+202	+3	-4	+1,914	+89	+2,003		

\*The wages are stated in United States currency.

## QUARTERS.

PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Child- ren	Men	Women	Child- ren	Men	Women	Child- ren
Balboa	935	331	305	140	10	22	1,636	483	678
Ancon	958	446	358	8	...	...	275	15	3
Croza	23	7	6	...	...	...	28	7	14
Petro Miguel	222	116	136	...	...	...	386	120	164
Paraiso	309	79	91	52	5	15	522	117	159
Culebra	23	15	12	1	1	7	409	254	316
Gambao	35	4	9	...	...	...	153	21	36
Gatun	206	173	220	29	2	3	537	389	689
Cristobal	972	344	411	72	...	...	1,693	216	435
Total	3,683	1,509	1,548	302	18	47	5,639	1,622	2,454

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 12 Asiatics. (3) Includes 16 American negroes, 80 Colombians and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores and Red Bank. (5) Includes Empire, Las Cascadas, and Bas Obispo. (6) Includes 11 Panamanians. (7) Includes Colon Beach and Colon Hospital. (8) Includes 23 East Indians, 18 colored American citizens, and 145 Panamanians.

## Deceased Employees.

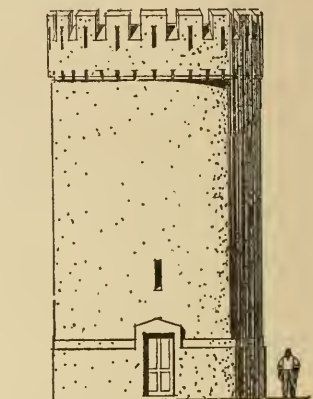
Name.	Check No.	Native of	Isthmian Residence.	Employed by	Date of death.
James Chambers	56634	Jamaica	Colon	Mechanical Div.	Feb. 28, 1916.
Evan Hoyt	30105	Barbados	Panama	P. R. R.	Feb. 21, 1916.
Fred Jennings	48723	Jamaica	Panama	Term. Cons. Div.	Feb. 18, 1916.
Andrew McCulloch	78535	Jamaica	Gatun	Term. Cons. Div.	Feb. 26, 1916.
Adam Parks	75369	Jamaica	Panama	Health Dept.	Feb. 25, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due the estates, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## NEW CONCRETE WATER TANK.

## Structure of Unusual Architectural Design at Railroad Yards at Balboa.

As a part of the policy of the Canal to give its essentially utilitarian structures a pleasing appearance in the landscape, the concrete water tank which is being erected at the head of the railroad yards at Balboa, in the vicinity of the roundhouse, will have an exterior design in a castellated style. An architectural sketch of its front elevation is reproduced herewith. The structure is to be completely utilitarian, a simple cylindrical water tank, with the exception of the machicolations around the top. The parapet has been modeled on bulky lines, to dominate the structure and give the impression of some-



ARCHITECTURAL SKETCH OF CONCRETE WATER TANK BEING BUILT AT BALBOA.

thing more interesting than a plain standpipe which would otherwise resemble a silo.

The tank proper will occupy the upper part of the structure, from approximately the top of the aperture over the door. It will have a dome bottom, a segment of a sphere drawn on a radius of 14 feet 10 inches. The tank itself will have a diameter, inside, of 22 feet, and will be 19 feet six inches in height, from the top of the dome to the roof. The extreme height of the structure will be 43 feet eight inches above the ground line. The outlet of the discharge pipe will be placed near the bottom of the tank, giving a head of 40 feet above the top of the track rails.

The circumferential steel is stressed to stand a pressure of 10,000 pounds to the square inch, or 62 per cent of the usual allowable stress in the steel as used in concrete structures on the Isthmus.

The mixture of the concrete has been designed to make the walls waterproof, employing proportions of  $\frac{1}{3}$  parts of cement,  $\frac{1}{2}$  of sand, and 4 of rock. The apertures left by the removal of the bolts for holding the forms together will be filled by driving a wooden plug, about an inch long, half way through the hole and grouting on both sides of the plug with a rich cement mixture.

The foundation for the tank is 24 10-inch pipe piles, driven to refusal and filled with concrete. Some of the piles are as much as 50 feet in length. The site of the tank is land



reclaimed by filling a swamp, and hard material lies deep below the surface.

The capacity of the tank will be 59,500 gallons, and its essential purpose is to serve as a surge tank, to relieve the water mains of the extra load thrown on them when water is drawn direct from them into the tanks of locomotives. In order to fill the locomotive tank within a reasonable time it is necessary to have a large discharge, and when this comes direct from the mains it overloads the motors in the pump station when they endeavor to maintain the pressure for which their impellers are adjusted. The tank will be fed through a 4-inch supply pipe, off the regular 10-inch low service main, discharging near the top of the tank under the control of a float valve. The outlet, for filling the locomotive tanks, will be through a 10-inch pipe, but at no time will there be a greater draft on the mains than that through the 4-inch supply pipe.

The lower part of the tankhouse will house the valves on the mains. It is proposed also to move the Venturi meter for the 10-inch main from its present situation in a concrete cabin on the flat, about midway between Balboa shops and the Administration Building, to the room within the tankhouse.

#### Beginning Construction of Permanent Laundry Building at Ancon.

Work has been in progress since the first of last month on a permanent building of reinforced concrete to house the Canal laundry at Ancon. The foundations have been completed, the forms placed for the floor, and the pouring of concrete for the floor is under way.

The building is to be situated in the rear of the Ancon market for silver employees (the old model house), close to the main line of the Panama Railroad and to the branch track leading to the Ancon commissary.

The new laundry is to be considerably larger than the present one in Ancon, which was designed to meet the needs of Ancon Hospital and was later taken over by the Supply Department. It will be the purpose of the permanent laundry adequately to care for all the hospital, hotel, and individual employees' work, and the needs of shipping at the Pacific end of the Canal. The Cristobal laundry will be maintained at the Atlantic end.

The new laundry building is to be 300 feet long by 100 feet wide, and one story in height. Longitudinally, it will be divided in two parts, the roof consisting of two parallel bays, supported on 50-foot steel trusses. The height of the building will be 18 feet to the top of the columns supporting the trusses, or 30½ feet to the peaks of the gables. The building has been designed to be especially airy and light, and about 75 per cent of the walls will be windows. A modern loft and office building in New York, which is advertised as a building of "glass and sunlight," has windows occupying 78 per cent of its walls.

#### Pacific Mail Service to Be Continued.

Following the purchase of a controlling interest in the Pacific Mail Steamship Company from the Southern Pacific Company by W. R. Grace & Company and the American International Corporation, the Pacific Mail service between San Francisco and Balboa, consisting of direct sailings and sailings with

calls at intermediate ports in Central America, will be continued, and the ships will continue under the American flag for the present.

It is the aim of the new owners, according to the statement of the representative of W. R. Grace & Company in Panama, to make the Central American service more regular than it has been heretofore, and eventually to equip it with improved steamships. By removing the steamship line from the ownership of a railroad company operating a rail line in the United States, arrangements can be made to operate its vessels through the Canal, and some of the vessels will make Cristobal their terminus, as has been done by the Salvador Railway Company's vessels, the vessels of the Peruvian and Chilean lines, and of the Pacific Steam Navigation Company. Announcement has been made of the recent purchase of three ships from the Royal Dutch West India Mail for use in this service.

The corporate entity of the Pacific Mail Steamship Company is to be preserved, and the agency at Balboa will be maintained separately from the agency of W. R. Grace & Company in Panama, as well as from the International Banking Corporation, a subsidiary of the American International Corporation.

The Pacific Mail service between Balboa and San Francisco employs seven vessels, averaging approximately 6,000 tons gross, with length of about 300 feet, carrying passengers and cargo. They are the *Aztec*, *City of Para*, *Newport*, *Pennsylvania*, *Peru*, *San Jose*, and *San Juan*.

The steamship *China*, the last of the company's ships employed in its abandoned Oriental service, has been sold to the China Mail Steamship Company.

#### The "Panama" Delayed by Fog and Storm.

The steamship *Panama*, which arrived at Cristobal early in the morning of Friday, March 3, from New York, two days late, had been delayed in New York harbor for that period. Within the inner harbor the ship ran into dense fog, and as the barometer indicated a gale blowing outside, the master lay to until the weather cleared.

#### Additions to the Panama Canal Library.

The following is bulletin No. 7 of recent additions to the Canal Library at Balboa Heights:

GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS, ETC.  
American Institute of Electrical Engineers, Membership list, corrected to February 1, 1916.  
Boston, Massachusetts, Report of the Public Works Department, Boston, 1914.  
Bureau of Railway Economics, Summary of railway returns for the fiscal year ending June 30, 1915. Consecutive series No. 88.  
Marroquin y Rivera, Memoria descriptiva de las obras de provision de aguas potables para la ciudad de Mexico. (Descriptive report of the Mexico City water works system, in Spanish). By Manuel Marroquin y Rivera, Technical Director, 1914.  
Herbert Quick, Shall we give up the ship? Reprint of an article in *Saturday Evening Post*. Senate document No. 320, 64th Congress, first session. By Herbert Quick, 1916.  
United States Circuit Court of Appeals, Fifth Circuit, Brief and argument on behalf of Panama Railroad Company, in case No. 2881 vs. James Beckford, Error to, and appeal from, the District Court of the Canal Zone.  
State of Virginia, Handbook of Virginia. Compiled by Geo. W. Koener, Commissioner of Agriculture and Immigration, 1915.  
R. H. Whitehead, Hydraulics of the locks of the Panama Canal. Paper presented at International Engineering Congress, San Francisco, 1915.  
Bureau of Mines, Some engineering problems of the Panama Canal in their relation to geology and

topography. Bulletin No. 86. By Donald F. Mac-Donald, 1915.  
Department of Agriculture, Commercial grading, packing, and shipping of cantaloupes. Farmers' bulletin No. 707. By C. T. More and G. V. Branch, 1916.  
Department of Commerce, Annual report of the Secretary of Commerce, 1915.  
Department of Commerce, Annual report of the Chief of Bureau of Foreign and Domestic Commerce to the Secretary of Commerce for the fiscal year ended June 30, 1915.  
Department of Commerce, Annual report of the Chief, Division of Publication, to the Secretary of Commerce for the fiscal year ended June 30, 1915.  
Department of Commerce, Foreign tariff notes, No. 18, Bureau of Foreign and Domestic Commerce, 1915.  
Department of Labor, Regularity of employment in the women's ready-to-wear garment industries. Bulletin No. 183 of Bureau of Labor Statistics, 1916.  
War Department, Manual for the Medical Department, U. S. Army, 1911, with correction sheets to 1915.  
MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.  
American Type Founders Company, Specimen book of type styles and catalogue of printing machinery and materials, 1912.  
Automatic Valve Grinding Machine Company, Catalogue of automatic valve grinding machines, 1908.  
Brooklyn Shield & Rubber Company, Leaflets and rubberized sheeting and sheets, rubber gowns, infants' goods, etc.  
Chambers Motor Company, Catalogue of 6-40 motor cars.  
Cunard Steamship Company, Ltd., Proposed sailings America-Europe, rates, etc., February-April, 1916; leaflet.  
Dieges & Clust, Catalogue of medals.  
Empire Machinery & Supply Corporation, General catalogue of machinery and supplies.  
Grand Rapids Hand S-Crew Company, Domestic science furnishings, booklet; school furnishings, folder; laboratory furnishings, leaflet.  
Peter Henderson & Company, Farmers' manual, 1916.  
Hoskins Manufacturing Company, Bulletin No. 12 of electric furnaces, pyrometers, and hot plates.  
Hubbard and Company, Catalogue of pole line hardware and construction specialties, 1916.  
Jefferson Glass Company, Catalogue of Chippendale Krys-Tol glassware. Price list No. 40.  
James McMillan & Company, Folder of smokeless furnaces.  
Northwestern Steel and Iron Works, Bulletin No. 11 of Miracle tile panels; special bulletin No. 16 of Northwestern concrete mixers.  
Page Boiler Company, Catalogue of Page Burton water tube boilers.  
Pathscope Company, Pathscope projector and motion picture cameras, folder; list of non-inflammable Pathscope films, booklet.  
Russell Grader Manufacturing Company, Catalogue of road building and earth handling machinery, culverts, bridges, etc.  
P. A. Salisbury-Schulz Company, Catalogue of stamps, badges, etc.  
Charles C. Smith, Leaflets of adjustable index tabs and guides.  
Star Head Light and Lantern Company, Catalogue No. 3, 1915.  
Thompson Brown and Company, Descriptive catalogue of elementary and high school text books.  
Trussed Concrete Steel Company, Catalogue of United steel sash, 7th edition, 1915.  
Union Fibre Company, Insulation for cold temperatures, booklet, 1911; Linofelt, booklet and price list, 1914.  
United States Electrical Tool Company, Catalogue No. 15 of 1916 of portable electrical tools, with price list.  
James Vick's Sons, Aster book for florists.  
A. W. Whelan Brass Works, Catalogue of brass specialties; sanitary bubbling drinking fountains, leaflet.  
Wilson-Jones Loose Leaf Company, Booklet containing sample forms of ledger and statement forms for mechanical bookkeeping systems.  
Winkler Boring Machine Company, Leaflet and price list of Winkler boring machines.

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., March 7, 1916.  
The following insufficiently addressed letters and papers have been received at the office of the Director of Posts and may be procured upon request of the addressee:  
Barrow, George S. Lee, Ellis  
Blood, W. W. Mercer, Guy C.  
Corsica, J. F. Mills, Lehart  
Downing, Mrs. J. Richard, Miss Elisabeth  
Freedom-Promoting Co.† Smith, Philip M.  
Graham, George Wilson, C. C.  
Kenzerski, Peter Wilson, Robert C.  
Lefford, Andrew M. I.  
†Paper.



## OFFICIAL CIRCULARS.

## Changes in Electrical Wiring.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., March 2, 1916.

To all concerned—The recent semiannual inventory of electric lights in quarters of employees of The Panama Canal and Panama Railroad has disclosed the fact that there is frequent disregard of the provisions of circular No. 676-6, forbidding the occupants of buildings belonging to The Panama Canal and Panama Railroad making any addition or change whatsoever in the electrical appliances of any kind whatsoever, without first obtaining the necessary authority of the Electrical Engineer.

Future disregard of this regulation will not be tolerated. The Electrical Engineer will make the necessary inventories and inspections to insure compliance, and will, after investigation, report any violations direct to this office for the necessary disciplinary action.

CHESTER HARDING,  
Acting Governor.

## Levels and Transits.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., February 28, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

It is requested that statement be furnished to the Surveying Officer with as little delay as practicable, showing the following information with reference to transits and levels:

Number on hand (kin 1 make, and serial number); present condition of instruments on hand; number actually required for present use; surplus instruments on hand, if any; will additional instruments be required at a later date and if so, when and what class; when is it expected that instruments now in use can be replaced.

JAY J. MORROW,

Acting Governor, The Panama Canal,  
Acting Second Vice-President, Panama Railroad.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., March 1, 1916.

CIRCULAR NO. 117:

Effective this date, Mr. J. M. King is designated an accountable official of The Panama Canal, and as such will have on file all stock held by the quartermaster's store at Paraiso and all non-expendable property carried on the pro cert. records of the district quartermaster at Paraiso.

Mr. H. F. Schwick will cease to be an accountable official of The Panama Canal upon effecting a transfer of his accountability to Mr. King.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:

CHESTER HARDING,  
Acting Governor.

## Bills for Farm Products from Corozal Hospital.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., February 4, 1916.

To all concerned—Existing circulars provide that bills for sale of farm products, milk, etc., from the Corozal Hospital shall be paid on or before the 15th of the month following that in which the charges accrued.

By direction of the Governor, if such bills are not paid on or before the 15th of the month, a penalty of 50 cents will be added, and in case of employees of The Panama Canal or Panama Railroad Company, a deduction for the amount of such bill, including penalty, will be made on the payroll. Repeated failure to pay the bills within the time prescribed will be considered ground for denial of further credit privileges.

H. A. A. SMITH,

Auditor, The Panama Canal.

## JOINT LAND COMMISSION

## Rule of Dismissal.

In the matter of the claim of Eduardo Castillo, rule of dismissal No. 229, docket No. 1023, November 15, 1915—The claim of Eduardo Castillo, docket No. 1023, for certain improvements said to have been located at La Seiba, Canal Zone, which came on for hearing this date, is hereby dismissed, as the evidence presented to the Commission is that the claimant made a direct settlement with the agents of the United States for his property, and that payment therefor was made by the United States on August 14, 1915.

RICARDO J. ALFARO, FEDERICO BOYD, NICHOLAS CORNET, LEVI M. KAGY, Commissioners.

## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

The following list of retail prices of cold storage provisions will be effective March 9, 1916.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

## FRESH BEEF.

	Price.
Beef, suet, special, per lb.	\$.034
Beef, suet, native, per lb.	.03
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.05
Soup bone, special, per lb.	.023
Soup bone, native, per lb.	.02
Stew beef, native, per lb.	.08
Plate beef, native, per lb.	.08
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (3 lbs. up), special, per lb.	.16
Rib roast, 1st cut (3 lbs. up), native, per lb.	.19
Rib roast, 1st cut (3 lbs. up), special, per lb.	.11
Pot roast, native, per lb.	.20
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse roast, choice, per lb.	.22
Porterhouse roast, special, per lb.	.22
Porterhouse steak, native, per lb.	.16
Round steak, bottom, special, per lb.	.13
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.20
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.20
Porterhouse steak (11 lbs. up), choice, per lb.	.24
Porterhouse steak (11 lbs. up), special, per lb.	.23
Porterhouse steak (11 lbs. up), native, per lb.	.17
Porterhouse steak, short, choice, per lb.	.28
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Te de loin steak, native, per lb.	.25
Round steak, western, special, per lb.	.25
Round steak, native, per lb.	.11

## FRESH MEATS.

Lamb, chops, per lb.	.29
Lamb, clo s, shoulder, per lb.	.20
Lamb, legs, 5 to 8 lbs., per lb.	.20
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.15
Lamb, stewing, per lb.	.12
Mutton, chops, short cut, per lb.	.23
Mutton, chops, shoulder, per lb.	.19
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.19
Pork, hams, fresh (see footnote), per lb.	.25
Pork, loins, chops, or roast, per lb.	.19
Pork, shoulders, fresh (see footnote), per lb.	.20
Veal, chops, per lb.	.24
Veal, chops, shoulder, per lb.	.24
Veal, cutlets, per lb.	.41
Veal, loin for roasting, per lb.	.38
Spare ribs, pork, per lb.	.18
Veal, stewing, per lb.	.15

## MISCELLANEOUS.

Brains, calves', per lb.	.07
Calves' heads, ea.	.78
Kidneys, beef, per lb.	.04
Livers, beef, per lb.	.04
Livers, calves', per lb.	.27
Pate de foie gras, jar.	.55
Pigs' feet, fresh, per lb.	.03
Pigs' heads, fresh, per lb.	.55
Pigs' heads, fresh 1 head, half.	.42
Sausage, frankfurter, per lb.	.17
Sausage, frankfurter, per lb.	.19
Sausage, pork, per lb.	.17
Sausage, pork, per lb.	.23
Sausage, pork, homemade, per lb.	.24
Sausage, S. and, per lb.	.38
Steak, hamburger, pkg.	.17
Steak, hamburger, 20-pound container, per lb.	.14
Sweetbread, beef, per lb.	.21
Tails, ox, per lb.	.07
Tongue, beef, native, whole, per lb.	.20
Yeast, per lb.	.31
Yeast, cake.	.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.28
Bacon, breakfast, sliced, per lb.	.29
Bacon, sliced, jar.	.30
Bacon, sliced, tin.	.23
Bacon, strips, whole strip.	.20
Beef, corned—No. 1, per lb.	.19
Beef, corned—No. 2, per lb.	.12
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.21
Ham, shoulders, per lb.	.30
Shoulder, beef, whole, per lb.	.17
1. Ham, sugar cured (whole) per lb.	.22
2. Ham, sugar cured (half) per lb.	.25
3. Ham, sugar cured (1 lb. cut) per lb.	.30
1. Ham, sugar cured, boiled (whole) per lb.	.33
2. Ham, sugar cured, boiled (half) per lb.	.30

3. Ham, sugar cured, boiled (sliced).	.41
Ham, York, per lb.	.40
Pigs' feet, pickled, per lb.	.08
Pork, bellies, per lb.	.16
Pork, clear, per lb.	.11
Pork, standard meat, per lb.	.11
S. ied head 1 mea, jar.	.31
Tongue, beef, corned, whole, per lb.	.20
Tongue, pigs', per lb.	.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	.31
Broilers, milk fed, per lb.	.32
Capons, per lb.	.37
Chickens, fancy roasting, per lb.	.38
Chickens, fancy roasting, milk fed, per lb.	.31
Ducklings, per lb.	.26
Fo, vs, light, per lb.	.23
Fowls, western, dry picked, per lb.	.25
Geese, per lb.	.27
Grouse, ea.	.45
Squabs, ea.	.45
Turkeys, per lb.	.37

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	.46
Butter, creamery, 69-71 lb. tub, whole tub per lb.	.45
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, ea.	1.50
Cheese, gouda, per lb.	.36
Cheese, parmesan, per lb.	.37
Cheese, Philadelphia cream, cake.	.09
Cheese, Roquefort, per lb.	.09
Cheese, smoky, per lb.	.09
Cheese, Swiss, per lb.	.43
Cheese, Young America, per lb.	.26
Cream, 30 per cent, 1 pt.	.17*
Cream, 30 per cent, qt.	.17*
Cream, 30 per cent, qt.	.52**
Eggs, fresh, per doz.	.38†
Eggs, fresh, 1 doz. only.	.25**
Egg-lit, ea. per lb.	.25**
Ice cream, (see footnote) qt.	.25†
Ice cream, (see footnote) gal.	.50†
Milk, Sheffield farms, qt.	.15*
Oleomargarine, per lb.	.29

## FISH.

Bluefish, per lb.	.19
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.11
Halibut, fresh, per lb.	.13
Horri g, smoke, per lb.	.13
Oysters, fresh, per qt.	.44
Salmon, fresh, per lb.	.12
Whitefish, smoked, per lb.	.32

## VEGETABLES.

Beets, per lb.	.021*
Beets, new, per lb.	.07
Cabbage, per lb.	.02
Carrots, per lb.	.03*
Carrots, new, per lb.	.20
Caulower, per lb.	.10
Celery, per head.	.10
Clocci, ea.	.02
Egg plant, per lb.	.09
Lettuce, per lb.	.11
Onions, per lb.	.05
Parsnips, per lb.	.02
Parsnips, per lb.	.02†
Pears, great, per lb.	.08
Plantains, per doz.	.12
Potatoes, white, per lb.	.03
Raisins, per bunch.	.15
Squash, per lb.	.03
Tomatoes, per lb.	.03
Turnips, per lb.	.02
Yams, per lb.	.03

## FRUITS, DRIED.

Apples, evaporated, per lb.	.12
Appricots, evaporated, per lb.	.15
Currants, cleaned, pkg.	.15
Figs, dried, 12-oz pkg.	.12*
Figs, 4-lb. box.	.36
Peaches, evaporated, per lb.	.03
Pears, evaporated, per lb.	.18
Pel, citron, per lb.	.23
Pel, lemon, per lb.	.16
Pel, orange, per lb.	.16
Praunes, stewed, per lb.	.11
Raisins, seeded, pkg.	.08
Raisins, table cluster, per lb.	.15

## FRUITS, FRESH.

Apples, fresh per lb.	.04
A. p. s. fresh, select, per lb.	.07
Bananas, 8 to 10 in. over, per bunch.	.40
Bananas, 6 to 8 in. over, per bunch.	.38
Bananas, ea.	.001
Cranberries, per lb.	.14
Custard apples, ea.	.02
Grapes, per lb.	.34
G. w. n. t. s. l. t. ea.	.07
Guapefruit, tropical ea.	.03†
Lemons, per doz.	.15†
Oranges, select ea.	.04
Oranges, tropical, doz.	.12
Palmis, ea.	.24
Pineapples, ea.	.11*

\* Indicates advance from preceding list.

\*\* Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.

\* Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## SHIPPING INFORMATION.

## April Weather Probabilities.

The following weather conditions may be expected to prevail at the Canal entrances during the month of April, 1916. Predictions are based on the records at Colon and Ancon for the past eight and 10 years, respectively:

**Winds**—Fresh northerly dry season winds will continue during the month, with a probable decrease in the wind movement due to the approach of the rainy season and as compared with the March conditions. Northerly winds will prevail at the Atlantic entrance to the Canal, with an average hourly velocity of about 13 miles an hour. A maximum velocity of more than 33 miles an hour is not likely to occur, although a maximum velocity of 46 miles an hour from the north, was recorded on the 4th of April, 1915, during the most severe and intense storm recorded since the American occupation. Over the interior and on the Pacific side the prevailing winds will blow from the northwest, with an average hourly velocity of about nine miles an hour. The maximum velocity is not likely to exceed 26 miles an hour.

**Rain**—Occasional showers may be expected at both the Atlantic and Pacific entrances and as much as one inch of rain may fall in one day unless a repetition of last April's storm should occur, causing this amount to be exceeded. The average aggregate April rainfall on the Atlantic side has been 4.19 inches; that on the Pacific side, 2.87 inches. The average numbers of days on which 0.01 inch of rain fell have been 16 and eight, respectively.

**Fogs**—No fogs are likely to occur at the Pacific entrance to the Canal, and the average number of fogs at the Atlantic entrance during the month of April has been only one. Night and early morning fogs may be expected over the Gaillard Cut section of the Canal. The average number of nights with fog at Culebra has been 11, although most of them have been light and practically all were dissipated by 8.30 a. m.

**Temperature**—An average shade temperature of 81° Fahrenheit will probably occur at the Atlantic entrance, and an average temperature of 82° F. may be expected at the Pacific entrance. On the Atlantic side the temperature is not likely to rise above 90° F., or fall below 72° F., but a maximum of 97° F., and a minimum of 64° F. may occur at the Pacific entrance. The mean daily range in temperature during the month of April is much greater at the Pacific than at the Atlantic entrance to the Canal, the ranges being 18° F. and 7° F., respectively, for the years of record.

**Barometric pressure**—Changes in barometric pressure on the Isthmus are very slight, except for the well marked diurnal change which is a characteristic of tropical regions, and of little value in forecasting weather conditions. The average April sea level pressure is 29.86 inches. A maximum air pressure of more than 29.99 inches or a minimum of less than 29.73 inches is not likely to occur at either entrance of the Canal.

**Storms**—Severe general storms of wide extent are not likely to occur at either entrance of the Canal, although a rough sea and heavy swell may be produced outside of the breakwaters at Colon by the fresh northerly trade winds, or by the so-called "northerly" that occasionally reach as far south as the Atlantic entrance to the Canal. Occasional thunder-

storms may be expected at both Canal entrances. General fair weather with smooth to moderate seas may be expected at the Pacific entrance.

**Tides**—The average tidal range at Colon is less than one foot, and the maximum range is approximately two feet. Owing to this fact, tidal fluctuations need not be considered in navigating the Atlantic entrance to the Canal. At the Pacific entrance the average tidal range is about 13 feet, while a maximum range of 20 feet may occur.

Panama (Balboa) tide predictions for the remainder of March and for April are given below:

## Tide Predictions, Port of Balboa.

MARCH.				
DATE.	Time and height of high and low water.			
Wed., March 8.....	0:23	6:37	12:41	18:54
	0.1	14.9	0.9	15.2
Thurs., March 9.....	1:03	7:16	13:22	19:31
	1.0	14.0	2.0	14.2
Fri., March 10.....	1:47	7:55	14:07	20:11
	2.1	13.0	3.2	13.1
Sat., March 11.....	2:36	8:39	15:00	20:57
	3.2	11.9	4.3	12.1
Sun., March 12.....	3:33	9:36	16:04	22:00
	4.3	11.1	5.1	11.3
Mon., March 13.....	4:40	10:55	17:14	23:20
	4.7	10.7	5.5	11.1
Tues., March 14.....	5:49	12:18	18:23	.....
	4.7	10.9	5.2	.....
Wed., March 15.....	0:31	6:54	13:19	19:25
	11.3	4.3	11.6	4.5
Thurs., March 16.....	1:30	7:48	14:04	20:15
	12.0	3.5	12.4	3.5
Fri., March 17.....	2:14	8:34	14:42	20:57
	12.8	2.6	13.4	2.4
Sat., March 18.....	2:55	9:13	15:17	21:36
	13.6	1.7	14.3	1.3
Sun., March 19.....	3:33	9:49	15:52	22:12
	14.4	1.6	15.0	0.5
Mon., March 20.....	4:11	10:25	16:26	22:48
	14.9	0.5	15.6	-0.1
Tues., March 21.....	4:49	11:00	17:03	23:24
	15.2	0.2	16.0	-0.3
Wed., March 22.....	5:28	11:37	17:41	.....
	15.4	0.2	16.0	.....
Thurs., March 23.....	0:03	6:07	12:16	18:21
	-0.2	15.2	0.6	15.8
Fri., March 24.....	0:44	6:51	13:00	19:04
	0.3	14.8	1.2	15.2
Sat., March 25.....	1:32	7:37	13:51	19:53
	1.0	14.2	2.1	14.4
Sun., March 26.....	2:28	8:32	14:52	20:52
	1.8	13.4	3.0	13.5
Mon., March 27.....	3:35	9:40	16:04	22:07
	2.6	12.8	3.5	12.9
Tues., March 28.....	4:47	11:01	17:21	23:32
	2.9	12.7	3.6	12.8
Wed., March 29.....	5:59	12:19	18:32	.....
	2.7	13.3	3.0	.....
Thurs., March 30.....	0:48	7:05	13:22	19:37
	13.2	2.1	14.1	2.0
Fri., March 31.....	1:49	8:03	14:15	20:31
	14.0	1.2	15.0	1.0

## APRIL.

DATE.	Time and height of high and low water.			
Sat., April 1.....	2:40	8:52	15:01	21:18
	14.7	0.5	15.7	0.1
Sun., April 2.....	3:26	9:36	15:43	22:00
	15.2	0.0	16.1	-0.4
Mon., April 3.....	4:09	10:17	16:24	22:39
	15.5	-0.1	16.2	-0.6
Tues., April 4.....	4:50	10:36	17:03	23:16
	15.4	0.1	15.9	-0.3

DATE.	Time and height of high and low water.			
Wed., April 5.....	5:29	11:33	17:42	23:53
	15.1	0.6	15.4	0.3
Thurs., April 6.....	6:07	12:10	18:18	.....
	14.5	1.4	14.7	.....
Fri., April 7.....	0:30	6:39	12:50	18:55
	1.1	13.8	2.4	13.9
Sat., April 8.....	1:11	7:22	13:32	19:33
	2.1	12.9	3.5	12.9
Sun., April 9.....	1:57	8:04	14:22	20:17
	3.2	12.1	4.4	12.0
Mon., April 10.....	2:51	8:55	15:24	21:12
	4.0	11.3	5.2	11.3
Tues., April 11.....	3:56	10:04	16:35	22:28
	4.6	10.9	5.5	10.9
Wed., April 12.....	5:04	11:27	17:45	23:49
	4.8	11.0	5.2	11.1
Thurs., April 13.....	6:09	12:31	18:46	.....
	4.4	11.6	4.4	.....
Fri., April 14.....	0:50	7:06	13:20	19:39
	11.7	3.8	12.6	3.3
Sat., April 15.....	1:39	7:54	13:59	20:24
	12.6	2.9	13.6	2.2
Sun., April 16.....	2:21	8:37	14:38	21:05
	13.5	2.0	14.6	1.0
Mon., April 17.....	3:01	9:18	15:15	21:44
	14.4	1.1	15.5	0.4
Tues., April 18.....	3:41	9:57	15:54	22:23
	15.0	0.5	16.1	-0.7
Wed., April 19.....	4:23	10:36	16:35	23:02
	15.5	0.0	16.4	-1.0
Thurs., April 20.....	5:06	11:17	17:18	23:43
	15.7	0.0	16.4	-0.9
Fri., April 21.....	5:51	12:00	18:04	.....
	15.6	0.3	16.1	.....
Sat., April 22.....	0:28	6:38	12:36	18:52
	-0.4	15.2	1.0	15.4
Sun., April 23.....	1:18	7:29	13:40	19:45
	0.4	14.6	1.8	14.5
Mon., April 24.....	2:15	8:25	14:43	20:45
	1.3	13.9	2.7	13.6
Tues., April 25.....	3:21	9:31	15:55	21:57
	2.2	13.4	3.2	12.8
Wed., April 26.....	4:29	10:47	17:07	23:29
	2.6	13.2	3.2	12.6
Thurs., April 27.....	5:37	12:00	18:16	.....
	2.6	13.6	2.8	.....
Fri., April 28.....	0:33	6:41	13:01	19:17
	12.9	2.4	14.1	2.1
Sat., April 29.....	1:32	7:38	13:52	20:10
	13.5	2.0	14.7	1.3
Sun., April 30.....	2:22	8:29	14:36	20:56
	14.0	1.5	15.1	0.6

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean scale. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 04 (midnight) to 234 (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3.47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.  
Every Monday to New York, for all States. Due at New York the following Monday.\*  
Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., March 5, 1916.)

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
Feb. 29	Kilpatrick	U. S. Army transport.	Galveston, Tex.
March 2	Alrina	Thomas E. Cole.	Port Limon.
March 2	Leonidas	United States Navy.	S. ports.
March 4	Siskiyou	E. K. Turner Lumber Co.	New Orleans.
March 4	Quillota	Pacific Steam Nav. Co.	Cartagena.

## \*DEPARTURES.

Date	Vessel	Line	For
March 3	Alrina	Thomas E. Cole.	Kingston, Ja.
March 3	Kilpatrick	U. S. Army transport.	Galveston, Tex.
March 11	Montevideo	Italian Line.	Barcelona.
March 12	Venezuela	French Line.	Saint Nazaire.
March 12	Limalite	International Petroleum Co.	Unknown.
March 12	Leonidas	United States Navy.	Unknown.
March 12	Siskiyou	E. K. Wood Lumber Co.	Unknown.
March 12	Wisdom	Dr. Salisbury	Unknown.
March 12	Albion	Leyland Line.	Unknown.

## \*EXPECTED ARRIVALS.

March 7	Venezuela	French Line.	Saint Nazaire.
March 9	Montevideo	Italian Line.	Barcelona.
March 11	Gamito	Elders & Fyffes.	Port Limon.
March 17	Albion	Leyland Line.	Port Limon.
March 17	Albion	Leyland Line.	Port Limon.
March 17	Albion	Leyland Line.	Port Limon.
March 17	Albion	Leyland Line.	Port Limon.
March 17	Albion	Leyland Line.	Port Limon.
March 17	Albion	Leyland Line.	Port Limon.
March 17	Albion	Leyland Line.	Port Limon.

## \*EXPECTED DEPARTURES.

March 7	Quillota	Pacific Steam Nav. Co.	Kingston, Ja.
March 7	Ethel Clarke	Robert Wilcox & Co.	St. Andrews, Fla.
March 7	Comito	Elders & Fyffes.	Bristol, via King'n.
March 11	Montevideo	Italian Line.	Barcelona.
March 12	Venezuela	French Line.	Saint Nazaire.
March 12	Limalite	International Petroleum Co.	Unknown.
March 12	Leonidas	United States Navy.	Unknown.
March 12	Siskiyou	E. K. Wood Lumber Co.	Unknown.
March 12	Wisdom	Dr. Salisbury	Unknown.
March 12	Albion	Leyland Line.	Unknown.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From
Feb. 27	Acajulla	Pacific Steam Nav. Co.	Guayaquil.
Feb. 27	Gamito	Pacific Steam Nav. Co.	Valparaiso.
Feb. 28	Seyo Maru	Toyo Kisen Kaisha.	Coronel.
March 1	Palena	South American S. S. Co.	Lata.
March 1	Limari	Peruvian Line.	Callao.
March 1	San Francisco	Panama Transport Co.	Göteborg.
March 2	Alcina	Pacific Steam Nav. Co.	Camp Sabbath.
March 3	Jamaica	Pacific Steam Nav. Co.	Tumaco.
March 4	Manavi	Pacific Steam Nav. Co.	Guayaquil.
March 4	Flor Luckenbach	Lucienbach Line.	San Francisco.
March 4	Alcina	Long Beach S. S. Co.	Guayaquil.
March 5	Greystoke Castle	Greystoke Castle S. S. Co.	Portland.
March 5	Kiyo Maru	Toyo Kisen Kaisha.	Hongkong.
March 5	Mars	Pacific Steam Nav. Co.	Taitai.
March 5	California	Pacific Steam Nav. Co.	Portland.
March 5	Wascana	Aktieselskabet Asker.	Portland.

## EXPECTED ARRIVALS.

March 6	Crown of Seville	Crown Line.	San Francisco.
March 7	Limari	South American S. S. Co.	Valparaiso.
March 9	Annie Johnson	Johnson Line.	Portland.
March 15	Hermes	Bruusgaard Kips Dnpsk.	Mejillones.
March 12	Hesperia	W. Scoresby Routledge.	San Francisco.
March 12	Mano (yacht)	W. Scoresby Routledge.	San Francisco.

## DEPARTURES.

Date	Vessel	Line	For
Feb. 28	Cauca	Pacific Steam Nav. Co.	Guayaquil.
Feb. 29	Denver	United States Navy.	Valparaiso.
Feb. 29	Urubamba	Peruvian Line.	Callao.
Feb. 29	Wojayair	South Sea Navigation Co.	San Francisco.
Feb. 29	Wojayair	South Sea Navigation Co.	San Francisco.
Feb. 29	Wojayair	South Sea Navigation Co.	San Francisco.
Feb. 29	Wojayair	South Sea Navigation Co.	San Francisco.
Feb. 29	Wojayair	South Sea Navigation Co.	San Francisco.
Feb. 29	Wojayair	South Sea Navigation Co.	San Francisco.

## EXPECTED DEPARTURES.

March 5	Acajulla	Pacific Steam Nav. Co.	Tumaco.
March 5	Gamito	Pacific Steam Nav. Co.	Peruvian ports.
March 6	Palena	South American S. S. Co.	Valparaiso.
March 6	Manitara	Peruvian Line.	Guayaquil.
March 8	Monopi	Pacific Steam Nav. Co.	Guayaquil.
March 13	Limari	South American S. S. Co.	Valparaiso.

the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.† Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*Note—The sailings on Monday, April 3 and May 1 will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the sailings on March 6 and April 3.

When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Coal.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present price, as at Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$2; at Balboa, the price is \$1 more per ton, either form of delivery.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, March 4, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun Lake	Miraflores Lake	
Sun., Feb. 27	126.65	92.97	86.52	86.46	54.10
Mon., Feb. 28	125.85	92.19	86.53	86.49	54.15
Tues., Feb. 29	125.80	92.19	86.53	86.50	54.15
Wed., Mar. 1	125.60	92.04	86.58	86.50	54.15
Thurs., Mar. 2	125.40	91.84	86.58	86.51	54.21
Fri., Mar. 3	125.35	91.79	86.57	86.51	54.27
Sat., Mar. 4	126.20	92.60	86.50	86.47	54.34
Heights of low water to nearest foot...	125.0	91.0			

## Rainfall from February 1 to 29, 1916, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
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<i>Pacific Section—</i>	Inch.	Days.	Inch.
Bolboa	.78	17	1.46
Bolboa Heights	.74	18	1.48
Miraflores	.10	25	.59
Pedro Miguel	.16	17	.86
Rio Grande	.73	17	1.12

<i>Central Section—</i>	Inch.	Days.	Inch.
Culebra	.42	16	1.61
Camacho	.27	18	1.36
Empire	.40	17	1.40
Gambos	.66	17	1.52
Juan Mina	.45	18	2.56
Alhajuela	.28	25	1.34
Vigia	.36	15	1.33
Pajoles	.68	17	3.43
Trinidad	.44	17	2.81
Monte Lirio	.35	17 & 27	2.60

<i>Atlantic Section—</i>	Inch.	Days.	Inch.
Gatun	.41	10	2.13
Brazos Brook	.12	4	3.62
Colon	.36	16	1.96
Huacas del Tiro	.73	20	4.55

†Standard rain gauge—readings at 5 p. m. daily.  
Automatic rain gauge at unstarred stations—values, midnight to midnight.  
†Standard rain gauge—readings at 8 a. m. daily.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Zacapa	U. F. C. Mar.	1	Mar. 8
Albion	P. R. R. Mar.	2	Mar. 4
Calameres	U. F. C. Mar.	4	Mar. 12
Carrillo	U. F. C. Mar.	8	Mar. 15
Colon	P. R. R. Mar.	9	Mar. 15
Tendores	U. F. C. Mar.	11	Mar. 19
Santa Maria	U. F. C. Mar.	15	Mar. 22
Advance	P. R. R. Mar.	16	Mar. 23
Metapan	U. F. C. Mar.	18	Mar. 27
Albion	U. F. C. Mar.	22	Mar. 29
Panama	P. R. R. Mar.	23	Mar. 29

Pastores	U. F. C. Mar.	25	April 2
Zacapa	U. F. C. Mar.	29	April 5
Alliancia	P. R. R. Mar.	30	April 5
Calameres	U. F. C. Mar.	1	April 9

## CRISTOBAL-COLON TO NEW YORK.

Panama	P. R. R. Mar.	9	Mar. 15
Almirante	U. F. C. Mar.	9	Mar. 16
Pastores	U. F. C. Mar.	13	Mar. 20
Alliancia	P. R. R. Mar.	16	Mar. 23
Zacapa	U. F. C. Mar.	16	Mar. 23
Calameres	U. F. C. Mar.	20	Mar. 27
Colon	P. R. R. Mar.	23	Mar. 29
Carrillo	U. F. C. Mar.	23	Mar. 30
Tendores	U. F. C. Mar.	27	April 3
Advance	P. R. R. Mar.	30	April 6
Santa Maria	U. F. C. Mar.	30	April 6
Metapan	U. F. C. Mar.	3	April 11
Panama	P. R. R. Mar.	6	April 12

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba	U. F. C. Mar.	4	Mar. 11
Parismina	U. F. C. Mar.	8	Mar. 15
Abongares	U. F. C. Mar.	11	Mar. 18
Carrillo	U. F. C. Mar.	15	Mar. 20
Alenas	U. F. C. Mar.	18	Mar. 25
Herdia	U. F. C. Mar.	22	Mar. 27
Turrialba	U. F. C. Mar.	25	April 1
Parismina	U. F. C. Mar.	29	April 3
Abongares	U. F. C. Mar.	1	April 8
Carrillo	U. F. C. Mar.	5	April 10
Alenas	U. F. C. Mar.	8	April 15
Herdia	U. F. C. Mar.	12	April 17

## CRISTOBAL-COLON TO NEW ORLEANS.

Herdia	U. F. C. Mar.	12	Mar. 17
Turrialba	U. F. C. Mar.	12	Mar. 20
Parismina	U. F. C. Mar.	19	Mar. 24
Abongares	U. F. C. Mar.	19	Mar. 27
Carrillo	U. F. C. Mar.	26	Mar. 31
Alenas	U. F. C. Mar.	26	April 3
Herdia	U. F. C. Mar.	2	April 7
Turrialba	U. F. C. Mar.	2	April 10
Parismina	U. F. C. Mar.	9	April 14
Abongares	U. F. C. Mar.	9	April 17
Carrillo	U. F. C. Mar.	16	April 21
Alenas	U. F. C. Mar.	16	April 24



# CANAL



# RECORD

Volume IX.

BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, MARCH 15, 1916.

No. 30.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll. Bound volumes are for sale at \$2.50 each.

All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, 1916, on this basis; and subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50. Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### To Increase the Yards at Cristobal Terminals.

Filling was begun last week for the reclamation of part of the cove in front of the office buildings of the United Fruit Company and the Hamburg-American Line at Cristobal, for the purpose of furnishing a direct connection between the dock yards of the new piers at Cristobal and the main line of the Panama Railroad, and eliminating the present undesirable grade crossings in Cristobal.

A spur track has been extended from the railroad tracks in the rear of the passenger station at Colon, running along the water front back of the Cristobal fire station and ending at the mole. The fill will be extended into the water by fanning out from this track.

The reclamation will be of sufficient size to afford room for a yard of tracks, accommodating 154 cars. In connection with this work, the mole is to be widened to provide space for four tracks in addition to the six at present for a length of 1,200 feet, which will accommodate 220 cars.

The filling which is under way is part of an extensive project for increasing the capacity of the terminals and expediting the handling of business.

#### Large Naval Vessels Seeking Passage through Canal.

The collier *Mars*, the repair ship *Prometheus*, and the new fuel ship *Maumee* of the United States Navy entered the Canal at Balboa the early part of this week, for transit to the Atlantic. They are waiting at the upper end of Pedro Miguel Lock, and will probably pass through the Cut in the afternoon of Wednesday, March 15.

These are the largest ships which the operating forces have undertaken to handle through

the Canal since navigation was closed on account of the slides, in September. The *Prometheus* is 450 feet long by 60 feet beam, and is drawing about 22 feet of water. The *Maumee* is 455 feet in length by 56 feet beam, and the *Mars* is 385 feet in length by 53 feet beam. The *Mars* is on the way from Antofagasta to Hampton Roads with nitrates for the Government. The *Prometheus* is bound from San Francisco for New York and is towing the *Maumee*. The latter has not been equipped with engines, and is to have them installed at the New York navy yard.

The engines for the *Maumee* were assembled at the New York navy yard and it was deemed more expedient to bring the ship, which was built at the Mare Island navy yard, to New York than to transport the engines to San Francisco. The engines are of the Diesel type and when they are installed the *Maumee* will be the largest ship in the world driven by internal combustion engines. Diesel engines have been ordered for a larger vessel, a merchant ship, which was under construction at Hamburg when the European war broke out, but has not yet gone to sea.

#### Additional Tug for the Work in the Cut.

Supplementing the addition of new barges to the dredging fleet, an additional tug is due to arrive from the United States next week for service in the excavation work at the slides. This is the *Engineer*, transferred to the Canal from the work of the Engineer Department in New York harbor, at a valuation of \$40,000.

The *Engineer* is a vessel of 200 tons displacement, 101 feet long, 21 feet six inches in the beam, with a molded depth of 10 feet seven inches, built in Camden, N. J., in 1911. The compound engine, having cylinders of 16 and 32 inches in diameter, with a stroke of 24 inches, develops 490 horsepower, capable of driving the tug, when light, at a speed of 13 statute miles an hour. The single propeller has a diameter of seven feet six inches.

The *Engineer* sailed from New York for Norfolk, on the way to Cristobal, at 3 p. m., March 4, and is expected to arrive at Cristobal about Sunday, March 19. The anticipated itinerary included stops at Norfolk, Cape Fear, and Fernandina, in a voyage skirting the Atlantic coast of the United States; then to Nassau, in the Bahamas; Banes, Cuba; and Kingston, Jamaica, before the final lap to Cristobal. The route was made up for short runs because the tug is not provided with bunker space for coal for a long voyage.

The regular tugs now in service in the Cut, in addition to the reconstructed *DeLesseps* and the tenders *Chame* and *Sanidad*, which are handy for light work, are nine in number. They are the *Bahio*, *Gatun*, *Gorgona*, *Empire*, *La Boca*, *Mariner*, *Miraflores*, *Reliance*, and *Tavernilla*.

The walls of the new 3-story Pacific terminal office building have been completed and the roof is being laid.

### WORK ON PACIFIC TERMINALS.

#### Flooding of Dry Dock Entrance in April.—Coaling Plant and Pier Construction.

The construction work at the Pacific terminals, which includes the construction of the 1,000-foot dry dock, the coaling plant, and new wharves and piers, as well as the operation of the Sosa Hill quarry for the East Breakwater, has been pushed forward during the dry season as much as possible. Considerable delay has been experienced on account of the nondelivery of material ordered from the United States. In order to hasten the work the force has been greatly increased and in many instances, two and three shifts have been worked.

It is the intention to have the dry dock and the entrance basin in such shape that it will be possible to break the cofferdam and allow water to come against the dock gate about the first of April. In order to allow this, work is being advanced rapidly on the reinforced concrete pontoons on the floor of the dry dock, the installation of the greenheart on the dock gate, the placing of the flooding and sluice valves, and all other work below water level. Progress on the installation of the dry dock pumping plant has been very satisfactory and the condition of the valves and bulkheads, as well as the dock gate, will be such that work can be continued in the pump well and machinery rooms even after the flooding behind the cofferdam.

The work on the unloader and reloader wharves for the coaling plant at Balboa has been pushed, employing three shifts on nearly all items of the work. A great deal of difficulty has been experienced in placing the foundations of these wharves in the vicinity of and through the cofferdam, and it has been necessary to use care in blasting and excavating the rock in this vicinity. The pouring of concrete in the superstructure of the two wharves is going on, as well as excavation for the wharf anchorages. The unloader towers of the coal handling plant are already erected and during the past month the erection of the reloader towers and the transformer house has been under way.

The masonry work for the foundations for the extension of the entrance pier on the north side of the entrance basin, which was authorized early in the year, has been completed and the erection of the superstructure has been begun. Fender piles are being driven in place.

The work on wharves and piers consists of completing Docks 13 and 14 and Pier 18. The placing of anchors behind Docks 13 and 14, and the placing of fill has engaged a large force. Upon the receipt of the steel framework for the shed on Pier 18, all items of work have advanced, and it is estimated that on April 1 the south half of the pier, facing No. 1 slip, will be ready for use. The work has consisted of erection of the steel work, the building of the concrete walls of the shed and offices,

the installation of piping and conduits, painting the exposed steel work, placing the tie roofing, and placing anchors through the pier, preparatory to paving the middle portion of the pier floor.

The work around the shops has consisted principally of placing fill, grading off the yards, and the installing of the permanent roads and tracks.

Sosa Hill quarry, which has been operated for the past six months on account of the East Breakwater in Limon Bay, has produced 430,000 cubic yards of rock. Six shovels have worked on the two levels for eight hours per day until the last two months, when the number of shovels was reduced to four, which are worked on a split shift of 12 hours.

Approximately 3,000 men are employed on the several Pacific terminal features at present.

#### Pipeline Suction Dredge Excavating at Bases of Culebra Slides.

The pipeline suction dredge No. 83, which was transferred on March 3 from work at the new coaling station at Cristobal to the Cut, was taken to the repair wharf at Paraiso for ladder repairs after it had been used to excavate 500 cubic yards of material. The repairs were completed and the dredge returned to work on Thursday, March 9.

Unlike pipeline suction dredge No. 86, which has been used for months, past in re-handling spoil originally excavated by other dredges, No. 83 is being used for primary excavation at the bases of the slides. It excavates soft material and discharges it into barges, which are towed away and dumped in the same manner as the barges taking spoil from the hard-material dredges. Hydraulic graders are being used to sluice the soft material down into the channel, where the suction dredge can handle it.

#### Excavation from Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, March 13, amounted to 267,343 cubic yards. In addition an aggregate of 62,719 cubic yards was rehandled by the pipeline suction dredge No. 86, the seagoing suction dredge Culebra, and the Belgian ladder dredge No. 5.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	78,515
Gambao.....	15-yard dipper.....	63,496
Paraiso.....	15-yard dipper.....	75,885
Corozal.....	Ladder.....	37,970
Culebra.....	Seagoing suction.....	29,216
No. 86.....	Pipeline suction.....	28,480
No. 5.....	Belgian ladder.....	9,280
No. 83.....	Pipeline suction.....	7,220

The average aggregate output of the dredges during the 20 weeks preceding that ending at midnight of Monday, March 13, was 256,619 cubic yards, the total amount of primary excavation during that period (since October 19) having been 5,132,382 cubic yards. This has been an average of 36,659.8 cubic yards for each of the 140 days.

#### Advance Notice Must be Given to Secure Suspension of Electrical Charges.

In making charges for the use of electrical appliances, such as fans, percolators, irons, etc., in employees' quarters, the Electrical Division can not undertake to suspend charges during the absence of an employee on leave unless definite written notice is given to the Electrical Engineer in advance of the period of absence. The notice should specify the dates between which the appliance or appliances will not be used.

## FORCE AND QUARTERS.

### Summary of Labor Force and of Quarters Occupied on the Isthmus at End of February.

The total force employed on the Isthmus by The Panama Canal, the Panama Railroad Company, and contractors on February 23 amounted to 24,366. This is an increase of 448 over the 23,918 employed on January 26. It is an increase of 2,451 over the 21,915 employed on December 23, 1915, which was the least number that had been employed since 1906.

The number employed at the end of February this year exceeded by 921 the 23,445 employed at the end of February, 1915. It was 7,435 less than the 31,801 employed at the

end of February, 1914, and 13,933 less than the force at the end of February of 1913.

The increases in the force employed on February 23, 1916, over that employed on January 26 were principally 690 in the Division of Terminal Construction; 274 in the commissary branch of the Supply Department; 151 in the Electrical Division; and 60 in the Dredging Division. The principal decreases were 499 in the force of the Panama Railroad; 80 in the Mechanical Division; and 68 in the forces of contractors.

A summary of the force report for the half-month ending on February 23, and of the occupation of Panama Canal and Panama Railroad quarters on the Isthmus on February 29, is given herewith:

DEPARTMENT OR DIVISION.	SILVER EMPLOYES*													Total silver.	Total gold.	Grand total.	
	Artisans.						Laborers.										
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Euro- pean 16 cents.	13 cents.	10 cents.	7 cents.	5 cents.					
Operation and Main- tenance; locks & office	323	5	27	43	196	30	14	17	14	876	4	459	139	598			
Terminal Construc- tion Building	410	86	236	836	196	74	344	876	4	3,083	298	3,381					
Electrical	95	6	339	430	382	34	1	148	122	3	9	1,569	169	1,738			
Municipal Eng.	85	33	44	132	187	9	1	209	651	9	35	1,728	87	1,815			
Dredging	392	49	147	187	129	9	1	151	37	2	4	2,414	335	2,749			
Mechanical	1,873	13	50	197	88	10	59	164	8	7	1,546	780	2,326				
Marine	142	8	77	128	594	643	1	46	39	1	2	142	36	178			
Fortifications	49	25	41	73	8	1	1	46	39	1	2	284	60	344			
General Constructi- on	5	2	1	1	2	1	1	8	54	1	1	72	2	74			
Total.....	3,426	16	629	1,103	2,444	1,287	39	94	979	1,965	25	78	12,085	2,075	14,160		
Supply; main office.														13	13		
Commissary	1,013	8	5	20	14	902	1	4	13	1	2,023	180	2,203				
Subsistence	489	2	3	2	2	2	10	137	593	4	1	496	20	516			
Quartermaster	764	34	61	66	64	2	1	21	337	593	4	1,735	70	1,805			
Accounting	23	3	4	10	8	21	335	9	19	810	181	991					
Health	401	1	3	4	10	8	21	335	9	19	810	181	991				
Executive	120	1	3	4	10	8	21	335	9	19	810	181	991				
Panama Railroad	351	122	34	148	268	542	977	42	444	509	4	12	3,453	330	3,783		
Contractors	26	1	4	20	6	6	22	18	2	105	38	143					
Grand total.....	6,613	174	742	1,349	2,812	1,845	1,928	147	1,609	3,466	51	116	20,852	3,514	24,366		
Month previous.....	6,554	141	730	1,391	2,671	2,095	1,315	185	1,470	3,560	58	105	20,275	3,643	23,918		
Changes.....	+59	+33	+12	-42	+141	-295	+613	-38	+139	-94	-7	+11	+577	-129	+448		

\*The wages are stated in United States currency.

### QUARTERS.

PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa	934	331	307	130	10	22	1,639	486	679
Ancon	960	439	361	8			259	16	3
Corozal	23	7	6				25	6	12
Pedro Miguel	242	122	142	8			385	122	162
Paraiso	316	79	89	40	5	15	541	116	159
Culebra	7	23	15	1	1	2	407	254	313
Gambao	40	5	10				153	31	39
Gatun	216	175	225	27	2	3	566	423	714
Cristobal	938	347	408	77	6	3	1,767	208	415
Total	3,692	1,520	1,560	291	24	50	5,733	1,662	2,486

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 13 Asiatics. (3) Includes 15 American negroes, 74 Colombians and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores and Red Tank. (5) Includes Empire, Las Cascadas, and Bas Obispo. (6) Includes 11 Panamanians. (7) Includes Colon Beach and Colon Hospital. (8) Includes 35 East Indians, 18 colored American citizens, and 111 Panamanians.

### Deceased Employees.

Name.	Check No.	Native of	Isthmus residence.	Employed by	Date of death.
Alex. Rochester Chance	59412	Grenada	Panama	Building Div.	March 2, 1916.
Daniel Clarke	86033	Jamaica	Colon	R. & F. A. P. R. R.	Feb. 27, 1916.
Alfred Jones	36136	U. S. A.	Panama	Pacific terminals.	Feb. 25, 1915.
Patrick Skahill	2744	U. S. A.	Cristobal	Mechanical Div.	March 5, 1916.
Thomas Whiteside	75400	Jamaica	Panama	Health Dept.	March 2, 1916.

The estates of the above-named deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due the estates, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## THE TUG "DE LESSEPS."

Old French Tug Converted Into Modern Small Towboat for Work among the Dredges.

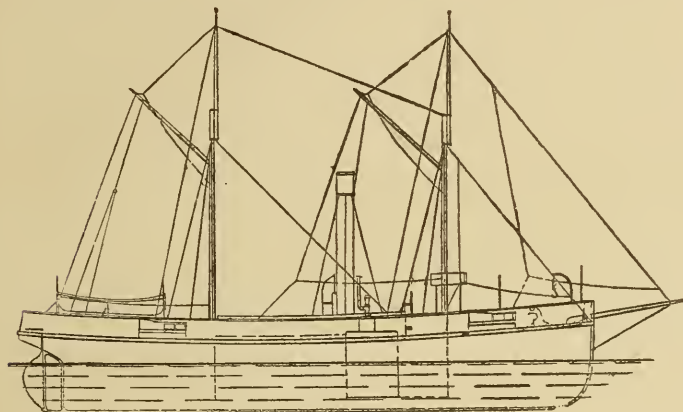
On March 10 the towboat *DeLesseps* was placed in commission after a thorough overhauling and reconstruction, which resulted in converting it from a tender and supply boat into a modern towboat. The *DeLesseps* will henceforth be used as an "inside towboat" for handling dump barges, fuel lighters, and dredges in Gaillard Cut, where a boat of small dimensions can be worked to great advantage, owing to the restricted area of operations.

The work of overhauling and reconstruction was completed in only 23 working days. The

from equipment on which it was no longer required.

The *DeLesseps* is of the following dimensions: Length over all, 72 feet; molded beam, 15 feet; molded depth, nine feet. The boat is equipped with a compound condensing engine, having a 12-inch high pressure cylinder, and low pressure cylinder of 22 inches in diameter, with an 18-inch stroke.

The *De Lesseps* is one of the largest pieces of floating equipment of its class used by the French companies. It was built for the first French company by Lobnitz & Company in Renfrew, Scotland, in 1883, and made the voyage across the Atlantic



THE "DELESSEPS" AS SHE CAME FROM RENFREW UNDER SAIL, IN 1883.

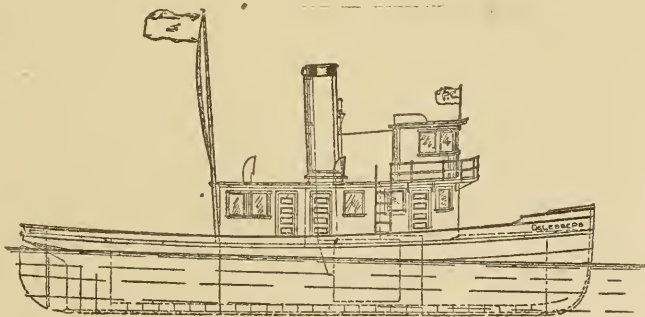
*DeLesseps* was brought alongside the dock at Paraiso shops, where she was lifted out of the water and placed on the stocks by the floating crane *Hercules*. Her hull was carefully gone over. The fenders and the necessary hull plates, and also the frames throughout the boiler room were renewed. The old French boiler was removed and replaced by a boiler formerly used on the rock and sand barges. A fuel oil burning system was installed for the boiler, with the necessary fuel oil and water tanks.

A new wood deck was laid, together with solid wooden bulwarks, and a deckhouse and wheelhouse of the modern standard towboat type were erected. A dynamo and lighting system, steam steering gear, and a towing machine were installed.

The boat being out of commission for the short period of 23 working days is due to the wood work having been rushed in the Paraiso shops, while the steel and engine work were advancing in the yards. The wheelhouse was erected and finished in the shops complete and then placed on board the boat.

The change in boilers has resulted in raising the steam pressure from 75 to 120 pounds, thereby allowing the engines to swing a larger propeller, and increasing the power of the boat as well as the towing efficiency. The installation of the up-to-date oil burning system will increase the amount of steam generated, thereby increasing the general efficiency of the power plant. All the machinery necessary for the auxiliaries has been transferred

under sail, using the engine as an auxiliary, the boat being unable to carry sufficient coal on board for the entire voyage. The accompanying sketches show the boat as she left the builders' yard to start on her voyage, and as she is now reconstructed. Following



THE "DELESSEPS" AS SHE WAS PLACED IN COMMISSION ON MARCH 10, 1916.

the failure of the second French company the boat was laid up in the French canal above the dry dock at Cristobal. It was reclaimed and overhauled and placed in service by the Atlantic Division in 1909, and was transferred to the Cut in 1914. Of the original boat, the hull and the engine are about all that remain.

## Applications for Family Quarters.

Applications for married quarters were on file on February 29, 1916, as follows:

STATIONS.	Number of appli. ations.
Ancon .....	399 (84)
Ancon Hospital.....	4
Paraiso .....	159 (24)
Gatun .....	124 (4)
Cristobal .....	161 (3)
Total .....	847 (159)

NOTE.—The figures in parentheses show the number of applicants already occupying regular or nonhouse-keeping family quarters at stations other than those at which applications are filed.

## Oil Barge Built at Paraiso Shops.

A new steel barge to carry oil for supplying the floating equipment of the Dredging Division is being finished at the shops at Paraiso and will probably be launched on Thursday of this week. The barge is 72 feet long by 24 feet wide by eight feet deep, and will have a carrying capacity of approximately 2,400 barrels of oil. It has been built at the south end of the shops, on cribbing over a railroad track, high enough to clear flat cars. Cars will be run under the barge, which will be lowered onto them. The cars will be hauled to the repair wharf, where the floating crane *Hercules* will lift the barge and deposit it in the water.

This is one of the largest pieces of new construction which the Dredging Division has done in its work of maintaining floating equipment, but much larger hulls have been taken to pieces, transported, and reassembled. It was more expedient to build the barge than to order it from the United States, in the present congested condition of constructing shipyards.

## Worn Out Clapet and Barges Scrapped.

Clapet No. 6, worn out in service, is being scrapped on the tidal flat in the rear of the Panama Railroad and steamship offices at the land end of the old steel pier at Balboa. Following the removal of the machinery, fire was started aboard the hulk to burn off the woodwork, last week, and the hull is now being taken apart by cutting the rivets.

Barges No. 61 and No. 81, formerly employed as lighters in the terminal service of the Panama Railroad, had previously been scrapped at the same place, the work on them being practically completed by this time. Lighter No. 78, removed from service at the same time as No. 61 and No. 81, was ordered to the obsolete store for sale.



## OFFICIAL CIRCULARS.

## Acting Director of Posts, and Acting Shipping Commissioner and Administrator of Estates.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., March 9, 1916.  
To all concerned—Effective this date Mr. C. H. Calhoun is designated Acting Director of Posts.

Mr. J. E. McGrath is designated Acting Shipping Commissioner and Acting Administrator of Estates, and will supervise the customs inspection force.

The vacancy in the office of Chief of Division of Civil Affairs resulting from Mr. Baxter's resignation will not immediately be filled.

C. A. McCLAVINE,  
Executive Secretary.

Approved:  
CHESTER HARDING,  
Acting Governor.

## In Charge of Section of Surveys.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., March 9, 1916.  
To all concerned—Effective March 13, 1916, and until the return of Assistant Engineer O. E. Malsbury from leave, Junior Engineer F. R. Fitch will be in immediate charge of the Section of Surveys.

JAY J. MORROW,  
Assistant to the Engineer of Maintenance.

## Turning Seats in Passenger Coaches.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT.

BALBOA HEIGHTS, C. Z., March 10, 1916.  
Notice to the traveling public—The Panama Railroad Company is receiving complaints from the traveling public regarding damage to wearing apparel while traveling on our passenger trains. The reason for such complaints is due to the fact that the traveling public has been in the habit of turning over seats in first-class coaches and using the forward seat as a foot rest, with the result that when the seats are occupied by other passengers their clothing becomes soiled from dirt which had accumulated on the seats. Our conductors and collectors have been instructed to enforce the rule regarding turning of seats in our coaches and hereafter this practice can not be allowed.

C. H. MOTSETT,  
Superintendent.

## Surplus Push Cars.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT.

BALBOA HEIGHTS, C. Z., March 6, 1916.

## HEADS OF DEPARTMENTS AND DIVISIONS:

The General Storekeeper advises that his stock of push cars is getting low, and it is requested that any departments or divisions having surplus cars turn them in for reissue, or in case you have on hand surplus push cars in bad order it is requested that same be turned in to the Mechanical Division to be repaired and returned to stock for reissue.

WM. R. GROVE,  
Chief Quartermaster.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., March 13, 1916.  
To accountable officials—Effective March 13, 1916, and during such time as Mr. John M. King may be absent on leave, Mr. C. C. Singleton will assume accountability for nonexpendable property now in the custody of Mr. King, and is authorized to sign all property papers for and in the name of Mr. King.

H. A. A. SMITH,  
Auditor, The Panama Canal.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, March 22, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be used on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants,

at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, March 24, 1916, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board,  
GEO. J. VANDERSLUICE,  
Recorder, Board of Local Inspectors.

## Additions to the Panama Canal Library.

The following is bulletin No. 8 of recent additions to the Canal library at Balboa Heights:

GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS,  
ETC.

Carnegie Steel Company, Pocket companion.  
State of Connecticut, Scheme of state examinations, Connecticut school document No. 1, 1916.

Lincoln Hutchinson, Panama Canal and international trade competition, 1915.

State of Illinois, First annual report of the State Public Utilities Commission of the State of Illinois for the year ending November 30, 1914. Volume 1, orders and decisions; Volume 2, transportation statistics, 1915.  
Montclair, New Jersey, Report of Board of Education, Montclair, N. J., for the fiscal year ending June 30, 1915.

Thomas Publishing Company, Thomas' register of American manufacturers; seventh edition, October, 1915.

Bureau of Education, Placement of children in the elementary grades. A study of the schools of Richmond, Va. Bulletin, 1916, No. 3, of the Bureau of Education. By K. J. Hoke, 1916.

Bureau of Education, Kindergarten training schools. Bureau of Education Bulletin, 1916, No. 5.

Bureau of Labor, Retail prices, 1907 to June, 1915. Bulletin 184 of the Bureau of Labor Statistics, 1916.

Bureau of Standards, Earth resistance and its relation to electrolysis of underground structures. Technologic paper No. 26 of the Bureau of Standards. By Burton McCollum and K. H. Logan, 1915.

Bureau of Standards, Electrolysis and its mitigation. Technologic paper No. 52. By E. B. Rosa and Burton McCollum, 1915.

Treasury Department, Annual report of the Secretary of the Treasury on the state of the finances for the fiscal year ended June 30, 1915, with appendices, 1916. MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.

Boget & Hopper, Catalogue of turned wood boxes.  
Carnegie Steel Company, Carnegie-Schoen steel wheels, 8th edition; axles and forgings, 6th edition; standard specifications, 5th edition; gear blanks and miscellaneous circular sections, 2nd edition; steel sheet piling, 10th edition; bulb sections, 2nd edition.

Chicago Railway Signal and Supply Company, Catalogue and price list of railroad supplies, 1914.

Consolidated Expanded Metal Companies, Handbook and catalogue of Steelcrete expanded metal.

J. H. Curtiss Company, Inc., Catalogue of marine plumbing supplies.

Duplicator Manufacturing Company, Catalogue of commercial duplicators.

Firestone Tire and Rubber Company, Export price lists, No. 6.

General Electric Company, Bulletin No. 43800, incandescent headlamps for street railway service.

W. S. Hall Company, Catalogue of marine steering controls.

Hart Manufacturing Company, Catalogue E of Diamond H switches.

Hartford Machine Screw Company, Current price lists used by the screw manufacturers of the United States, and catalogue of specialties.

Hill-Standard Manufacturing Company, Catalogue of Fan-Fall playground equipment.

Hudson Motor Car Company, Catalogue of Hudson motor cars; reference book, Hudson Super-Six, 1st edition; Hudson Super-Six, booklet; Hudson Super-Six, six little cylinders, booklet.

Mathis Yacht Building Company, Catalogue and description of trip from New York to Florida by houseboat.

W. N. Matthews & Bro. Inc., Catalogue and handbook No. 9 of telegraph and telephone specialties, with price lists.

Chas. F. McClellan, Catalogue of motor boat coverings.  
L. R. Reich, Catalogue of druggists' sundries and notions.  
S-R Manufacturing Company, Inc., Catalogue of Mohawk marine motors.

Standard Motor Construction Company, Instructions for the care and operation of heavy-duty Standard engines; magneto instructions for Standard spark generators; price list of repair parts for 16-horsepower 2-cylinder engines.  
Weber & Don, Catalogue, 1916, of plants, seeds, garden tools, etc.

## American National Red Cross.

The following is a financial statement for the Canal Zone chapter of the American National Red Cross for the period from November 12, 1915, to January 31, 1916:

## RECEIPTS.

Received from former treasurer, November 12, 1915.....	\$5,187.03
Tivoli ball.....	1,750.32
Memberships other than Tivoli tickets.....	8.00
Contributions for war sufferers:	
St. Luke's Church, Ancon.....	20.50
Christian Science Church, Ancon.....	17.55
Union Church, Cristobal.....	22.81
Union Church, Gatun.....	3.75
Union Church, Pedro Miguel.....	5.00
Seawall Church.....	.95
A. S. Grossberg, Louis Cantor, and M. Barab, \$5 each for relief of Jews.....	15.00
Total.....	\$7,030.91

## DISBURSEMENTS.

Expenses, Tivoli ball.....	\$372.84
Membership fees remitted.....	192.00
Individuals assisted.....	274.81
Tuberculosis society.....	.97
Dr. Hearne, for emergency cases.....	25.00
United Fruit Company, for transportation to New Orleans.....	40.00
United Fruit Company, for transportation to New Orleans.....	6.00
United Fruit Company, for transportation to Bocas del Toro.....	4.00
Printing.....	6.81
Appropriated for war sufferers.....	500.00
Collections for war sufferers remitted.....	85.56
Ladies' guild, Ancon, reimbursement for expenses Tivoli ball.....	294.50
Postage and revenue stamps.....	5.70
Balance on hand.....	5,222.72
Total.....	\$7,030.91

J. H. McLEAN,

Approved:  
CHAS. F. MASON,  
Chairman.

## Late Train for Las Cascadas on March 17.

On Friday, March 17, train No. 42 on the Las Cascadas branch of the Panama Railroad, which ordinarily leaves Panama at 10.40 p. m., will be held two hours, leaving Panama at 12.40 a. m., as train No. 52, to accommodate persons attending a charity ball to be given at the Tivoli Hotel by the united Irish societies.

## Civil Service Examination.

Attention is invited to the fact that for persons employed by The Panama Canal or Panama Railroad, the maximum age limit for stenographer and typewriter, Panama Canal Service, for the examination to be held on the Isthmus in April, 1916, has been raised from 45 to 50 years.

## Bachelors May Deposit Coupon Books to Cover Laundry Charges.

In order to facilitate the delivery of laundry to bachelors and relieve them from the annoyances in connection with it to which they have heretofore been subjected, it has been decided to grant them the privilege of depositing commissary coupons with commissary managers or laundry superintendents to cover laundry charges.

Coupon books so deposited will be receipted

for on form A-128 and will be kept by superintendents, managers, or cashiers in ruled envelopes, on the outside of which will be posted debits and credits when laundry is delivered or coupons are deposited. When finished laundry consigned to a depositor is received at a commissary or is ready in a laundry, delivery will be made without further trouble to the depositor.

Coupon books so deposited will be used to pay laundry charges only, and no other supplies may be purchased to be charged against them.

#### Empty Bottles May Be Given to Commissary Wagon Drivers.

The commissary branch of the Supply Department will issue refund notes, at the rate

of one cent each, for empty Panama Canal soda water bottles, salad oil bottles, bay rum bottles, and bottles similar in shape to those in which these commodities are sold in commissaries, provided they have no foreign name blown in them.

Empty bottles may be turned over to the commissary wagon drivers, who will issue receipts therefor, which will be covered later by refund notes. Bottles will be removed from bachelor quarters on request if arrangements have been made for the janitor to turn them over to a wagon driver.

Empty milk bottles and ice cream containers which have been washed in accordance with existing sanitary regulations will also be accepted by commissary wagon drivers and receipted for as above.

#### BOOT AND SHOE PRICE LIST.

Of Commissary Branch of Supply Department.  
Effective March 15, 1916.

There is published below the retail boot and shoe price list, No. 2, effective March 15, 1916, governing the prices of articles sold in the leather goods departments of the commissary stores on the Isthmus, operated by the commissary branch of the Supply Department of The Panama Canal.

The prices given are those at which the items will be sold to Canal and Panama Railroad employees and other residents of the Isthmus who have commissary privileges.

These prices will be increased by 10 per cent in cases of sales to commercial vessels and ships of foreign navies, and by 20 per cent in cases of sales to yachts:

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
<i>Sandals.</i>				<i>Shoes, Girls'—Continued.</i>			
23161	Child's Barefoot....	Pair	\$1.50	23268	Tan vici, button.....	Pair	\$2.20
23171	Child's Barefoot.....	Pair	1.20	23273	White canvas pumps.....	Pair	1.80
23172	Misses' Barefoot.....	Pair	1.65	23282	Tan vici Blucher Oxford.....	Pair	2.20
<i>Shoes, Boys' and Youths'.</i>				23283	Black vici Blucher Oxford.....	Pair	2.10
23242	Glazed calf Blucher, Oxford.....	Pair	3.10	23291	Tan play, Oxford.....	Pair	1.60
23243	Glazed calf Blucher.....	Pair	3.10	<i>Shoes, Men's.</i>			
23252	Tennis, rubber sole.....	Pair	1.10	24112	High tan Blucher.....	Pair	4.65
23253	Tennis, rubber sole.....	Pair	1.05	24114	Tan calf Blucher, Army.....	Pair	3.90
23258	Boy Scout.....	Pair	2.60	24128	White canvas Blucher Oxford.....	Pair	2.30
23259	Youth's Scout.....	Pair	2.40	24134	White canvas Blucher.....	Pair	2.35
23261	Tennis Oxford.....	Pair	1.40	24144	Black kid Bals.....	Pair	4.25
23266	Chocolate tan Blucher.....	Pair	2.70	24164	Tan chrome calf.....	Pair	4.00
23276	Gun metal Blucher Oxford.....	Pair	2.20	24189	White Tennis Oxford, rubber sole.....	Pair	1.25
23277	Tan Blucher Oxford.....	Pair	2.20	24214	Gun metal Blucher Oxford.....	Pair	4.00
23278	Gun metal Blucher Oxford.....	Pair	2.40	24228	Russia Blucher Oxford.....	Pair	4.55
23279	Tan calf Blucher Oxford.....	Pair	2.40	24241	Tan willow calf.....	Pair	4.70
23286	Tan Oxford.....	Pair	2.70	24244	Glazed kid Oxford.....	Pair	5.20
23292	Dull calf Oxford.....	Pair	2.65	24251	Box calf Blucher, Army.....	Pair	3.60
23293	Dull calf Blucher.....	Pair	2.70	24271	Gun metal Oxford.....	Pair	3.70
23294	Tan grain Blucher.....	Pair	2.70	24273	Black vici Blucher.....	Pair	4.00
23295	Tan grain Blucher Oxford.....	Pair	2.65	24279	Black gun metal Blucher Oxford.....	Pair	4.55
23296	Dull calf Blucher.....	Pair	2.40	24286	Gun metal Blucher.....	Pair	5.55
23297	Tan calf Blucher.....	Pair	2.40	24287	White buck Blucher Oxford.....	Pair	4.95
23298	Tennis Bals.....	Pair	1.25	24288	Tan ventilated Blucher.....	Pair	3.15
<i>Shoes, Children's.</i>				24291	Tan vici Blucher Oxford.....	Pair	5.65
23217	Pumps, pat., ankle strap.....	Pair	1.90	24311	Tennis, white canvas, bal.....	Pair	1.40
23222	Pumps, pat., ankle strap.....	Pair	1.60	24312	Gun metal Blucher Oxford.....	Pair	4.15
23225	Pumps, pat., ankle strap.....	Pair	1.10	24313	Vici Blucher Oxford.....	Pair	4.30
23241	Button.....	Pair	1.10	24314	Tan Russia Oxford.....	Pair	4.15
23245	Dongola Blucher.....	Pair	2.00	24315	White canvas Blucher Oxford.....	Pair	4.65
23246	Dongola Blucher.....	Pair	2.35	24316	Glazed kid Blucher.....	Pair	5.35
23262	White buck, button.....	Pair	1.30	24323	Tan Russia Blucher.....	Pair	4.30
23263	White, Nubuck, button.....	Pair	2.05	24324	Gun metal Blucher.....	Pair	4.30
23269	White canvas pumps.....	Pair	.90	24327	Tan Russia Blucher Oxford.....	Pair	4.00
23271	White canvas pumps.....	Pair	1.20	24329	Gun metal Oxford.....	Pair	3.70
23272	White canvas pumps.....	Pair	1.45	24331	Tan Russia Oxford, rubber sole.....	Pair	4.00
23274	Black kid, button.....	Pair	1.20	24335	Tan Blucher Oxford.....	Pair	5.25
23275	Tan kid, button.....	Pair	1.20	24336	Tan Blucher.....	Pair	6.16
23281	Tan vici, Blucher, Oxford.....	Pair	1.80	24337	Tan Blucher Oxford.....	Pair	5.80
23287	Black vici, Blucher, Oxford.....	Pair	1.80	24339	Tan calf Blucher, Army.....	Pair	3.90
23288	Tan play, Oxford.....	Pair	1.20	24341	White buck Blucher Oxford.....	Pair	5.25
23289	Tan play, Oxford.....	Pair	1.45	24345	Russia Blucher Oxford.....	Pair	3.95
<i>Shoes, Girls'.</i>				24348	Moulder's.....	Pair	1.65
22245	Black vici, Blucher, Oxford.....	Pair	2.50	24349	White canvas Oxford, red rubber sole.....	Pair	1.50
23215	Pumps, patent, ankle strap.....	Pair	2.20	24351	Chocolate tan Blucher.....	Pair	3.15
23247	Dongola Blucher.....	Pair	2.65	24353	Russia Blucher.....	Pair	3.30
23264	White Nubuck, button.....	Pair	2.35	24354	Black Blucher.....	Pair	3.30
23267	Gun metal, button.....	Pair	2.20	24355	Black Blucher.....	Pair	3.40
				24356	Russia Blucher.....	Pair	2.35
				24357	Pumps, gun metal, Tango.....	Pair	4.10
				24358	Black vici Blucher Oxford.....	Pair	5.15
				24359	Blucher Oxford.....	Pair	5.35

S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
<i>Shoes, Men's—Continued.</i>				<i>Boxes.</i>			
24361	Tan vici Oxford.....	Pair	\$3.85	9487	Boxes, collar, leather.....	Each	\$1.35
24362	Chocolate vici Blucher.....	Pair	3.15	<i>Brushes.</i>			
24363	Gun metal lace Oxford.....	Pair	4.10	21158 Brushes and daubers, Shinola.....			
24364	Russia calf, lace, Oxford.....	Pair	4.10	21215 Brushes, shoe.....			
24365	Gun metal, lace, Oxford.....	Pair	5.45	21216 Daubers, metal top.....			
24366	Russia, lace, Oxford.....	Pair	5.55	<i>Buckles.</i>			
24367	Engineers'.....	Pair	6.20	21219 Buckles for women's shoes, patent and dull leather.....			
<i>Shoes, Women's.</i>				<i>Buttons, Shoe.</i>			
22175	Vici kid Blucher Oxford.....	Pair	3.45	21166 Buttons, shoe, black or tan.....			
22186	Ties, white canvas.....	Pair	2.00	21172 Buttons, shoe, white.....			
22198	Vici Blucher Oxford.....	Pair	2.85	<i>Calks.</i>			
22199	Vici Blucher.....	Pair	3.05	21186 Calks, wing, screw.....			
22211	Tan Russia Oxford.....	Pair	3.25	<i>Cases, Brush.</i>			
22215	Tan Russia Blucher.....	Pair	3.35	9479 Cases, brush, fitted.....			
22216	Vici Blucher Oxford.....	Pair	3.10	<i>Cases, Cigarette.</i>			
22219	Pumps, satin, black.....	Pair	2.90	11235 Cases, Cigarette, Morocco, telescope.....			
22225	Pumps, dull calf.....	Pair	3.45	21214 Cases, Cigarette, gun metal.....			
22228	Pumps, patent colt.....	Pair	3.45	<i>Cases, Dressing.</i>			
22229	Tan Russia Blucher, rubber sole.....	Pair	3.75	9485 Cases, dressing, leather.....			
22231	Blucher Oxford.....	Pair	3.75	21189 Cases, dressing, men's.....			
22232	White Nubuck Blucher Oxford, rubber sole.....	Pair	4.00	<i>Cases, Letter.</i>			
22234	White canvas Blucher Oxford, rubber sole.....	Pair	3.45	11227 Cases, letter, pigskin.....			
22236	Pumps, opera satin, black and white.....	Pair	2.60	11228 Cases, letter, Morocco.....			
22237	Pumps, gun metal, Col. welt.....	Pair	3.75	<i>Cases, Suit.</i>			
22238	Pumps, patent colt, Col.....	Pair	3.75	5895 Cases, suit, leather, 24".....			
22242	Pumps, white Nubuck opera.....	Pair	2.90	8939 Cases, suit, leather, 24".....			
22243	White Nubuck Blucher Oxford.....	Pair	3.75	9477 Cases, suit, nut hide, 24".....			
22244	Patent pumps.....	Pair	2.40	9642 Cases, suit, fiber, 24".....			
22247	Dull calf pumps, Col.....	Pair	3.75	9652 Cases, suit, leather, 24".....			
22248	Patent colt pumps, Col.....	Pair	3.75	9657 Cases, suit, hide, 24".....			
22249	Patent pumps.....	Pair	2.65	<i>Heels, Rubber.</i>			
22251	Gun metal pumps.....	Pair	2.65	21142 Heels, rubber, men's, black.....			
22252	White canvas pumps.....	Pair	2.15	21191 Heels, rubber, men's, tan.....			
22253	Gun metal Blucher Oxford.....	Pair	2.65	21192 Heels, rubber, women's, black, Cuban.....			
22254	White Nubuck pumps.....	Pair	3.75	21193 Heels, rubber, women's, tan, Cuban.....			
22255	Pumps, 2-inch heel.....	Pair	3.45	<i>Hooks.</i>			
22256	Pumps, Dongola Saxon.....	Pair	3.80	11796 Hooks, button.....			
22257	Pumps, white canvas, Saxon.....	Pair	3.30	<i>Labels, Leather.</i>			
22258	Pumps, dancing, white satin.....	Pair	3.80	9484 Labels, luggage.....			
22259	Pumps, dancing, black satin.....	Pair	3.80	<i>Laces, Shoe.</i>			
22261	White canvas, Blucher, Oxford.....	Pair	3.15	21112 Laces, mercerized, black, tan, and white.....			
22262	Pumps, white canvas.....	Pair	2.25	21117 Laces, tubular, white.....			
22263	Pumps, white canvas.....	Pair	2.00	21144 Laces, Nufashund, black or tan.....			
22264	Dull calf, button.....	Pair	2.70	21156 Laces, silk, Nufashund, black, tan, and white, 30".....			
22265	Tan vici, Blucher, Oxford.....	Pair	3.80	21168 Laces, silk, 30", black, tan, and white.....			
22266	Tan kid, Oxford.....	Pair	3.65	21198 Laces for low shoes, black, 27".....			
22267	White canvas, Oxford.....	Pair	3.35	<i>Slippers.</i>			
<i>Shoe Findings and Leather Goods.</i>				24165 Alpargatos.....			
<i>Bags.</i>				22221 Women's black kid Oxford.....			
9644	Bags, hand, walrus, 18".....	Each	9.65	22246 Women's bath.....			
9654	Bags, kit, hide, 18".....	Each	15.75	24259 Men's kid (in case).....			
9822	Bags, hand, walrus, 16".....	Each	7.25	24281 Men's black vici.....			
11438	Bags, hand, walrus, 18".....	Each	6.95	24282 Men's tan vici.....			
11439	Bags, hand, cowhide, 18".....	Each	10.70	24352 Men's bath.....			
11441	Bags, hand, cowhide, 16".....	Each	6.50	<i>Shoe Findings and Leather Goods.</i>			
11442	Bags, hand, cowhide, 18".....	Each	10.00	<i>Bags.</i>			
21187	Bags, women's, fitted, 16".....	Each	15.00	9644 Bags, hand, walrus, 18".....			
21188	Bags, women's, unfitted, 16".....	Each	5.75	9654 Bags, kit, hide, 18".....			



S. N.	Article.	Unit.	Price.	S. N.	Article.	Unit.	Price.
<i>Laces, Shoes—Continued.</i>				<i>Polishes—Continued.</i>			
21199	Laces for low shoes, tan, 27".....	Pair	\$0.02	21147	Sterling dressing, black or tan.....	Bot.	\$0.12
21211	Laces for low shoes, white, 27".....	Pair	.02	21154	Dressing, white canvas.....	Bot.	.06
21212	Laces for high shoes, black, 40".....	Pair	.03	21164	Polish, 2 in 1, black or tan.....	Tin	.06
21213	Laces for high shoes, tan, 40".....	Pair	.03	21194	Polish, liquid, black.....	Bot.	.07
<i>Leggins.</i>				21195	Polish, liquid, tan.....	Bot.	.07
5791	Leggins, khaki, canvas.....	Pair	.71	23265	Polish, white, Albo.....	Tin	.06
8811	Leggins, leather, motor.....	Pair	4.05	21217	Powder for white shoes.....	Bag	.05
9366	Puttees, dark olive drab.....	Pair	1.00	<i>Purses.</i>			
21218	Leggins, Boy Scout.....	Pair	.50	2272	Purses, pigskin.....	Each	.22
<i>Lifts, Shoe.</i>				8452	Purses, velvet, calf.....	Each	.39
21118	Lifts, cow horn.....	Each	.13	8453	Purses, velvet, calf.....	Each	.46
<i>Mirrors.</i>				9483	Purses, leather.....	Each	.30
9478	Mirrors, traveling.....	Each	2.00	<i>Soles, Leather.</i>			
9577	Mirrors, traveling.....	Each	1.25	21173	Half soles, Hemlock.....	Pair	.25
<i>Polishes.</i>				<i>Straps.</i>			
21121	Polish, Blanco.....	Tin	.07	11178	Straps, rug.....	Each	.45
21124	Viscol shoe and leather dressing.....	Tin	.19	<i>Trees, Shoe.</i>			
				21143	Trees, shoe, men's and women's.....	Pair	.86

## SHIPPING INFORMATION.

## Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions for the period until May 1 are given in this table:

MARCH.

DATE.	Time and height of high and low water.			
Wed., March 15.....	0:31 11.3	6:54 4.3	13:19 11.6	19:25 4.5
Thurs., March 16.....	1:30 12.0	7:48 3.5	14:04 12.4	20:15 3.5
Fri., March 17.....	2:14 12.8	8:34 2.6	14:42 13.4	20:57 2.4
Sat., March 18.....	2:55 13.6	9:13 1.7	15:17 14.3	21:36 1.3
Sun., March 19.....	3:33 14.4	9:49 1.6	15:52 15.0	22:12 0.5
Mon., March 20.....	4:11 14.9	10:25 0.5	16:26 15.6	22:48 -0.1
Tues., March 21.....	4:49 15.2	11:00 0.2	17:03 16.3	23:24 -0.3
Wed., March 22.....	5:28 15.4	11:37 0.2	17:41 16.0	.....
Thurs., March 23.....	0:03 -0.2	6:07 15.2	12:16 16.6	18:21 15.8
Fri., March 24.....	0:44 0.3	6:51 14.8	13:00 1.2	19:04 15.2
Sat., March 25.....	1:32 1.0	7:37 14.2	13:51 2.1	19:53 14.4
Sun., March 26.....	2:28 1.8	8:32 13.4	14:52 3.0	20:52 13.5
Mon., March 27.....	3:35 2.6	9:40 12.8	16:04 3.5	22:07 12.9
Tues., March 28.....	4:47 2.9	11:01 12.7	17:21 3.2	23:32 12.8
Wed., March 29.....	5:59 2.7	12:19 13.3	18:32 3.0	.....
Thurs., March 30.....	0:48 13.2	7:05 12.1	13:22 14.1	19:37 2.0
Fri., March 31.....	1:49 14.0	8:03 1.2	14:15 15.0	20:31 1.0

APRIL.

DATE.	Time and height of high and low water.			
Sat., April 1.....	2:40 14.7	8:52 0.5	15:01 15.7	21:18 0.1

DATE.	Time and height of high and low water.			
Sun., April 2.....	3:26 15.2	9:36 0.0	15:43 16.1	22:00 -0.4
Mon., April 3.....	4:09 15.5	10:17 -0.1	16:24 16.2	22:39 -0.6
Tues., April 4.....	4:50 15.4	10:36 0.1	17:03 15.9	23:16 -0.3
Wed., April 5.....	5:29 15.1	11:33 0.6	17:42 15.4	23:53 0.3
Thurs., April 6.....	6:07 14.5	12:10 1.4	18:18 14.7	.....
Fri., April 7.....	0:30 1.1	6:39 13.8	12:50 2.4	18:55 13.9
Sat., April 8.....	1:11 2.1	7:22 12.9	13:32 3.5	19:33 12.9
Sun., April 9.....	1:57 3.2	8:04 12.1	14:22 4.4	20:17 12.0
Mon., April 10.....	2:51 4.0	8:55 11.3	15:24 5.2	21:12 11.3
Tues., April 11.....	3:56 4.6	10:04 10.9	16:35 5.5	22:28 10.9
Wed., April 12.....	5:04 4.8	11:27 11.0	17:45 11.0	23:49 11.1
Thurs., April 13.....	6:09 4.4	12:31 11.6	18:46 11.6	.....
Fri., April 14.....	0:50 11.7	7:06 3.8	13:20 12.6	19:39 3.3
Sat., April 15.....	1:39 12.6	7:54 2.9	13:59 13.6	20:34 2.2
Sun., April 16.....	2:21 13.5	8:37 2.0	14:38 14.6	21:05 1.0
Mon., April 17.....	3:01 14.4	9:18 1.1	15:15 15.5	21:44 0.0
Tues., April 18.....	3:41 15.0	9:57 0.5	15:54 16.1	22:23 -0.7
Wed., April 19.....	4:23 15.5	10:36 0.0	16:35 16.4	23:02 -1.0
Thurs., April 20.....	5:06 15.7	11:17 0.0	17:18 16.4	23:43 -0.9
Fri., April 21.....	5:51 15.6	12:00 0.3	18:04 16.1	.....
Sat., April 22.....	0:28 -0.4	6:38 15.2	12:36 1.0	18:52 15.4
Sun., April 23.....	1:18 0.4	7:29 14.6	13:40 1.8	19:45 14.5

DATE.	Time and height of high and low water.			
Mon., April 24.....	2:15 1.3	8:25 13.9	14:43 2.7	20:45 13.6
Tues., April 25.....	3:21 2.2	9:31 13.4	15:55 3.2	21:57 12.8
Wed., April 26.....	4:29 2.6	10:47 13.2	17:07 3.2	23:29 12.6
Thurs., April 27.....	5:37 2.6	12:00 13.6	18:16 2.8	.....
Fri., April 28.....	0:33 13.5	6:41 2.0	13:01 14.7	19:17 2.1
Sat., April 29.....	1:32 13.5	7:38 2.0	13:52 15.3	20:10 1.3
Sun., April 30.....	2:22 14.0	8:29 1.5	14:36 15.1	20:56 0.6

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean seal level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the Advance the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*Note—The sailings on Monday, April 3 and May 1, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., March 12, 1916.)

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Mar. 6.	Zent.	Elders & Fyffes.	New York.	Mar. 7.	Quillota.	Pacific Steam Nav. Co.	Kingston, Ja.
Mar. 7.	Venezuela.	Compagnie Gen. Trans.	St. Nazaire.	Mar. 7.	Wisdom.	Dr. Salisbury.	Chagres River.
Mar. 10.	Monterideo.	Cia. Trans. de Barcelona.	Barcelona.	Mar. 10.	Leonidas.	United States Navy.	Coast ports.
Mar. 10.	Wisdom.	Dr. Salisbury.	Chagres River.	Mar. 11.	Camila.	Elders & Fyffes.	Bristol & Jamaica.
Mar. 11.	Camilo.	Elders & Fyffes.	Port Limon.	Mar. 12.	Montevideo.	Cia. Trans. de Barcelona.	Barcelona.
				Mar. 12.	Venezuela.	Compagnie Gen. Trans.	St. Nazaire.
*EXPECTED ARRIVALS.				*EXPECTED DEPARTURES.			
Mar. 15.	Jos. Cuneo.		Philadelphia.		Wisdom.	Dr. Salisbury.	
Mar. 17.	Albanian.	Leyland Line.	Liverpool.		Jos. Cuneo.		
					International Petr'l m. Co.		
					Leyland Line.		

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

ARRIVALS.				DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
Mar. 6.	Herakles.	Brussgaard Kios Dmksk.	Tocopilla.	Mar. 1.	Seiyo Maru.	Toyo Kisen Kaisha.	Hongkong.
Mar. 6.	Crown of Seville.	Prentice Service, Henderson	Seattle.	Mar. 4.	Araucario.	Pacific Steam Nav. Co.	Buenaventura.
Mar. 7.	Ucayali.	Peruvian Line.	Mollendo.	Mar. 5.	Alicia.	Panama Transport Co.	Camp Sabalath.
Mar. 8.	Limari.	South American S. S. Co.	Valparaiso.	Mar. 5.	Florence Luckenbach	Luckenbach Line.	Antofagasta.
Mar. 8.	Peru.	Pacific Steam Nav. Co.	Valparaiso.	Mar. 6.	Greystoke Castle S. S. Co.	Greystoke Castle S. S. Co.	Colonel.
Mar. 9.	Alvarado.	Pacific Transport Co.	San Francisco.	Mar. 8.	Limara.	Akiesiedelskate, Asker.	Oslo.
Mar. 11.	Hesperos.	Brussgaard Kios Dmksk.	San Francisco.	Mar. 8.	Limara.	Brussgaard Kios Dmksk.	San Francisco.
				Mar. 9.	Jamaica.	Pacific Steam Nav. Co.	Tahoga.
				Mar. 9.	Kiyo Maru.	Toyo Kisen Kaisha.	Colonel.
				Mar. 11.	Papato.	Long Beach S. S. Co.	Punta Arenas.
				Mar. 12.	Alvarado.	Panama Transport Co.	Callao.
				Mar. 12.	Hesperos.	Brussgaard Kios Dmksk.	San Francisco.
EXPECTED ARRIVALS.				EXPECTED DEPARTURES.			
Mar. 15.	Hermes.	Brussgaard Kios Dmksk.	South ports.	Mar. 13.	Limari.	South American S. S. Co.	Valparaiso.
Mar. 19.	Coya.	W. R. Grace & Co.	South ports.	Mar. 13.	Manani.	Pacific Steam Nav. Co.	Tumaco.
	Gurnsey.	Wilhelm Wilhelmsen.	Mejillones.	Mar. 13.	Ucayali.	Peruvian Line.	Guayaquil.
	O. M. Clarke.	C. H. Higgins.	San Francisco.	Mar. 17.	Peru.	Pacific Steam Nav. Co.	Guayaquil.
				Mar. 17.	Jamaica.	Pacific Steam Nav. Co.	Colombian ports.

a. m., connects with the despatches for the sailings on April 3 and May 1.

†When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Schedule of Launch Service to Taboga.

Following the placing of the new gasoline launch *Taboga* in service, the schedule of launch sailings between Balboa and Taboga Island was revised, effective February 1, and is now as follows:

From Balboa—Daily, launch *Taboga* leaves for Taboga 9.45 a. m. and at 5.30 p. m.

From Taboga—Daily, launch *Taboga* leaves for Balboa at 10.45 a. m. and at 6.45 p. m. The 10.45 a. m. trip from Taboga may be delayed at times to 2 p. m., under orders given by the Chief Quartermaster, the manager of the Hotel Aspinwall, or the Captain of the Port of Balboa.

On Mondays and days following holidays the launch *Aspinwall* will be used to supplement the regular daily service, leaving the dredge landing for Taboga at 5 a. m., and returning from Taboga at 6.30 a. m.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., March 14, 1916.

The following insufficiently addressed letters have been received at the office of the Director of Posts and may be procured upon request of the addressees:

Anderson, Miss A. E.  
Antonio, Don L.  
Bergman, Carl  
Bordt, Charles B.  
Boyes, Fiv Mrs.  
Brehner, Olney  
Buchanan, Gilbert R.  
Burnett, Azariah  
Crabtree, H. J.  
Farmer, Mrs. C.  
Gross, Mr. & Mrs. Wm.  
Harper, Miss Edith  
Harrington, Benjamin

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Sails	Arrives
Carrilla.	U. F. C.	Mar. 8.	Mar. 15
Colon.	P. R. R.	Mar. 9.	Mar. 15
Tenadores.	U. F. C.	Mar. 11.	Mar. 19
Santa Maria.	U. F. C.	Mar. 11.	Mar. 22
Advance.	P. R. R.	Mar. 16.	Mar. 23

Metopan.	U. F. C.	Mar. 18.	Mar. 27
Almirante.	U. F. C.	Mar. 22.	Mar. 29
Panama.	P. R. R.	Mar. 23.	Mar. 29
Pastores.	U. F. C.	Mar. 25.	Mar. 31
Zacapa.	U. F. C.	Mar. 29.	April 5
Alhucma.	P. R. R.	Mar. 30.	April 5
Calomares.	U. F. C.	April 1.	April 9

## CRISTOBAL-COLON TO NEW YORK.

Allhucma.	P. R. R.	Mar. 16.	Mar. 22
Zacapa.	U. F. C.	Mar. 16.	Mar. 23
Calomares.	U. F. C.	Mar. 20.	Mar. 27
Colon.	P. R. R.	Mar. 23.	Mar. 29
Carrilla.	U. F. C.	Mar. 23.	Mar. 30
Tenadores.	U. F. C.	Mar. 27.	April 3
Advance.	P. R. R.	Mar. 30.	April 6
Santa Maria.	U. F. C.	Mar. 30.	April 6
Metopan.	U. F. C.	April 3.	April 11
Panama.	P. R. R.	April 6.	April 12
Almirante.	U. F. C.	April 6.	April 13
Pastores.	U. F. C.	April 10.	April 17

## NEW ORLEANS TO CRISTOBAL-COLON.

Abongores.	U. F. C.	Mar. 11.	Mar. 18
Cartago.	U. F. C.	Mar. 15.	Mar. 20
Atenas.	U. F. C.	Mar. 18.	Mar. 25
Heredia.	U. F. C.	Mar. 22.	Mar. 27
Turrialba.	U. F. C.	Mar. 25.	April 1
Parismina.	U. F. C.	Mar. 29.	April 3
Abongores.	U. F. C.	April 1.	April 8
Cartago.	U. F. C.	April 5.	April 10
Atenas.	U. F. C.	April 8.	April 15
Heredia.	U. F. C.	April 12.	April 17
Turrialba.	U. F. C.	April 15.	April 22
Parismina.	U. F. C.	April 19.	April 24

## CRISTOBAL-COLON TO NEW ORLEANS.

Parismina.	U. F. C.	Mar. 19.	Mar. 24
Abongores.	U. F. C.	Mar. 19.	Mar. 27
Cartago.	U. F. C.	Mar. 26.	Mar. 31
Atenas.	U. F. C.	Mar. 26.	April 3
Heredia.	U. F. C.	April 2.	April 7
Turrialba.	U. F. C.	April 2.	April 10
Parismina.	U. F. C.	April 9.	April 14
Abongores.	U. F. C.	April 9.	April 17
Cartago.	U. F. C.	April 16.	April 21
Atenas.	U. F. C.	April 16.	April 24
Heredia.	U. F. C.	April 23.	April 28
Turrialba.	U. F. C.	April 23.	May 1

Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and

Miraflores Lakes for the week ending at midnight, Saturday, March 11, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gambao	Gatun Lake.	Miraflores Lake.
Sun., Mar. 5.	126.05	92.67	86.49	86.46	54.30
Mon., Mar. 6.	125.50	91.95	86.51	86.45	54.27
Tues., Mar. 7.	125.35	91.78	86.50	86.43	54.30
Wed., Mar. 8.	125.23	91.70	86.48	86.43	54.35
Thurs., Mar. 9.	125.20	91.69	86.58	86.42	54.31
Fri., Mar. 10.	125.20	91.62	86.52	86.43	54.29
Sat., Mar. 11.	125.10	91.60	86.47	86.42	54.26

Heights of low water to nearest foot

Rainfall from March 1 to 11, 1916, inclusive.

STATIONS.	Maximum in one day.				Total for period.
	Ins.	Ins.	Ins.	Ins.	
Pacific Section—					
Balboa	.17	.4	.8	.21	
Balboa Heights	.31	.8	.57		
Miraflores	.10	.4	.10		
Pedro Miguel	.04	.8	.07		
Rio Grande	.19	.8	.28		
Central Section—					
*Culebra	.18	.8	.27		
*Camacho	.43	.8	.43		
Empire	.43	.8	.51		
Gambao	.39	.8	.58		
*Juan Mina	.36	.8	.45		
Alhajuela	.10	.8	.12		
Vigia	.09	.8	.11		
Frijoles	.18	.10	.32		
*Monte Lirio	.40	.2	.56		
Atlantic Section					
Gatun	.69	.10	1.51		
*Crazos Brook	.20	.2	.59		
Heredia	.55	.10	1.09		
*Bocas del Toro	.45	.4	1.62		

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values, midnight to midnight.

†Standard rain gage—readings at 8 a. m. daily.

# CANAL



# RECORD

Volume IX. BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, MARCH 22, 1916.

No. 31.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (domestic postage), and \$1.50 in other countries (foreign postage). The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll. Bound volumes are for sale at \$2.50 each.

All subscriptions expire on December 31. Domestic subscriptions are charged as beginning from the first of the quarter of the year in which received.

Remittances should be made to pay only to December 31, 1916, on this basis; and subscription for the rest of the year, to January 1, 1917, is \$1.00.

For foreign subscriptions the year is divided into thirds; remittances for the remainder of this year should be \$1.50.

Remittances for subscriptions may be forwarded to The Panama Canal, Washington, D. C., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

Canal Will Probably Be Opened on April 15.

The conditions in Gaillard Cut are such as to justify a prediction that the Canal can be reopened to traffic on April 15 for ships drawing up to 30 feet. It is the expectation of the engineers that temporary delays will probably occur from time to time after April 15, during which the dredges will have to have uninterrupted possession of the right-of-way in maintaining the channel and completing it to full width and depth.

In order that the work may proceed to best advantage, unhindered, the Canal will decline to pass vessels through the Canal before April 15.

Excavation from Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, March 20, amounted to 265,461 cubic yards. In addition an aggregate of 51,334 cubic yards was rehandled by the pipeline suction dredge No. 86, the seagoing suction dredge Culebra, and the Belgian ladder dredge No. 5.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	77,265
Gambou.....	15-yard dipper.....	69,150
Paraíso.....	15-yard dipper.....	66,545
Coroal.....	Ladder.....	30,800
No. 83.....	Pipeline suction.....	11,975
Culebra.....	Seagoing suction.....	28,320
No. 86.....	Pipeline suction.....	23,900
No. 5.....	Belgian ladder.....	8,770

About one-third (9,656 cubic yards) of the work of the Culebra was primary excavation from the slides.

The average aggregate output of the dredges during the 21 weeks preceding that

ending at midnight of Monday, March 20, was 257,125 cubic yards, the total amount of primary excavation during that period (since October 19) having been 5,399,725 cubic yards. This has been an average of 36,733 cubic yards for each of the 147 days.

The "Engineer" Meets with Delay.

Word has been received that the tug Engineer, which was due to arrive at Cristobal about March 19, has met with delays, and left Southport, N. C., at 7 a. m., Thursday, March 16. The next stop was to be at Jacksonville.

The "Caribbean" to Be Used for Transporting Cattle.

In order to secure transportation of cattle to the Isthmus from Colombia and Central America without the relatively heavy expenses incurred by diverting ships of the Panama Railroad Steamship Line to side runs for this purpose, the Supply Department has arranged to use the seagoing suction dredge Caribbean. The Caribbean has a length of 288 feet and beam of 47 feet six inches, and can make a speed of about 11 knots. It is expected that she can carry about 450 cattle at a load.

The Caribbean has been used for the past five months for supplying air to drills working on the hard rock known as "Gibraltar," moving toward the channel in the slide on the east bank of the Cut, directly north of Gold Hill. The air compressors are to be transferred to a barge, after which there will be other interior renovation to fit the ship for the cattle service.

Concrete Pontoons Approaching Completion.

Three of the four reinforced concrete pontoons for small boat landings which are being constructed on the floor of the new dry dock at Balboa have been poured complete, and the deck of the fourth is to be poured before the end of this week. The first of the pontoons is now practically complete, the fenders, bumpers, aprons, and mooring bits, etc., having all been attached.

Oil Barge Launched by Means of Floating Crane.

The new 24 by 72-foot steel oil lighter, built at Paraiso shops for service among the dredges in the Cut, was launched without difficulty on Thursday, March 16. The floating crane Hercules lifted it in a sling off of the two flat cars on which it had been carried to the side of the Canal, swung it across the pontoon of the crane, and lowered it into the water. The oil barge weighs approximately 65 tons, and has a capacity of 2,400 barrels of oil.

The United States Army transport Kilpatrick arrived from Galveston on March 17 with a detachment of field artillery to be stationed on the Isthmus, and sailed for New York in the afternoon of March 21.

## CONGESTION AT TERMINALS.

Disordered Steamship Services Throw Burden on Facilities for Transshipment.

The prevalent congestion of cargo at ports of North and South America on account of scarcity of bottoms, with thousands of cars of freight tied up at terminals and some railroads declaring embargoes in order to relieve the pressure, is reflected in miniature on the Isthmus. Since the closing of the Canal, on September 18, with the consequent disruption of through services which were already embarrassed by the withdrawal of ships for government uses, a heavy burden has been thrown on the Panama Railroad. In addition to its normal work it has been pressed to handle quantities of cargo which would otherwise have gone through the Canal on ships.

The railroad, which had ceased to be a carrier on November 17, 1914, on account of the opening of the Canal, is now the connecting link between services of the United Fruit Company, Royal Mail Steam Packet Company, the French, Italian, Spanish, Elders and Fyffes, and Harrison and Leyland lines, and the Panama Railroad Steamship Line, calling at Colon and Cristobal, on the Atlantic side, and the lines on the Pacific side, which are the Pacific Steam Navigation Company, the Chilean and Peruvian lines, the Toyo Kisen Kaisha, the South Sea Navigation Company, and the Pacific Mail. In addition, the Luckenbach Line is endeavoring to maintain its coastwise service by transferring across the Isthmus, and occasional ships of W. R. Grace and Company are routed to Isthmian ports to transship their cargo, when conditions seem favorable.

The rush began at the end of the first week in October, when it was seen definitely that the Canal would not be opened for some time. Lines with ships on opposite sides of the Isthmus arranged exchanges of bottoms, and there was a rush to discharge cargo for transshipment. The heavy demands taxed the facilities to the utmost and created a congestion which subsequent traffic has tended to augment. This movement, however, was soon cleared up without much trouble. That which has since placed a heavy burden on the facilities on the Isthmus has been the irregular schedules and the arrival of steamers in bunches.

The berths are filled with vessels and the wharves are piled high with goods. Lines surfeited with freight began to take only the better-paying cargo, leaving quantities of low-revenue goods begging. This resulted in cars being tied up under load, the rolling stock thus being pressed into service for storage. The tying-up of so many cars to meet this need crippled the transportation system, and efforts to unload the cars on the already crowded wharves have added to the pressure there.

The congestion has been worse at the Pacific terminus than at the Atlantic, for the reason



that the latter is equipped with considerably more extensive wharves and piers. Ships can be handled there with less crowding. The sheds at both terminals, however, are filled with goods, as far as they can be without blocking the alleyways and obstructing the movements of trucks. The burden of the terminals has been divided somewhat by keeping cargo bound for Pacific ports on the wharves at Cristobal until it is called for, when it is shipped across the Isthmus by train and unloaded direct from the cars to the hold of the final carrier. Practically all of the goods piled up on the wharves at Balboa is consigned to Atlantic ports, and as fast as cars are made empty, direct to ship, they are reloaded with cargo from the wharf for movement across the line to Cristobal. Although the Panama Railroad Steamship Line is the only line lifting cargo for New York at Cristobal, the Panama Railroad ships have relatively large capacity and can handle most of what is given them, without extraordinary delay.

Despite the sudden heavy transshipment of cargo in October, with its consequent congestion, the railroad has been handling goods across the Isthmus in greater quantity than in the old days when it was a cocarrier under normal conditions. The Colon agency, for instance, during the months from September to December, inclusive, of 1911, handled an average of 94,704 tons of cargo a month, including rehandling. For the same months in 1912 the average was 98,524 tons. For the same months in 1915 the average was 110,634 tons per month. The handling by the two agencies in the six months ending March 1, 1916, was as follows:

Month.	Colon.	Balboa.	Total.
	<i>Tons</i>	<i>Tons</i>	<i>Tons</i>
September.....	84,160	18,434	102,594
October.....	126,757	60,043	186,800
November.....	150,545	94,000	244,545
December.....	81,075	55,569	136,644
January.....	149,903	70,510	220,413
February.....	101,392	69,500	170,892

The agencies have also to care for the delivery of bunker coal to vessels. In normal times the coal is supplied principally at Cristobal, where it is \$1 a ton cheaper, but the closing of the Canal has created an unusual demand for it at Balboa, and added to the handling difficulties of the terminal. The coal delivered during the six months was as follows:

Month.	Colon.	Balboa.	Total.
	<i>Tons</i>	<i>Tons</i>	<i>Tons</i>
September.....	24,387	11,533	35,920
October.....	15,350	37,000	52,350
November.....	3,200	16,480	19,680
December.....	2,000	6,998	8,998
January.....	1,700	11,713	13,413
February.....	1,500	6,919	8,419

#### NOTICE TO MARINERS.

##### Lights on Pacific Side.

Fixed oil lights heretofore placed on spar buoys in the entrance to the Canal at Balboa have been discontinued.

(The above was published as circular No. 643-20, dated March 18, 1916.)

The collier *Mars*, the repair ship *Pro-metheus*, and the fuel ship *Mumee* of the United States Navy completed transit of the Cut in the afternoon of Wednesday, March 15. The *Mars* sailed for Hampton Roads on March 17; the others are due to sail in the afternoon of Wednesday, March 22, for New York.

## CANAL WORK IN FEBRUARY.

Monthly Report of the Acting Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., March 15, 1916.

*The Honorable the Secretary of War,  
Washington, D. C.*

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of February, 1916:

#### Department of Operation and Maintenance.

**Lock operation and maintenance**—In addition to the usual maintenance and repair work at the locks, the work of assembling the material for the regulating valves at the Pacific locks was undertaken, and at the end of the month 80 per cent of this work at Pedro Miguel and five per cent at Miraflores had been accomplished. On February 15 the lock forces and the forces of the contractor for painting the steel work at the locks began preparing the surfaces of the miter gate leaves at Miraflores for the application of bitumastic solution and enamel, 60 per cent of this preliminary work having been accomplished in the upper east chamber, and the first coat of red lead had been applied to about 20 per cent of the gate surfaces in that chamber. Backfilling and grading at the lower level of Miraflores Locks was undertaken. The following commercial lockages were made:

*Gatun*—Six lockages, seven vessels; *Pedro Miguel*—Five lockages, five vessels; *Miraflores*—Five lockages, five vessels.

These lockages consisted principally of boats of the Army and Navy and barges of the Panama Railroad Company.

**Electrical Division**—The net output of the power plants was as follows: Gatun hydro-electric station, 3,211,690 kilowatt-hours; Miraflores steam station, 27,000 kilowatt-hours; total, 3,238,690 kilowatt-hours.

The net output of the Balboa air compressor plant was 217,634 cubic feet of free air compressed to 105 pounds. The usual electrical operation, maintenance, and repair work was carried on, and construction work was continued for the Canal and the Army.

**Municipal Engineering Division**—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: The work of the Army in the southern district was completed, including the grading and construction of walks at staff officers' quarters and the construction of walks at Fort Amador; work is still in progress on the municipal work at Fort Randolph, and on the installation of pumping plant and other municipal work at Fort Sherman. Work was also in progress on the piping installation at dry dock No. 1 and Pier 18, Balboa, and also on the construction of shops district roads at the Pacific terminals, and on roads and walks in the Balboa town-site.

**Meteorology and Hydrography**—The rainfall for the month exceeded the station averages at 11 stations and was deficient at seven. The rainfall for the month ranged from .59 inch at Miraflores to 5.54 inches at Quipo on the Siri River, the maximum precipitation recorded on any one day being 1.12 inches, at Brazos Brook on February 4. The estimated rainfall over the Gatun Lake watershed was 30 per cent above the average, or 2.78 inches against a 15-year mean of 2.13 inches. The Chagres River discharge at Albajuela was 27 per cent below the 15-year February normal,

and furnished 78 per cent and 46 per cent, respectively, of the net and total Gatun Lake yields. The elevation of Gatun Lake varied from 86.50 on the 29th to 86.26 on the 9th, averaging 86.37. Miraflores Lake varied in elevation from 54.36 on the 16th to 53.00 on the 8th, averaging 53.82. Eight seismic tremors were recorded at Balboa Heights during the month, on the 3rd, 8th, 9th, and 27th. No damage was reported as a result of any of these. The heaviest shock, of comparatively close origin—about 130 miles—was on February 8, and had an intensity of V on the Rossi-Forrel scale of 1 to X, and was generally felt.

#### Division of Terminal Construction.

##### PACIFIC TERMINALS.

**Dry dock and entrance pier**—Seven hundred and three cubic yards of mass and 834 cubic yards of reinforced concrete were placed, in which 18,157 pounds of steel for reinforcing and anchoring were embedded. The concrete work on the south side around the flooding valves and discharge valves has been completed to elevation plus 16.5. The remainder of the floor, which was left out on account of the incline trestle, was placed. Work on setting fixed steel for the valves, gate moving machinery, and bollards was continued, over 12 tons of fixed steel being placed. The work of drilling holes in the floor and cutting slots for the bilge blocks, keel blocks, and holding down slots, was continued, this work being about 80 per cent completed, with the exception of the area covered by the reinforced concrete pontoons. Surface drains and duct lines were practically completed on the north side of the dock, and excavation for same on the south side is about 90 per cent completed, and the concrete 50 per cent completed. The ejector pit at the end of the shops tunnel between buildings Nos. 1 and 2 has been completed up to the roof. The erection of steel in the dock gates amounted to 1.42 tons, making a total of 1,046.94 tons erected to date, practically completing the steel erection. The cleaning of the exterior surfaces of the gates for painting is about 50 per cent completed. Eight hundred and twenty-six rivets were driven in the gates, making the total to date 100,660. The concrete and coke filling has been satisfactorily completed in the bottoms of both leaves, the weight of this filling approximating 22.83 tons. Greenheart timber erected during the month amounted to 5.68 tons, making the total to date 19.84 tons. The granite sills have been completed. The contractor commenced coating the interiors of the gates on February 15, at the close of the month the interior of the south leaf being 90 per cent coated and that of the north leaf 40 percent.

The erection of the structural work of the pumping plant was started during the month; 120.10 tons of structural steel were erected; 1,094 rivets were driven; 210.97 tons of machinery were erected, making a total of 286.5 tons erected to date.

Most of the work on the entrance pier was performed on the extension at the west end and at the head wall for future dry dock No. 2. There were placed 3,592 cubic yards of mass and 1,074 cubic yards of reinforced concrete, the greater part of which was for the piers and diaphragms on the extension. Work was commenced on the placing of the fender piles. Steel erected amounted to 49.04 tons, making the total steel erected in the entrance pier 414.08 tons. This completes the erection

of the pier without the extension. Work in the entrance basin consisted of leveling down the high spots to -45, and this work is practically completed.

**Coaling plant**—Four hundred and sixteen cubic yards of earth were excavated at the end of the shallow coal pocket. In preparing foundations for the buttresses of the unloader wharf 265 cubic yards of earth and rock were excavated; 1,330 cubic yards of backfill were placed; and 1,611 cubic yards of concrete were placed in the buttresses and aprons, a total of 101,347 pounds of steel being used for reinforcing and anchoring to rock. In the cylinder substructure at the west end of the unloader wharf 24 cubic yards of reinforcing concrete were placed, in which 1,740 pounds of steel were embedded. The total steel erected to date in the unloader wharf deck amounts to 664.31 tons, and the number of rivets driven to 24,000. Erection of the unloader wharf is 87.5 per cent completed. The second coat of field paint on the machinery house of tower No. 2 was completed, completing all painting and enameling of the towers. Work was continued in the towers in connection with additional work on the steam and exhaust piping of both towers, which item is now 95 per cent completed; additional installation of operating parts for engines on both towers, which item is now 90 per cent completed; and the installation of the electric light systems in each tower was commenced, and at the end of the month was 10 per cent complete for each tower.

The three remaining cylinders on the reloader wharf were filled with concrete during the month, a total of 224 cubic yards being placed. The structural steel deck was completed to the angle, 325.05 tons of steel being erected, making the total erected 1,387.38 tons, or 98 per cent of completion; and four panels of the reinforced concrete deck were laid, amounting to 824 cubic yards. Excavation for anchors amounted to 3,082 cubic yards. Four thousand seven hundred and forty-two rivets were driven, bringing the total number of rivets in the 15 panels to 18,462. The assembling on the ground and riveting of certain sections of the reloader towers was commenced on February 1, and at the end of the month the erection of the two towers was practically complete, and approximately 4,000 rivets had been driven in material assembled on the ground. The work of erecting the reloader towers was commenced on February 16 and 141.60 tons of structural steel were erected. That part of the viaduct erected was given the second field coat of paint.

**Docks**—Two girders for supporting the west crane rail track of quay wall c-d were erected. Steel erected amounted to 11.80 tons, making the total erected to date on the crane rail supports, 47.09 tons. One hundred and thirty-two rivets were driven, making the total to date 528. This item of construction is 50 per cent completed. The work of filling the center section of pier No. 18 was continued, 939 cubic yards of coral fill being placed; 346 cubic yards of concrete were placed in the walls and columns; the remaining roof rods on the shed were erected; steel work was straightened and aligned and the interior white paint was approximately 50 per cent completed; and the cement tile roof was laid on the south side and on the south half of the center aisle. On February 21 the contractor started the erection of the housings in the latticed struts, and on February 29 housings were erected for 21

openings. The remaining three pontoons were poured and the deck of one was completed, 398 cubic yards of concrete and 67,783 pounds of reinforcing steel being placed. One hundred and thirteen piles were driven for supporting the well drills, for drilling the cofferdam, and 15,328 feet of holes were drilled.

**Excavation and filling**—The total excavation for the month amounted to 93,411 cubic yards, of which 63,797 cubic yards were classified as rock, the greater portion of which was obtained from the Sosa Hill quarry. There were sent to the East Breakwater from the Sosa Hill quarry 61,127 cubic yards of rock. The total fill for the terminals, including gravel and coral, amounted to 46,106 cubic yards, which was placed behind the unloader wharf, reloader wharf, and on the cofferdam.

#### ATLANTIC TERMINALS.

**East Breakwater**—Armor rock in the amount of 12,640 cubic yards, and 45,407 cubic yards of core rock, both from Sosa Hill, were dumped in the fill. The core section of the ell and the breakwater proper is completed, except the harbor slope which is being filled with dredged material; 9,122.4 cubic yards of concrete blocks were plowed from cars. Dredge No. 4 excavated 12,353 cubic yards of earth and 18,529 cubic yards of coral rock; the dredge *Marmot* excavated 16,360 cubic yards of blue rock and 10,907 cubic yards of coral rock for the fill.

Under the concrete block contract, 1,482 blocks were cast, involving the placing of 18,229 cubic yards of concrete, the total number of blocks cast to date being 4,290. Seven hundred and forty-one blocks were shipped to the breakwater, the total to date being 2,491. The number of days on which concrete was poured was 25, giving an average daily output of 59 blocks.

The manufacture of concrete blocks for the East Breakwater by the Division of Terminal Construction at the coaling plant was commenced on February 4, a total of 529 blocks being cast, involving the placing of 2,805 cubic yards of concrete.

**Coaling plant**—All fender piles for end wharf were driven, framed, and chocks placed. The rock breakwater on top of coral fill under wharves was completed; the permanent water system has been installed on unloader wharf, and installation is proceeding on the reloader wharf. All snubbing posts have been set and painted. The dredging across the front of end wharf to a depth of 41 feet was completed.

Under Washington order No. 40,483, the erection of steel for the viaduct, scale house, etc., amounted to 58 tons; structural steel for the reinforcement of the overhead trolley system was erected on the southwest and northwest loops of the viaduct; the scale house on the end wharf was completed; 8,700 pounds of rail were placed for viaduct track, which makes this item 90 per cent complete; approximately 5,000 feet of creosoted lumber for ties and walkways were placed on end wharf viaduct and northwest loop, making this item 95 per cent completed. Work was continued on wharf bunker, which is completely erected and 99 per cent riveted. Structural steel for conveyor or office tower was completely erected and approximately 90 per cent riveted. Galvanized iron sheeting and roofing was completed on wharf bunker and 85 per cent erected on conveyor tower. All steel sash for windows of office tower was placed. Painting was completed in the upper part

of wharf bunker and the first coat applied to upper part of office tower. Thirty-three conveyor cars were assembled and riveted, which makes a total of 87 to date, and leaves one car to be assembled. The four conveyor booms were delivered and painted; one of the split booms was erected. Galvanized iron sheeting was placed in the conveyor booms and shelters for motors, which completes the erection of this unit. Approximately 5,000 feet of wooden walkway was laid during the month, making this item 90 per cent complete; 880 feet of pipe railing was erected, which is 40 per cent of the total for the four reloaders. Feeder chutes for the conveyor booms were entirely erected and riveted.

Some breaking-in of unloader towers under Washington order No. 40,587 was accomplished, by using barge loads of coal; on February 28, test "B," an eight-hour continuous run, was made.

#### Marine Division.

Due to the continued blocking of the channel by slides, only 11 vessels and barges of light draft passed through the Canal, of which seven were southbound and four northbound. All vessels were of American register. The United States net equivalent tonnage was computed on four barges of the Panama Railroad Company. A statement showing vessels making the transit of the Canal in each direction during the month is appended to this report.\*

#### Dredging Division.

The total dredge excavation for the month, including earth, rock, and gravel, was 1,279,974 cubic yards. Of this total 32,344 cubic yards of earth were removed from the Pacific entrance; 37,446 cubic yards of earth and 1,391 cubic yards of rock from the Balboa inner harbor; 1,039,950 cubic yards of rock from Gaillard Cut; 51,807 cubic yards of rock and 21,895 cubic yards of earth from the Cristobal coaling station; 8,794 cubic yards of rock and 2,332 cubic yards of earth from the Atlantic terminals entrance channel opposite dock No. 11; and 12,353 cubic yards of coral sand and 18,529 cubic yards of coral rock at Coco Solo.

The east and west Culebra slides continued active during the month.

The rock breaker *Vulcan* was engaged from the 1st to the 15th of the month in breaking rock in the Balboa inner harbor, 2,278 holes being broken over an area of 36,448 square feet, with a total penetration of 5,039 feet, and a theoretical breakage of 2,990 cubic yards. The remainder of the month she was engaged in breaking a hard rock shoal inside the Canal prism at the Pacific entrance and part outside, along the edge of the Panama Railroad steel dock, 525 holes being broken over an area of 8,400 square feet with a total penetration of 1,835 feet, and a theoretical breakage of 1,039 cubic yards. The drill barge *Teredo No. 2* was engaged in drilling and blasting in the Culebra slides and standing-by; 131 holes were drilled with a total penetration of 3,180 linear feet, and 6,616 cubic yards broken. The hydraulic grader was engaged in sluicing Canal banks at Culebra slide, and elsewhere, during the fore part of the month; and in digging drainage ditch at Station 1825 west during the balance of the month. Dredges No. 1 and No. 82 were engaged in

\*The information contained in these tables has been published in the weekly reports in THE CANAL RECORD. The statements are therefore not printed.



excavating sand and gravel from the Chagres River, 50,133 cubic yards being excavated.

#### Mechanical Division.

Shop orders authorized during the month numbered 940, a decrease of 154 as compared with the month of January; those left over from the previous month numbered 810, and those carried forward into March, 784. The output of the foundry was 148,637 pounds of iron, 208,253 pounds of steel, and 23,314 pounds of brass. Hostling was done on 4,285 pieces of equipment, and shop and field repairs were made on 8,809. This includes 921 cars repaired in the shop.

**Fuel oil plants**—At the Balboa fuel oil handling plant the trestle leading to the crib was completed and the 10-inch oil line and 4-inch gasoline line were installed. The first delivery of gasoline in bulk was made through the 4-inch line.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following Canal structures were in the course of construction at the places named: **Ancon-Balboa**—The construction of the new concrete verandas and modification of the interior of the old administration building at Ancon was completed. All concrete work in connection with the new refrigerating plant at Balboa was practically completed, with the exception of the cornice and the floors in the beef rooms; placing of the cork insulation was continued and is 80 per cent completed; installation of the machinery and piping was commenced; at the end of the month the ammonia compressors and pump out, together with the motors, were in place ready for miscellaneous piping; the ammonia condensers were installed and tested; and the construction of the plant as a whole is 80 per cent completed. Construction of the new Ancon Hospital group was continued; all three buildings of the group are under roof and the tile on same is 90 per cent completed; all concrete work was finished and the plastering of block walls, including the roof cornice, was 90 per cent completed; the laying of floor tile and installation of mill work was commenced; and the construction of the group as a whole is 70 per cent completed. Construction of the new terminal office building in the rear of Dock 17 was continued, and at the end of the month the building was ready for the placing of the roof; plastering of block walls was commenced; and the building as a whole is approximately 60 per cent completed. The construction of the Ancon Y. M. C. A. building was continued, and is practically completed. Seventy-five per cent of the basement walls for the new laundry at Ancon had been placed at the end of the month and the forms for the main floor and platforms were ready for concrete; the building is 20 per cent completed. The construction of the 3-story concrete bachelor building in Ancon was continued; at the end of the month the building had been completed up to the roof line; the block partitions in the first floor were completed and plastering was commenced; and the building is approximately 55 per cent completed. The construction of the 20-stall garage in Balboa was completed, and the construction of a 10-stall garage in the vicinity of the Balboa railroad station was commenced, and is 10 per cent completed. The construction of a swimming pool and bath house in the rear of the Balboa Y. M. C. A. building was commenced, and the excavation for the pool is practically completed. **Galun-Colon**—

Work was continued on the construction of the new Colon Hospital group, these buildings being practically completed, the installation of the elevators, painting, installation of lighting fixtures, and exterior walks remaining to be completed. The relining of the baffle piers at the Gatun Spillway was continued, and is practically completed.

#### Supply Department.

The force report for the period ended February 23, 1916, showed a total of 24,223 employees of The Panama Canal and the Panama Railroad Company, of whom 3,476 were white Americans and 20,747 laborers. Of the latter, approximately 147 were Europeans and the remainder West Indian negroes. There was an increase of 635 laborers and a decrease of 119 Americans, making a net increase of 516.

The occupants of Government quarters numbered 6,772 Americans, of whom 3,692 were men, 1,520 women, and 1,560 children; and 9,991 West Indians, of whom 5,733 were men, 1,662 women, and 2,496 children.

The value of material received during the month was \$785,555.90. It came forward in 25 steamers, and the total weight of cargo, exclusive of lumber and spud timbers, was 31,929 tons. Some of the principal items were 1,246,431 feet, board measure, of lumber; 231,120 bags of cement; 756,000 pounds of pig iron; 100,000 gallons of gasoline in bulk; and 186,676 barrels of fuel oil in bulk.

The Balboa oil plant handled 187,292 barrels of fuel oil, and the Mount Hope plant handled 25,189 barrels. The major part of the oil was handled for The Panama Canal.

#### Health Department.

**General**—No case of yellow fever, smallpox, or plague originated on or was brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 32,026, was 8.24 per thousand per year, as compared with 10.20 for the preceding month, and 5.63 for the corresponding month of last year.

**Employees**—The health of employees continued good. The number of names on the payrolls for the preceding month was 30,497. On this basis, the admission to hospitals and quarters, 744, gave a rate of 292.75 per thousand, as compared with 318.23 for the preceding month, and 294.17 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites, 367.46; blacks, 132.34; and Americans, 247.72. The admission rates to hospitals and quarters for malaria were: Whites, 48.28; blacks, 12.45; and Americans, 35.39. The total number of deaths from all causes was 16. Of these 11 died from disease, or 3.97 per thousand, as compared with 4.99 per thousand for the preceding month, and 3.15 for the corresponding month of last year.

#### Accounting Department.

The cash balance in Canal construction appropriations on February 29, 1916, was \$11,805,356.23, and in the fortifications appropriations, \$1,560,400.06. The payrolls for February, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$934,609.76, and the fortification roll amounted to \$41,923.52. Payments by the Disbursing Clerk in Washington amounted to \$794,322.41 and by the Paymaster on the Isthmus to \$1,309,709.04. Payment of \$223,705.10 was also made to the Panama Railroad Company for commissary books. Collections on the Isthmus amounted to \$688,897.74, of which \$433,

109.84 was repaid to appropriations, \$236,638.29 was commissary collections and other trust funds, and \$19,149.61 was miscellaneous receipts to be covered into the Treasury. Of the miscellaneous receipts, \$1,116.63 was collected on account of tolls. Collections by the Disbursing Clerk at Washington amounted to \$36,105.02. Deposits in the sum of \$22,500 were made with Assistant Treasurers to be applied in payment of tolls and other charges against vessels using the Canal. Canal revenue collections and miscellaneous funds received amounted to \$192,441.19, and the disbursements under the same heading amounted to \$207,182.67.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

One hundred and fifty licenses of all kinds were issued. Nineteen estates were received and 11 settled, the total cash received during the month amounting to \$327.36, the total value of the estates closed being \$493.79. At the port of Balboa 32 vessels entered and 40 cleared, and at the port of Cristobal 50 vessels entered and 50 cleared.

**Postal service**—Postmasters remitted on account of money order fees, stamp sales, second-class mail collections, postage due collections, and box rent receipts, \$7,274.73. Money orders issued during the month aggregated \$274,252.50. Of this total \$89,950 represents the value of deposit money orders issued without fee, in lieu of postal savings certificates. Deposit money orders were paid to the value of \$77,350, and postal savings certificates to the value of \$3,260. The balance of postal savings deposits on hand at the close of the month, represented by unpaid certificates and deposit money orders, aggregated \$438,952, as compared with \$429,642 at the close of the previous month.

##### POLICE AND FIRE DIVISION.

Two hundred and ninety-six arrests were made. Of this total 269 were males and 27 females. Fifty-two convicts were confined in the penitentiary at the close of the month. Ten persons were deported, six of whom were convicts who had completed their sentences in the penitentiary and four of whom were prisoners who had served terms in jail.

Eleven fires occurred, the damage to the Panama Railroad property resulting therefrom amounting to \$15. Private property and the property of The Panama Canal and of the United States Army suffered no damage.

##### COURTS.

In the District Court 57 cases were settled; five civil, 18 probate, and 27 criminal cases were filed, and 115 cases of all kinds were pending at the close of the month. In the magistrates court 29 civil and 289 criminal cases were disposed of.

##### DIVISION OF SCHOOLS.

The total enrollment was 1,488 for the white schools and 940 for the colored. In the white schools the net enrollment was 1,299, the average daily attendance 1,092.5, and the average number belonging 1,123.7. In the colored schools the net enrollment was 702, average daily attendance 481.6, and the average number belonging 544.9.

##### Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including rehandled cargo, amounted to 170,693 tons. In addition, Panama Railroad forces stevedored a total of 12,180 tons. The following quantities of coal were



bunkered in steamers: Colon agency, 1,500 tons; Balboa agency, 6,919 tons; total, 8,419 tons.

Fifty-four fender piles were placed, making a total of 428 in place; 1,354 linear feet of fender system were completed, which is 53 per cent of the total required; 63.96 squares of roofing tile were manufactured for pier No. 7, making a total to date of 1,700 squares, or 99 per cent of the total required; 136,500 paving bricks were received, making a total of 386,500 bricks received to date, or 25.8 per cent of the amount required.

The preliminary borings for pier No. 6 were completed, two holes being driven during the month, making a total of 36 to date; 135.7 feet of wash drilling and 26.7 linear feet of diamond drilling were made.

Work was commenced on the boring of 53 holes for the extension of the mole on February 9, and five holes were drilled, with a total of 245.5 linear feet of wash drilling and 42.7 linear feet of diamond drilling.

The manufacture of concrete blocks for the East Breakwater by the Panama Railroad forces was commenced on February 7, and 937 blocks, or 2,623.6 cubic yards, were poured, being 23.4 per cent of the total amount to be manufactured by the railroad company.

Respectfully,

CHESTER HARDING,

Acting Governor.

#### The "Barbacoas" Returned to Service after Explosion.

The police launch *Barbacoas II* was returned to its station in Gatun Lake the second week in February, after the completion at Balboa shops of repairs made necessary by an explosion which occurred on January 6, when the launch was on a trip up the Caño Quebrado, and near the junction with the Piscado River. The explosion occurred in the forward compartment, and was found to have been due to the escape of vapor from the gasoline tank. The tank is made of copper, with interior bracing, and the vapor is supposed to have escaped where screws, passing through the copper into the bracing, had become loosened by the vibration of the engine and the jars received when the launch struck submerged obstacles.

The *Barbacoas II* had been in service since March 5, 1915, and to the first of this year had travelled 6,184½ miles, approximately 618 miles a month, in the police inspections of the lake and adjoining villages. The launch had used a total of 2,442½ gallons of gasoline in

the period, which is at the rate of approximately two-fifths of a gallon per mile.

A great deal of travel is over and through inundated woods, and much of the time the launch has to be handled carefully among the trees, while some collisions with submerged stumps and floating timber are inevitable. The explosion on January 6, which is attributed to fault in construction, is the only serious accident which has befallen the *Barbacoas II* in its unusually severe service. While the launch was on the cradle for the repairs made necessary by the explosion its hull was armored with rows of brass strips, running from the bow to slightly aft of amidships, between the keel and the water line, for protection in collisions with stumps and floating timbers.

#### Radio Operators.

The Radio Officer, Canal Zone, desires to communicate with all American citizens in this vicinity who are amateur or professional radio operators and who might be expected to volunteer their services to the United States Government in the event of war. Address: Lieutenant E. C. Raguet, U. S. N., Naval Radio Station, Darien, C. Z.

#### Removal of Quarters from Monte Lirio.

The 15 inspected and condemned box cars which have been used as quarters and mess for gold employees at Monte Lirio, along the railroad directly to the north of the station, have been sold and are to be demolished and removed from the Canal Zone. They were bought for \$50 by Wing Lee, a merchant in Limon, a village just outside the Canal Zone, about three miles east of Monte Lirio.

#### Clubhouse at Ancon Approaching Completion.

It is expected that the new Canal clubhouse at Ancon will be ready for occupancy by the end of this month. Carpenters and painters are now engaged in erecting and finishing bookshelves and kitchen accessories, in completing the stage in the assembly hall, and in laying the second pair of bowling alleys, which arrived from the United States on March 15. A description of the clubhouse was published in THE CANAL RECORD of December 15, 1915.

#### College Entrance Examinations.

Examinations to determine eligibility to enter colleges in the United States will be held in the week beginning on Monday, June 19, under the supervision of the Division of Schools of the Canal Zone. These are the regular examinations given at the same time at various centers by the College Entrance

Examination Board, which has its headquarters in New York City and represents the principal Eastern colleges and universities, such as Columbia, Cornell, Harvard, Johns Hopkins, Massachusetts Institute of Technology, Yale, etc. The examinations will be held in the board room of the Administration Building at Balboa Heights. Details may be had from the office of the Superintendent of Schools.

#### Commissary Departments for Silver Employees at Ancon.

An addition is being erected at the north end of the silver market, at the north toe of the hill on which the Hotel Tivoli is situated, to afford room for departments of dry goods, men's furnishings, shoes, and hardware, which will make this a complete commissary store for silver employees living in Ancon and vicinity. The present Ancon commissary is for gold employees only, and the silver employees of Ancon have heretofore been without some of the privileges given to those living in stations along the line and in Colon. The nearest points at which they could purchase supplies other than groceries and cold storage goods were Balboa and Corozal.

#### Obituary.

Patrick Skahill, employed as a steam engineer at the Cristobal shops of the Mechanical Division, died in Colon on March 5. His residence in the United States was in Brooklyn, N. Y.

Frederic W. Carlyle, custodian of the Administration Building at Balboa Heights, died in Ancon Hospital on March 16. His residence in the United States was in Washington, D. C.

#### Lag in Time Signals Received on the Isthmus.

The United States Naval Observatory has determined the lag of the Arlington time signal to be about two-hundredths (.02) of a second, and that of the Key West radio signal to be about twenty-seven hundredths (.27) of a second, the latter being due to the various relays in the commercial telegraph lines over which the signal passes from the Naval Observatory. The error of the time signal sent out from the radio stations is generally less than one-tenth (0.1) of a second.

The radio station at Darien receives the time signal from the Key West station, and transmits it by wire telegraph to the offices of the Port Captains. In this there is a lag of about two-tenths of a second, but by calculating on this it is possible to give the Port Captains time within one-tenth of a second of synchronism with the signals from Key West. Assuming a maximum variation in the Key West signal of one-tenth of a second from the standard determined in the Naval Observatory, the cumulative error at the Port Captains' offices will hardly exceed two-tenths of a second. Assuming that this error is constant from day to day, the rate of a chronometer can be obtained with a very high degree of accuracy.

An expedition to replace the gas tanks in the eight outermost buoys which line the Atlantic entrance channel through Limon Bay, is to start from Gatun at 4 a. m., Thursday, March 23. The work is to be begun early in the morning on account of the calmer seas then prevailing. The tanks which are to be replaced with fresh tanks have served the lights with gas for 143 days.

#### Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Ruben Allen.....	87232	Jamaica.....	Camp Bied.....	P. R. R.....	Mar. 1, 1916.
F. W. Carlyle.....	3912	U. S. A.....	Ancon.....	Supply Dept.....	Mar. 16, 1916.
José Maria Escarte.....	99605	Costa Rica.....	Cristobal.....	Supply Dept.....	Mar. 7, 1916.
Phillip Forbes.....	36961	St. Vincent.....	Paraiso.....	Supply Dept.....	Mar. 3, 1916.
Fitz Mosely.....	63523	Barbados.....	Panama.....	Term. Con. Div.....	Mar. 10, 1916.
Ivanhoe Alexander Ogg.....	90546	Panama.....	Colon.....	P. R. R.....	Mar. 15, 1916.
Henry Robinson.....	31005	St. Lucia.....	Camp Bied.....	Mechanical Div.....	Mar. 3, 1916.
Benjamin W. Stanley.....	5709	U. S. A.....	Ancon.....	Building Div.....	Mar. 15, 1916.
Claudius Thompson.....	81078	Jamaica.....	La Boca.....	P. R. R.....	Mar. 8, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

### Additions to the Panama Canal Library.

The following is bulletin No. 9 of recent additions to the Canal library at Balboa Heights:

GENERAL PUBLICATIONS, TEXT AND REFERENCE BOOKS, ETC.

- Atlanta, Georgia, Building code of the city of Atlanta, Georgia. Revised to January 1, 1911.
- A. Carini, Un cas de blastomycose peritoneale a coccidioides immitis. Extract from bulletin of Exotic Pathologic Society, Paris. 1915.
- A. Carini, Estatística do serviço anti-rábico, durante o anno de 1914. (Statistics of the anti-rabies service of Sao Paulo, Brazil).
- A. Carini, Onyxis ulcereux phagedenique. Extract from bulletin of Exotic Pathologic Society, Paris. 1915.
- A. Carini, Corps de Graham Smith dans les hematies du mus decumanus. Extract from bulletin of Exotic Pathologic Society, Paris. 1915.
- A. Carini and J. Maciel, Sur une hemogromarine et un trypanosome d'un muride (akodon fuliginosus). Extract from bulletin of Exotic Pathologic Society, Paris. 1915.
- Richard H. Edmonds, National insurdeness through national preparedness. 1916.
- Great Britain, Yellow Fever Commission (West Africa). Third report. 1915.
- John F. Hayford, Earth from the geophysical standpoint. Reprinted from proceedings of the American Philosophical Society.
- Chas. C. James, Main drainage of Cairo. 1916.
- H. W. Mowery, Some hazards and safety suggestions, in connection with construction, inspection, and maintenance of public utilities. 1915.
- New York State, Second annual report and year book of the board of governors of the New York State Nautical School. October 1, 1915.
- State of Ohio, Industrial Commission of Ohio. Reports of industrial accidents in Ohio. Nos. 4 to 13, inclusive. 1914.
- State of Ohio, Physical examination of wage earners in Ohio, in 1914. Report by Industrial Commission of Ohio. 1915.
- Bureau of Education, Digest of state laws relating to public education, in force January 1, 1915. Bulletin No. 47. 1915. By Wm. R. Hood, Stephen B. Weeks, and A. S. Ford.
- Bureau of Labor Statistics, Summary of the report on condition of women and child wage earners in the United States. Bulletin No. 172. 1915.
- Bureau of Labor Statistics, Unemployment among women in department and other retail stores of Boston. Bulletin No. 182. 1916.
- Bureau of Standards, Protection of life and property against lightning. Technology paper No. 56. By O. S. Peters. 1915.
- MANUFACTURERS' CATALOGUES AND DESCRIPTIVE LITERATURE.
- Able Engine Company, Inc., Catalogue of Able marine engines; the Able eight, \$250, leaflet; the Able eight, \$160, leaflet.
- American Abrasive Metals Company, Suggestions for fireproof and slipproof stair construction.
- American Machinery Company, Inc., American milk and cream dispensers, booklet.
- American Mason Safety Tread Company, Mason safety floor tread.
- American Pressed Steel Company, Neverslip rolled steel floor plates, booklet.
- American Seedtate Company, Catalogue of Seedtate flowers and vegetables.
- Apple Electric Company, Apelo electric lighting systems for motor boats, catalogue 51, 1914; Splitdorf-Apelo electric starting and lighting system for automobiles, leaflet; Splitdorf Dixie magneto, model S-8, booklet; Splitdorf Dixie magneto, models 40 and 42, booklet.
- Automatic Machine Company, Catalogue of enclosed marine engines; threading lathe, catalogue.
- Barrett Adding Machine Company, Your business and Barrett's, folder.
- Baldwin Locomotive Works, Catalogue No. 74, 1914, of gasoline locomotives.
- Carlyle Johnson Macine Company, Catalogue of the Bud-E marine motor, 1915; the Johnson friction clutch as applied in machine building, booklet; catalogue of E friction clutches; the Johnson alloy steel marine reverse gear, leaflet.
- Central Electric Company, Catalogue of electrical supplies.
- Cleveland Twist Drill Company, Catalogue No. 38, 1914.
- Columbian Brass Foundry, Catalogue of Columbian motor boat accessories. Propellers in a nutshell, booklet.

- Concrete Steel Company, The latest development in safety treads, "Sanitread," booklet; Sanitread safety floor tread, leaflet.
- Deloe Boat and Motor Works, Catalogue No. 13 of motor boats, etc.
- G. Droune Company, "Anti-Pluvius" puttless skylights, folder.
- Electric Storage Battery Company, Bulletin of batteries for industrial trucks and tractors, No. 151; bulletin 152 of "Exide" batteries for electric pleasure and commercial vehicles; bulletin No. 155, the latest development in the "Ironclad-Exide" battery.
- Excelsior Slate Company, Slate blackboards, a handbook of information for architect, school board, and contractor.
- Fairview Slate Company, Hand-rubbed natural slate blackboards, booklet.
- Firestone Tire and Rubber Company, Catalogue of Firestone truck tires; way to more mileage, booklet; tire accessories and repair materials, booklet; tire repair shop methods; mileage talks; Firestone motorcycle tires; Firestone signs; Firestone movie slides; wheelwright's instructions for applying Firestone demountable rims; instructions for applying Firestone removable motor truck tires; Firestone tires for electric; Firestone carriage tires; miscellaneous collection of 20 advertising leaflets.
- Friley Motor Company, Inc., Catalogue 15 of Friley valve-in-head motor.
- Graville Hahn, Handbook of information on slate blackboards.
- William H. Hand, Jr., Catalogue of Hand V-bottom motor boat designs.
- E. Howard Clock Company, Howard time recorders, leaflet; catalogue of tower clocks, street clocks, watchman clocks, marine clocks; catalogue of tower clocks.
- Keenan Structural Slate Company, Inc., Natural slate blackboards, booklet.
- Chas. P. McClellan, Catalogue of motor boat accessories.
- Motor Boat and Auto Supply Manufacturing Company, Catalogue of "Gene" V-boats.
- Murray & Tregartha Company, Gasoline yachts and engines; steam and gasoline yachts and engines; gasoline engines, yachts, and launches.
- A. O. Norton, Inc., Self-lowering jacks, folder.
- Paragon Gear Works, Tuttle tapping machines, folder; Paragon reverse gears for motor boats, folder.
- Peerless Marine Motor Company, Catalogue of Peerless marine engines.
- Pennsylvania Blackboard Company, Slate blackboards, a handbook of information for architect, school board, and contractor.
- Red-tolite Company, Catalogue No. 2 of Reflectolite reflectors.
- Red Wing Motor Company, Catalogue No. 16 of Red Wing Thorbred motors.
- Riverside Machine Company, Catalogue of pipe-bending machine.
- Scully Steel & Iron Company, January and February, 1916, stock list, booklet; wrought steel floor plates, booklet.
- Swedish Crucible Steel Company, Catalogue and price list of "Olson" steel truck wheels; the "Olson" unit for converting the Ford chassis into a one-ton truck, leaflet.
- Toppan Boat Manufacturing Company, Catalogue of motor boats and launches.
- Universal Safety Tread Company, Universal safety floor tread.
- Waterman Motor Company, Uni-Letric petrol electric unit lighting system, folder; Uni-Letric lighting system, folder; Uni-Letric lighting-cooking power plant, catalogue; Waterman Porto detachable motor, catalogue.
- Wicker-Kraft Company, Catalogue of yacht chairs.
- Winton Engine Works, Catalogue of Winton marine engines.
- Woods Machinery & Manufacturing Company, Catalogue of marine motors; catalogue of detachable rowboat motors; detachable canoe motors, folder.
- ARTICLES CONCERNING THE CANAL.
- West Coast Leader, Weekly, Lima, Peru. Account of visit of committee of National Academy of Sciences. Page 4, January 27, 1916, issue.

### Water Rents.

Water rents for quarter ending March 31, 1916, will be due and payable April 1 to 16, 1916, at the water service office, Avenue "B," Panama, and at the water service office, 8th and Cash streets, Colon. Discount period ends April 16, 1916. All bills must be paid on or before May 16 to avoid forced collection and the shutting off of water. In Colon the notices will not be delivered on the premises but they may be obtained by the property owners at the office where water rents are payable.

D. E. WRIGHT, Municipal Engineer.

### OFFICIAL CIRCULARS.

#### Stealing, Destroying, or Damaging Fruits, Fruit Trees, or Growing Crops in Canal Zone.

THE PANAMA CANAL, EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., March 11, 1916.

CIRCULAR NO. 710:

1. In accordance with Executive Order of December 5, 1912, all land in the Canal Zone has been taken over by the Government of the United States in connection with sanitation, construction, maintenance, operation, and protection of the Panama Canal, and all fruits, vegetables, and growing crops on the plantations, or in the jungles, of the Canal Zone are, therefore, the property of the United States, with the exception of a few cases in which former owners have been given permission to remain on their plantations and remove the crops therefrom.

2. Anyone stealing, willfully destroying, damaging fruits, fruit trees, and growing crops, or any other property on any of these plantations, or in the jungle, will be apprehended and punished in accordance with the law.

CHESTER HARDING, Acting Governor.

#### Photographs and Blue Prints.

THE PANAMA CANAL, EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., March 15, 1916.

CIRCULAR NO. 6 7-1 (superseding Circular No. 617):

Circular No. 617, dated April 1, 1914, concerning photographs and blue prints, is amended to read as follows:

1. All photographs for official purposes will be issued by the Executive Office, and certain authorized photographs, not to exceed a selection of more than 50, will be sold to employees and others to whom sale has been approved, at 20 cents each. A charge of 50 cents per linear foot will be made for panoramic views.

2. All requests for photographs will be made in writing to the Executive Office.

3. Copies of tracings in blue or white prints will be sold at five cents per square foot, and brown prints (vandyke negatives) at 10 cents per square foot, regardless of the size of the drawing. When the tracing is furnished by the person desiring prints, the rate will be two cents per square foot for blue or white prints and four cents per square foot for brown prints.

CHESTER HARDING, Acting Governor.

#### Act of Congress—Urgent Deficiency Appropriation, 1916.

THE PANAMA CANAL, EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., March 10, 1916.

CIRCULAR NO. 6 20-21:

The extracts from an Act of Congress quoted below are published for the information of all concerned.

CHESTER HARDING, Acting Governor.

AN ACT making appropriations to supply further urgent deficiencies in appropriations for the fiscal year ending June thirtieth, nineteen hundred and sixteen, and for other purposes, and for other purposes. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, to supply further urgent deficiencies in appropriations for the fiscal year ending June thirtieth, nineteen hundred and sixteen, and for other purposes, and for other purposes, namely:

#### DEPARTMENT OF STATE—FOREIGN INTERCOURSE.

Exposition in the city of Panama: For additional amount for the suitable participation by the United States in an exposition to be held in the city of Panama, including the same objects specified under this head in the Diplomatic and Consular appropriation Act for the fiscal year nineteen hundred and sixteen, and also such compensation to the Commissioner of the United States appointed by the President as the Secretary of State shall determine, \$7,500.

Payment to Panama: To enable the Secretary of State to pay to the Government of Panama the fourth annual payment, due on February twenty-sixth, nineteen hundred and sixteen, from the Government of the United States to the Government of Panama under article fourteen of the treaty of November eighteen, nineteen hundred and three, \$250,000.

Approved, February 28, 1916.



## COMMISSARY DEPARTMENT.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective March 11:

ARTICLE.	PRICE CHANGE.	
	Old	New.
Beds, ea.....	\$3.15	\$3.30
Bowls, sugar, ea.....	2.25	2.50
Bowls, sugar, ea.....	.89	1.00
Cages, bird, ea.....	1.35	1.25
Chains, key, ea.....	.03	.05
Chains, key, ea.....	.04	.06
Colanders, ea.....	.14	.17
Coolers, water, ea.....	1.40	1.50
Covers, saucpan, ea.....	.10	.12
Cups and saucers, set.....	1.35	1.50
Cups and saucers, set.....	1.45	1.60
Cups and saucers, set.....	.41	.45
Dishes, ea.....	2.66	2.85
Dishes, ea.....	2.95	3.20
Drainers, dish.....	.16	.21
Figs, cream, ea.....	.60	.65
Jugs, ice, ea.....	1.20	1.45
Knives, pocket, ea.....	.74	.80
Knives, pocket, ea.....	.24	.30
Mops, dish, ea.....	.05	.04
Pillows, feather, ea.....	1.20	.95
Plates, breakfast, ea.....	1.40	1.60
Plates, dessert, ea.....	.35	.40
Plates, B. & B., ea.....	.97	1.10
Plates, B. & B., ea.....	.48	.41
Plates, dessert, ea.....	.44	.49
Plates, cake, ea.....	.39	.49
Platters, coupe, ea.....	1.65	1.80
Plates, saucer, ea.....	.95	1.05
Plates, dessert, ea.....	1.25	1.35
Platters, meat, ea.....	7.25	8.00
Platters, meat, ea.....	3.35	3.70
Platters, meat, ea.....	2.20	2.25
Platters, meat, ea.....	5.65	5.50
Polish, Radua, tin.....	.10	.12
Pots, tea, ea.....	1.45	1.50
Pots, tea, ea.....	3.80	4.15
Saucapans, ea.....	.28	.38
Shades, lamp, ea.....	.19	.34
Towels, garden, ea.....	.23	.17
Go-baskets, ea.....	7.15	5.85
Locks, Yale, ea.....	.79	.78

EFFECTIVE MARCH 15, 1916.

Bags, hand, ea.....	8.20	6.95
Bags, unfitted, ea.....	6.85	5.75
Cases, suit, ea.....	9.95	10.70
Sandals, barefoot, pr.....	1.50	1.40
Cases, suit, ea.....	10.20	10.75
Purses, leather, ea.....	.46	.50

EFFECTIVE MARCH 16, 1916.

Almonds, sugared, lb.....	.23	.26
Pep extract, 16-oz jar.....	3.15	2.45
Chocolate, Fry's, 1 ea.....	.08	.09
Honey, quart tin.....	.33	.40
Ketchup, tomato, gallon jar.....	.94	1.15
Peas, petit pois, tin.....	.13	.15
Sauces, Morton's, pint bot.....	.16	.20
Salt, table, jar.....	.09	.15
Sauce, Worcester, A.O.B., quart bot.....	.23	.18
Vinegar, C. & B., quart bot.....	.15	.18
Waters:		
Ginger ale, Cochran's, bot.....	.09	.10
Kola, Cochran's, bot.....	.09	.10

EFFECTIVE MARCH 18, 1916.

Barrettes, ea.....	.21	.14
Breadspreads, ea.....	.94	.20
Belts, ea.....	.19	.20
Burlap, yd.....	.21	.18
Coats, rain, ea.....	7.90	8.30
Dollies, ea.....	.75	.82
Duck, linen, yd.....	.50	.70
Duck, linen, yd.....	.60	.75
Overalls, pr.....	.85	.97
Pencils, copying, ea.....	.07	.04
Poplin, yd.....	.17	.21
Ribbon, yd.....	.04	.05
Ribbon, yd.....	.11	.14
Ribbon, yd.....	.25	.28
Ribbon, yd.....	.02	.03
Ribbon, yd.....	.29	.30
Serge, black, yd.....	2.70	3.20
Soap, sulphur, cake.....	.08	.10
Ties, string, ea.....	.16	.19
Towels, Turkish, 100-ft length.....	.28	.20
Towels, ea.....	.17	.25

\*This item reduced to close out stock; when exhausted will not be reordered.

## Additions to Stock.

Boxes, sugar, Japanned, ea.....	\$0.17
Cups and saucers, set.....	.18
Dishes, vegetable, 10", ea.....	9.40
Dishes, fruit, ea.....	.75
Dishes, bakers, 10", ea.....	1.15
Dishes, bakers, 8", ea.....	.70
Hinge, butt, brass, 1 1/2" x 2", pr.....	.25
Jugs, Wescott, ea.....	1.25
Line, clothes, galvanized, 100-ft length.....	.20
Percolators, enameled, ea.....	1.00
Plates, dessert, ea.....	.36
Saucers, fruit, ea.....	.21
Tureen, soup, with stand and ladle, ea.....	28.75

## SHIPPING INFORMATION.

## Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions for the period until May 1 are given in this table:

MARCH.					
DATE.	Time and height of high and low water.				
Wed., March 22...	5:28 15.4	11:37 0.2	17:41 16.0	.....	
Thurs., March 23...	0:03 -0.2	6:07 15.2	12:16 0.6	18:21 15.8	
Fri., March 24.....	0:44 0.3	6:51 14.8	13:00 1.2	19:04 15.2	
Sat., March 25.....	1:32 1.0	7:37 14.2	13:51 2.1	19:53 14.4	
Sun., March 26.....	2:28 1.8	8:32 13.4	14:52 3.0	20:52 13.5	
Mon., March 27....	3:35 2.6	9:40 12.8	16:04 3.5	22:07 12.9	
Tues., March 28....	4:47 2.9	11:01 12.7	17:21 3.6	23:32 12.8	
Wed., March 29....	5:59 2.7	12:19 13.3	18:32 3.0	.....	
Thurs., March 30..	0:48 13.2	7:05 2.1	13:22 14.1	19:37 2.0	
Fri., March 31.....	1:49 14.0	8:03 1.2	14:15 15.0	20:31 1.0	

## APRIL.

DATE.		Time and height of high and low water.			
Sat., April 1.....		2:40	8:52	15:01	21:18
		14.7	0.5	15.7	0.1
Sun., April 2.....		3:26	9:36	15:43	22:00
		15.2	0.0	16.1	-0.4
Mon., April 3.....		4:09	10:17	16:24	22:39
		15.5	-0.1	16.2	-0.6
Tues., April 4.....		4:50	10:36	17:03	23:16
		15.4	0.1	15.9	-0.3
Wed., April 5.....		5:29	11:33	17:42	23:53
		15.1	0.6	15.4	0.3
Thurs., April 6.....		6:07	12:10	18:18	.....
		14.5	1.4	14.7	.....
Fri., April 7.....		0:30	6:39	12:50	18:55
		1.1	13.8	2.4	13.9
Sat., April 8.....		1:11	7:22	13:32	19:33
		2.1	12.9	3.5	12.9
Sun., April 9.....		1:57	8:04	14:22	20:17
		3.2	12.1	4.4	12.0
Mon., April 10.....		2:51	8:55	15:24	21:12
		4.0	11.3	5.2	11.3
Tues., April 11.....		3:56	10:04	16:35	22:28
		4.6	10.9	5.5	10.9
Wed., April 12.....		5:04	11:27	17:45	23:49
		4.8	11.0	5.2	11.1
Thurs., April 13.....		6:09	12:31	18:46	.....
		4.4	11.6	4.4	.....
Fri., April 14.....		0:50	7:06	13:20	19:39
		11.7	3.8	12.6	3.3
Sat., April 15.....		1:39	7:54	13:59	20:24
		12.6	2.9	13.6	2.2
Sun., April 16.....		2:21	8:37	14:38	21:05
		13.5	2.0	14.6	1.0
Mon., April 17.....		3:01	9:18	15:15	21:44
		14.4	1.1	15.5	0.0
Tues., April 18.....		3:41	9:57	15:54	22:23
		15.0	0.5	16.1	-0.7
Wed., April 19.....		4:23	10:36	16:35	23:02
		15.5	0.0	16.4	-1.0
Thurs., April 20.....		5:06	11:17	17:18	23:43
		15.7	0.0	16.4	-0.9
Fri., April 21.....		5:51	12:00	18:04	.....
		15.6	0.3	16.1	.....
Sat., April 22.....		0:28	6:38	12:36	18:52
		-0.4	15.2	1.0	15.4
Sun., April 23.....		1:18	7:29	13:40	19:45
		0.4	14.6	1.8	14.5
Mon., April 24.....		2:15	8:25	14:43	20:45
		1.3	13.9	2.7	13.6

DATE.	Time and height of high and low water.			
	3:21	9:31	15:55	21:57
Tues., April 25.....	2.2	13.4	3.2	12.8
Wed., April 26.....	4:29	10:47	17:07	23:29
	2.6	13.2	3.2	12.6
Thurs., April 27.....	5:37	12:00	18:16	.....
	2.6	13.6	2.8	.....
Fri., April 28.....	0:33	6:41	13:01	19:17
	12.9	2.4	14.1	2.1
Sat., April 29.....	1:32	7:38	13:52	20:10
	13.5	2.0	14.7	1.3
Sun., April 30.....	2:22	8:29	14:36	20:56
	14.0	1.5	15.1	0.6

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3.47 p. m.

## Proposals for Furnishing the Commissary Branch with Green Coffee.

Sealed proposals will be received at the office of the Depot Commissary, The Panama Canal, Cristobal, C. Z., until 4 p. m., June 1, 1916, and then opened, for furnishing the commissary branch of the Supply Department with 50,000 pounds of green coffee, to be furnished and delivered in accordance with circular No. 2, dated March 15, 1916, copies of which circular may be obtained upon application to the Depot Commissary. Bids must be accompanied by security in the form specified in circular No. 2, guaranteeing that the bidder will deliver the coffee in accordance with his proposal. The Panama Railroad reserves the right to reject any or all bids or to accept any bid. Proposals should be marked "Proposal for furnishing the commissary branch with green coffee," and addressed to the Depot Commissary, Cristobal, C. Z.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., March 21, 1916.

The following insufficiently addressed letters and papers have been received at the office of the Director of Posts and may be procured upon request of the addressees:

Arden, Oliver	King, Murry
Arrowood, J. F.	Kinsman, Frank
Berkey, Frank	Lord, Geo. E.
Black, Nathan	Mannes, C. D.
Bolin, Henry D.	Mays, Henry L.
*Boyden, Mrs. Lewis L.	Miller, Capt. Wm.
*Byrne, Louis T.	Miltmore, Sarah
Candler, Prof. T.	Persons, E. W.
Cault, Elmer	Peoples Ice & Cold Storage
Dowden, I.	Quinn,
*Fensmark, L. C.	Co.,
*Frost, A. D.	Conn, Patrick
Ganon, Arthur	Smith, Dr. E. H.
Gordy, John	Stepotter, Edward
Graham, Miss Edith	Taylor, Lynn
Herman, Mrs. T.	Ucross, Miss Marina
Hildebrand, Fred	Westra, Peter
*Paper.	Wood, Mrs. W. M.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, March 18, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alahuala	Gembla	Gatun Lake	Miraflores Lake
Sun., Mar. 12.....	125.05	91.57	86.50	86.42	54.21
Mon., Mar. 13.....	125.00	91.53	86.46	86.40	54.10
Tues., Mar. 14.....	125.00	91.50	86.43	86.39	53.94
Wed., Mar. 15.....	125.00	91.44	86.43	86.35	53.91
Thurs., Mar. 16.....	125.00	91.41	86.38	86.32	53.90
Fri., Mar. 17.....	125.05	91.45	86.42	86.31	53.88
Sat., Mar. 18.....	125.00	91.67	86.42	86.31	54.00
Heights of low water to nearest foot.....	25.01	91.0			



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., March 19, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
March 17	Limalite.....	Peruvian.....	International Petroleum Co.....	New York.....	Talara.....	General cargo.....	1	339	170
March 17	Chimena.....	Panamanian.....	Juan Martinez.....	Cristobal.....	Panama.....	None.....		6	6

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

March 13	Mars.....	American.....	United States Navy.....	Antofagasta.....	Hampton Roads.....	Nitrates.....	2,300	5,804	3,197
March 14	Prantheus.....	American.....	United States Navy.....	San Francisco.....	New York.....	Exhibits.....	600	6,864	3,748
March 14	Maumee.....	American.....	United States Navy.....	San Francisco.....	New York.....	None.....		8,069	6,927
March 17	Adveo.....	American.....	L. H. Shoemaker.....	Amapala.....	Cristobal.....	None.....		99	73
March 17	Moni.....	British.....	W. Scoresby Routledge.....	San Francisco.....	Cristobal.....	None.....		94	47

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
March 14	Lewis Luckenbach.....	Luckenbach Line.....	New York.	March 13	Wisdom (yacht).....	Dr. Salisbury.....	San Blas coast.
March 15	Jos. J. Cuneo.....	Actieselskbt. Ocean Co.....	Philadelphia.	March 15	Jos. J. Cuneo.....	Actieselskbt. Ocean Co.....	N. Y. & Mandinga.
March 16	Oylerie.....	Bank Line, Ltd.....	Newport News.				
March 17	Kilpatrick.....	U. S. Army transport.....	Galveston.				
March 19	Matador.....	Harrison Line.....	Liverpool.				
March 19	Jacob Luckenbach.....	Luckenbach Line.....	New York.				

## \*DEPARTURES.

## \*EXPECTED ARRIVALS.

March 20	Albanian.....	Leyland Line.....	Liverpool.	March 22	Kilpatrick.....	U. S. Army transport.....	New York.
				March 22	Matador.....	Harrison Line.....	Galveston.
					Albanian.....	Leyland Line.....	Unknown.
					Oylerie.....	Bank Line, Ltd.....	San Francisco.
					Jacob Luckenbach.....	Luckenbach Line.....	Los Angeles.
					Lewis Luckenbach.....	Luckenbach Line.....	Unknown.

## \*EXPECTED DEPARTURES.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
March 13	Hermes.....	Bruusgaard Kios. Dmpsk.....	Seattle.	March 13	Manori.....	Pacific Steam Nav. Co.....	Guayaquil.
March 13	Acajuta.....	Pacific Steam Nav. Co.....	Seattle.	March 14	Uzagali.....	Peruvian Line.....	Callao.
March 15	Guernsey.....	Wilhelm Wilhelmssen.....	Mejillones.	March 14	Limari.....	South American S. S. Co.....	Valparaiso.
March 16	Hualaga.....	Peruvian Line.....	Callao.	March 15	Hermes.....	Bruusgaard Kios. Dmpsk.....	Lebu.
March 16	Harry Luckenbach.....	Luckenbach Line.....	San Francisco.	March 17	Guernsey.....	Wilhelm Wilhelmssen.....	Camp Sabbath.
March 17	Peru.....	Pacific Mail Co.....	San Francisco.	March 17	Alicia.....	Panama Transport Co.....	
March 17	Jamaica.....	Pacific Steam Nav. Co.....	Taboga.				
March 17	Canca.....	Pacific Steam Nav. Co.....	Guayaquil.				
March 18	City of Para.....	Pacific Mail S. S. Co.....	San Francisco.				
March 18	Quisque.....	Pacific Steam Navigation Co.....	Valparaiso.				

## DEPARTURES.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

March 19	Coya.....	W. R. Grace & Co.....	South ports.	March 20	Peru.....	Pacific Steam Nav. Co.....	Guayaquil.
March 21	Huasco.....	South American S. S. Co.....	Valparaiso.	March 20	Jamaica.....	Pacific Mail S. S. Co.....	San Francisco.
March 24	San Jose.....	Pacific Mail S. S. Co.....	San Francisco.	March 23	Peru.....	Pacific Mail S. S. Co.....	San Francisco.
March 25	San Jose.....	Standard Oil Co.....	San Francisco.	March 23	Acajuta.....	Pacific Steam Nav. Co.....	San Francisco.
				March 24	City of Para.....	Pacific Mail S. S. Co.....	San Francisco.

## Rainfall from March 1 to 18, 1916, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>		<i>Ins.</i>
Balboa.....	.17	4	.21
Balboa Heights.....	.31	8	.57
Miraflores.....	.10	4	.11
Pedro Miguel.....	.14	16	.29
Rio Grande.....	.32	16	.63
<i>Central Section—</i>			
*Culebra.....	.20	16	.52
*Camacho.....	.36	8	.45
Empire.....	.43	8	.67
Gamboa.....	.39	8	.84
*Juan Mina.....	.36	8	.47
Alhajuela.....	.11	18	.20
Vigia.....	.09	8	.21
Prijoles.....	.60	18	1.68
* Monte Lirio.....	.40	2	1.17
<i>Atlantic Section—</i>			
Gatun.....	.69	10	2.14
*Brazos Brook.....	.30	17	1.45
Colon.....	.55	10	1.48
Bocas del Toro.....	.70	8	2.15

\*Standard rain gage—readings at 5 p. m. daily.  
Automatic rain gage at unstarred stations—values, midnight to midnight.  
†Standard rain gage—readings at 8 a. m. daily.

Schedule of Launch Service to Taboga.  
Following the placing of the new gasoline launch Taboga in service, the schedule of launch sailings be-

tween Balboa and Taboga Island was revised, effective February 1, and is now as follows:

From Balboa—Daily, launch Taboga leaves for Taboga at 9.45 a. m. and at 5.30 p. m.

From Taboga—Daily, launch Taboga leaves for Balboa at 10.45 a. m. and at 6.45 p. m. The 10.45 a. m. trip from Taboga may be delayed at times to 2 p. m., under orders given by the Chief Quartermaster, the manager of the Hotel Aspinwall, or the Captain of the Port of Balboa.

On Mondays and days following holidays the launch Aspinwall will be used to supplement the regular daily service, leaving the dredge landing for Taboga at 5 a. m., and returning from Taboga at 6.30 a. m.

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Santa Maria.....	U. F. C. Mar.	15.....	Mar. 22
Advance.....	P. R. R. Mar.	16.....	Mar. 23
Metapan.....	U. F. C. Mar.	18.....	Mar. 27
Almirante.....	U. F. C. Mar.	22.....	Mar. 29
Panama.....	P. R. R. Mar.	23.....	Mar. 29
Pastores.....	U. F. C. Mar.	25.....	Mar. 29
Zacapa.....	U. F. C. Mar.	29.....	April 5
Altamira.....	P. R. R. Mar.	30.....	April 5
Calamarez.....	U. F. C. April	1.....	April 9
Carriello.....	U. F. C. April	5.....	April 12
Colon.....	P. R. R. April	6.....	April 12
Tenadores.....	U. F. C. April	8.....	April 16
Santa Maria.....	U. F. C. April	12.....	April 19
Advance.....	P. R. R. April	13.....	April 20
Metapan.....	U. F. C. April	15.....	April 24

## CRISTOBAL-COLON TO NEW YORK.

Colon.....	P. R. R. Mar.	23.....	Mar. 29
Carriello.....	U. F. C. Mar.	23.....	Mar. 29
Tenadores.....	U. F. C. Mar.	27.....	April 3
Advance.....	P. R. R. Mar.	30.....	April 6
Santa Maria.....	U. F. C. Mar.	30.....	April 6
Metapan.....	U. F. C. April	3.....	April 11
Panama.....	P. R. R. April	6.....	April 12
Almirante.....	U. F. C. April	6.....	April 13
Pastores.....	U. F. C. April	10.....	April 17
Altamira.....	P. R. R. April	13.....	April 19
Zacapa.....	U. F. C. April	13.....	April 20
Calamarez.....	U. F. C. April	17.....	April 24

## NEW ORLEANS TO CRISTOBAL-COLON.

Heredia.....	U. F. C. Mar.	18.....	Mar. 25
Turrialba.....	U. F. C. Mar.	22.....	Mar. 27
Pariminda.....	U. F. C. Mar.	25.....	Mar. 31
Abangarez.....	U. F. C. Mar.	29.....	April 3
Atenas.....	U. F. C. Mar.	1.....	April 8
Cariego.....	U. F. C. April	5.....	April 10
Heredia.....	U. F. C. April	8.....	April 15
Pariminda.....	U. F. C. April	12.....	April 17
Abangarez.....	U. F. C. April	15.....	April 22
Atenas.....	U. F. C. April	19.....	April 24

## CRISTOBAL-COLON TO NEW ORLEANS.

Cariego.....	U. F. C. Mar.	26.....	Mar. 31
Turrialba.....	U. F. C. Mar.	26.....	April 3
Heredia.....	U. F. C. April	2.....	April 7
Pariminda.....	U. F. C. April	2.....	April 10
Abangarez.....	U. F. C. April	9.....	April 14
Atenas.....	U. F. C. April	9.....	April 17
Cariego.....	U. F. C. April	16.....	April 21
Heredia.....	U. F. C. April	16.....	April 24
Pariminda.....	U. F. C. April	23.....	April 28
Abangarez.....	U. F. C. April	23.....	May 1



## The Canal Record

Official publication of The Panama Canal.

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Address All Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,

Isthmus of Panama.

### NOTES OF PROGRESS.

#### Lock Operating Forces Assembling for Duty.

In anticipation of the resumption of traffic through the Canal, cable messages have been sent to the members of the lock operating forces who are on furlough in the United States, directing them to report for service. As most of the operating force, outside of the clerical help, are either skilled mechanics or first-class electricians it has been possible to use a great many of them in work about the locks or in the shops of the Mechanical Division during the time that traffic has been suspended.

#### Vessels Waiting for Transit through Canal.

Following the statement that traffic through the Canal can probably be resumed on April 15 for vessels drawing up to 30 feet of water, ships have been arriving at the terminals to wait for passage.

On the Atlantic side those waiting at the close of business on Tuesday, March 28, were the *Lewis Luckenbach* and the *Jacob Luckenbach*, bound from New York for Los Angeles and San Francisco in the coastwise service of the Luckenbach Steamship Company; and the *Oyler* of the Bank Line, bound from Newport News for San Francisco.

On the Pacific side the vessels waiting for transit include the *Crown of Senile* of the Crown Line, from Seattle for London; the *Harry Luckenbach* of the Luckenbach Line, from San Francisco for New York; the *Sommerstad*, operated by A. F. Klavness and Company, from San Francisco for Europe;

and the *Saint Veronica*, of the British and Foreign Steamship Company, from Astoria for Plymouth, England. The *Alfred Nobel* of the Dampelsk Concordia, operating under charter to the E. I. Du Pont de Nemours Company, arrived from Tocopilla and is waiting for orders, either to proceed to San Francisco or to wait for the opening of the Canal in order to make an Atlantic port of the United States.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, March 27, amounted to 263,691 cubic yards. In addition an aggregate of 51,644 cubic yards was rehandled by the pipeline suction dredge No. 86, the sea-going suction dredge Culebra, and the Belgian ladder dredge No. 5.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	70,8 0
Gambou.....	15 yard dipper.....	67 185
Paraíso.....	15-yard dipper.....	58,961
Coroal.....	Laider.....	40,370
No. 83.....	Pipeline suction.....	11,340
Culebra.....	Sea-going suction.....	28,475
No. 86.....	Pipeline suction.....	30, 00
No. 5.....	Belgian ladder.....	7,245

The average aggregate output of the dredges during the 22 weeks preceding that ending at midnight of Monday, March 27, was 257,508 cubic yards, the total amount of primary excavation during that period (since October 19) having been 5,665,186 cubic yards. This has been an average of 36,787 cubic yards for each of the 154 days. This period, from October 19 to March 20, inclusive, is approximately five months and the average excavation per month has amounted to 1,133,037 cubic yards.

#### Record of the "Cascadas."

The 15-yard dipper dredge *Cascadas* was placed in commission on October 31, 1915, and was in the Cut continuously until March 20, when she was brought to the repair dock at Paraíso for renewing the starboard spud. During that time, slightly over four and one-half months, the *Cascadas* excavated 1,447,946.37 cubic yards and was delayed by breakdowns 77 hours and 135 minutes. Her average excavation was 466.44 cubic yards per hour, over a working period of 3,104 hours and 25 minutes.

The dredge was engaged throughout in excavating rock. The loss of time from breakdowns was only 2.44 per cent of the total working time.

#### Oil and Gasoline on Hand at Terminals.

The tank steamship *J. A. Moffett* and barge No. 93 of the Standard Oil Company arrived at Balboa on Saturday, March 25, from San Francisco with a total of 86,000 barrels of crude oil and 2,000 barrels of gasoline for the Canal storage tanks.

Including the supplies of the several oil companies operating tanks at the terminal plants, the fuel oil on hand at Balboa amounts to 88,000 barrels at present, the gasoline to 4,000 barrels, and the Diesel oil to 2,000 barrels. At Cristobal the supplies are 13,000 barrels of fuel oil.

#### Chilean Line to Increase its Service through the Canal

The South American Steamship Company is preparing to increase its service between the Canal and Chile. To the line's fleet consisting of the *Iluasco*, *Limari*, and *Palena*, the *Aysen* will be returned and the *Imperial* added. With the five ships the line can give a weekly service; there will be sailings every week for five consecutive weeks, then a week will be skipped, to be followed by five more consecutive weekly sailings. Upon the opening of the Canal the line will make Cristobal its Isthmian terminus, as before; and if the traffic demands it, the steamship *Mapcho* will probably be added to the service, which will then have a sailing every week.

The *Imperial* arrived at Balboa from Valparaíso in the morning of March 29. This is her first call at Balboa for over 13 years, her last clearance from Balboa having been on December 30, 1903, since which time she has been on a run between Valparaíso and Guayaquil. The *Imperial* is a famous ship on the west coast. She was built in Birkenhead in 1889, and when she first came out could make as high as 17 knots. Her relatively great speed for that period caused her to be used as a blockade runner by President Balmaceda during the revolution of 1891, and in later commercial service she was distinguished for her speed and appointments. The ship was practically rebuilt in 1915, at Valparaíso.

#### Sailing of the "Ancon."

The steamship *Ancon* of the Panama Railroad Steamship Line will sail from Cristobal for New York on Sunday, April 2, carrying cargo and first class passengers only.

#### South Bay of Pier 18 In Use.

The south bay of the new reinforced concrete pier at Balboa, No. 18, was turned over to the forces of the receiving and forwarding agency of the Panama Railroad for use on Sunday, March 26. This bay is 1,000 feet long by 51 feet in width, and will afford a convenient place for the storage of goods shipped from the Atlantic terminus by rail for transfer to Pacific carriers, or the reverse.

The construction of the pier, which was designed primarily for the transfer of cargo from and to ships and has no depressed tracks, is such that it will not be used for the unloading of ships when their cargo is to be loaded on cars. The present wharf, called the French steel pier, is provided with depressed tracks, set at such a level as to bring the floors of cars even with the floor of the pier, which allows the

easy delivery of goods from the pier to the cars by trucks. Where there are no depressed tracks the extra lift of between three and four feet to the floor of the cars adds to the cost and time of handling cargo onto cars. Pier 18 was designed for a condition in which transfer by cars would be reduced to a minimum, as will be the case when the Canal is in regular operation and transfers of cargo will be from the ship or to the ship, the pier being used as a place of temporary storage.

It was originally intended to have two depressed tracks down the center of the pier but following the decision to make a transfer pier of it the center has been filled with coral rock, and is now being paved at the level of the floor on either side. The side bays were paved with vitrified brick directly on the concrete deck. The center bay is being paved with wood blocks for about one-fourth of its length, beginning at the sea end, and the remainder will be paved with brick. The wood blocks which are being used were left over from the paving in Balboa shops. Foundations for two 10-ton railway depot scales have been built in the center bay, and the paving is being laid around them.

The roof over the entire pier has been finished, with the exception of the glass which is to be laid over apertures in special skylight tiles. In the roof there are 3,000 skylights (each approximately 12 by 18 inches) which will be completed by setting the glass in elastic cement. The roof has been ready for the placing of the glass for some time, but the shipments from the United States have been late in arriving. Some glass in stock in the Balboa store was found available for this use, and the work of installing the skylights was begun on March 25, from the land end of the south bay. Upon arrival of the shipments from the United States a proportionate part of the new glass will be used to replace the stock of the store.

In the installation of the doors along the south face of the pier, the connections above the doors for the operating devices have all been placed, and this has enabled the concrete forces to advance with the pouring of the walls over the doors, and of the parapet. The wall is finished, and the parapet is about 75 per cent completed, on the south side. The guard plates are being bolted to the door posts, and this work is about half finished.

The concrete gutters have been poured, but the roofing with which they are to be lined has not arrived on the Isthmus.

Water has been turned into the fire protection system, the connections for which were completed over a month ago. Six-inch water pipes extend along all four walls of the pier shed, and are connected by 4-inch drops to five hydrants on each side. Each hydrant has two connections for 2½-inch hose.

Conduits for the electric light and power transmission are practically completed. The switchboard for the central control of the circuits of the entire pier has been installed on an elevated platform, suspended from the roof trusses near the center of the pier. The two transformers ordered from the United States for the power and lighting circuits have not arrived, and temporary connections will be substituted.

The concrete telephone booths are being constructed, and the work on other conveniences on the pier is advancing rapidly toward completion.

## COLD WATER IN PANAMA BAY.

During February and March Temperature of Bay is Distinctly Lower.

During the months of February and March the temperature of the water in the Bay of Panama drops from the normal of about 80° Fahrenheit, for the year around, to about 74° F.; a minimum of 60° F. occurred in February, 1910. On the Atlantic side of the Isthmus the minimum which has been recorded is 75° F., occurring on several dates; the maximum is 87° F., and the annual mean is 81.9° F.

The temperature of the water in the Bay of Panama in February and March is about the same as the mean temperature of the ocean at New York Bay in early October; and to people accustomed to the warmth of the tropics it seems very chilly. Most swimmers find it uncomfortable, and the pearl fishing at the Pearl Islands, about midway of the Gulf of Panama, is interrupted. During the time of the cold water the divers either stop work or transfer their operations to the coast west of Cape Mala. The water in the lee of the cape is not affected by the causes which produce the drop in temperature in the Gulf, and stays at approximately the same temperature the year around, barring slight diurnal ranges.

The cause of the drop of temperature lies in the joint action of the Peruvian current (which is known also as the Chilean or Humboldt current) and local convective currents set up under the influence of the trade winds which blow across the Isthmus during the dry season.

The Peruvian current is an ocean stream proceeding from the Antarctic Ocean to the areas of higher temperature (and consequently less density) in the equatorial regions. The eddy divides at Cape Horn and one branch, advancing up the west coast of South America, is the Peruvian current.

The current is caused by the difference in temperature in the antarctic regions and the equatorial regions; this difference not only initiates the basic eddy but also, in establishing the southeast trade winds, assists the movement by imparting motion to the surface of the water, a motion gradually transferred to the underlying particles of water until a great section is in motion as a current.

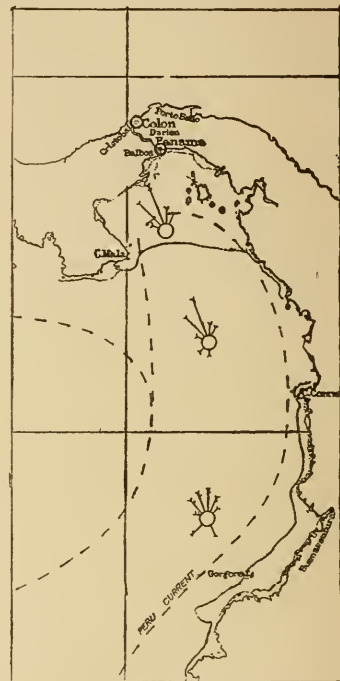
Ordinarily the Peruvian current sweeps across the mouth of the Gulf of Panama and then to the westward, as shown in the accompanying reproduction of a part of the Pilot Chart of the Central American waters, issued by the Hydrographic Office. It makes its way eventually back to the Antarctic, as a counter current. As it does not penetrate far up into the Gulf of Panama the waters of the upper Gulf and Bay of Panama are not affected by it except as the result of secondary effects of the California or Mexican current and local convective currents which occur in the dry season.

During the months which are summer for the southern hemisphere and winter for the northern the equatorial isotherm lies well to the south, and the northeast trade winds blow steadily across the Isthmus. The steady northerly winds at Panama set up a small southward current in the Gulf of Panama. The surface water is blown from shore toward the sea, and the water in the lower levels comes up from the mouth of the Gulf, in a subsurface counter current, to take the place of the water which has been moved away from the shore. The result is that the water of

the Gulf is mixed with the water of the Peruvian current and the whole Gulf is chilled.

With reference to the currents affecting the Gulf of Panama, the Pilot Chart for March, 1916, states in part:

"In the Pacific there is a well defined circulation but it moves through the ocean without any extraordinary influences, like the contours of the Gulf of Mexico for instance, to give it an abnormal direction. Along the coast of California and Mexico there is a southward movement of the water which turns off to the westward in great volume near Acapulco, forming the North Equatorial. There is a still greater current in strength and volume called the Peru Current, which comes up from the Antarctic and flows westward



PORTION OF PILOT CHART FOR JANUARY, SHOWING DIRECTION OF CURRENT AND WIND.

at the Galapagos Islands to form the South Equatorial. But there is such a surplus of volume and force that part of it runs northward past the Central American coast and with the Counter Equatorial gives new strength and volume to the North Equatorial. The California Current running south and the Peru Current running north along the coast meet at the entrance to Panama Bay and cause rips and surface disturbance. The Bay of Panama, being a reentering angle with its vertex toward the north, is in a tidal movement which has a range of about 16 feet. At other points along the coasts of Central America and Mexico, the tides have a range of about eight feet and the inshore currents north of Panama are strongest with the ebb tide and those south of Panama are strongest with the flood tide.

"The atmosphere is in a more unstable condition in the northern oceans than in the



southern oceans and in the temperate zone than in the tropic. For this reason more than any other it will be found that the seasonal changes are fewer in the Caribbean and near Panama than in the Gulf of Mexico and on the west coast.

"In the Gulf of Panama the current from the south makes a circular sweep and especially in the season of the northerlies it runs quite strong from Cape Mala southward. At other seasons the Mexican current sets more into the Gulf and the current makes almost a circular sweep around Malpelo and Cocos Islands and joins the Counter Equatorial. During the southern winter the Peru Current runs strong from the coast along the southern side of the Galapagos; the current on the northern side is very variable, sometimes very strong when it is joined by the Mexican Current running out of the Gulf of Panama. These currents after passing the Galapagos, form the South Equatorial.

"From Acapulco southward the Mexican Current predominates, but outlying shoals very often cause whirling currents running in the opposite direction in the bays and gulfs along the coast. These are often tidal in their nature or complicated by the tides, for they generally stop when the tide runs to the southward and eastward with the current."

#### QUARANTINE ACTIVITIES.

##### Examinations at Ports Show Slight Increase during February.

Immigration to the Isthmus from foreign ports exceeded emigration to foreign ports from the Isthmus by 133 in the month of February, 1916, according to the count kept by the quarantine officials at the ports of Cristobal-Colon and Balboa-Panama.

This makes the net emigration since July, 1913, a period of two years and eight months, amount to 26,576. During approximately the same period the Canal force diminished from 42,262 on June 25, 1913, to 24,366 on February 23, 1916, a decrease of 17,896.

The total number of passengers and crews examined in February was 12,063, in addition to which there were two stowaways, not allowed to land, making a total of 12,065 persons examined, of whom 9,124 were at Cristobal-Colon and 2,941 at Balboa-Panama. A comparison of the numbers of passengers and crews examined during each month since January 1, 1915, and during February of 1916 is afforded by the following tabulation:

Month.	Passengers.	Crews.	Total.
January, 1915.....	3,887	10,232	14,119
February.....	4,301	9,332	13,632
March.....	6,014	12,155	18,169
April.....	3,605	11,032	14,637
May.....	5,391	11,772	17,163
June.....	4,959	12,756	17,725
July.....	4,974	14,136	19,110
August.....	4,900	14,814	19,714
September.....	4,606	15,314	18,120
October.....	3,940	10,536	14,476
November.....	3,289	7,230	10,519
December.....	3,208	7,211	10,419
January, 1916.....	3,142	8,499	11,641
February.....	4,285	7,778	12,063
Total.....	60,510	150,997	211,507

A summary of the quarantine activities on the Isthmus during February is given in this consolidated report for the ports of Balboa-Panama and Cristobal-Colon:

Number of vessels inspected and passed.....	90
Number of vessels held in quarantine.....	13
Total.....	103

Number of special inspections made to enforce compliance with antiplague and mosquito breeding regulations.....	69
Number of vessels fumigated on arrival.....	10
Number of vessels fumigated on departure.....	1
Total.....	11
Number of crew examined.....	7,778
Number of passengers examined.....	4,285
Total.....	12,063
Number of supplementary inspections.....	1,428
Number of stowaways.....	2
Number of persons vaccinated at ports of arrival because of compulsory vaccination law.....	360
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law.....	372
Total.....	732
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and plague.....	390
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague.....	1,652
Total.....	2,042
Number of persons landed from foreign ports:	
Cabin.....	1,839
Steerage.....	1,121
Total.....	2,960
Number of persons embarked for foreign ports:	
Cabin.....	1,808
Steerage.....	1,019
Total.....	2,827
Number of persons arriving from coast towns on small launches and sailing craft.....	1,846
Number of persons sailing for coast towns on small launches and sailing craft.....	2,101
Apparent decrease for month from coast towns.....	255
Apparent increase for month from foreign ports:	
Cabin.....	31
Steerage.....	102
Net increase for month.....	133
Number of persons rejected and deported.....	8
Number of bills of health issued or vised.....	103
Number of inspections of docks.....	24
Number of inspections of vessels at docks.....	93
Number of persons landed.....	4,806
Less number for Pacific ports.....	169
Total.....	4,637
Total number of persons sailing.....	4,928
Total apparent decrease for month.....	291

#### Civil Service Examinations.

The following special examinations are announced to be held on April 23, 1916 (date to be left blank in applications):

Junior telegraph and telephone engineer (male), grades I and II, Interstate Commerce Commission; junior electrical engineer (male), grades I and II, Interstate Commerce Commission; junior mechanical engineer (male), grades I and II, Interstate Commerce Commission; junior signal engineer (male), grades I and II, Interstate Commerce Commission; junior structural engineer (male), grades I and II, Interstate Commerce Commission; assistant in dry land arboriculture (male), Bureau of Plant Industry, Department of Agriculture.

Yearly salaries for these positions are as follows: Junior telegraph and telephone engineer, \$720 to \$1,680; junior electrical engineer, \$720 to \$1,680; junior mechanical engineer, \$720 to \$1,680; junior signal engineer, \$720 to \$1,680; junior structural engineer, \$720 to \$1,680; assistant in dry land arboriculture, \$900 to \$1,500.

Applicants are referred to announcements Nos. 433 to 438, inclusive, posted at all post-offices and clubhouses in the Canal Zone, for more complete information.

#### MURRINA ON THE ISTHMUS.

##### Precautions Taken to Protect Horses and Mules against Trypanosomal Disease.

The disease of horses and mules known as "murrina," which is endemic in the Republic of Panama but has not been noticed within the Canal Zone since the eradication of an epidemic of it in 1909, has appeared on the Espinosa estate, near the Pacora River, well beyond Old Panama, and precautions are being taken to prevent its introduction among the Canal horses and mules.

The Chief Quartermaster has issued a circular letter to all district quartermasters, advising them of the imminence of the disease, and directing that they take every precaution to protect the animals in the corrals against infection. Horses and mules are not to be watered away from the corrals, and native animals are not to be watered at the corrals. Especial care is to be given to animals afflicted with sores or cuts.

A study of the disease was made by Dr. Samuel T. Darling, then Chief of Laboratory, Ancon Hospital, when it appeared in the Canal Zone in 1909. Up to that time it had been known in Panama variously as "murrina" and "derengadera," in the belief that there were two separate diseases. Doctor Darling determined the two to be the same, isolated the pathogenic agent, studied the diagnosis and pathological anatomy of the disease, its mode of transmission, and the prophylactic procedure in case of epidemic. His findings were embodied in a paper, "Murrina, a trypanosomal disease of equines in Panama," presented before the Canal Zone Medical Association, which incorporated the paper in its proceedings and also published it in pamphlet form. Copies of this pamphlet have been distributed among the district quartermasters.

Like the famous "sleeping sickness" or "negro lethargy" of tropical West Africa, murrina is caused by the entrance of trypanosomes into the blood, and there are other important resemblances, such as the development of anemia and of edema, followed by general sluggishness, febrile paroxysms, and emaciation. In murrina, however, the victims do not appear to be sleepy. Their sluggishness appears rather to be caused by feverish weakness, in conjunction with a partial paralysis of the hind legs. Even in cases where the animals went down in the last stages and lay for several days unable to rise, they appeared quiescent in weakness rather than comatose. The disease is fatal to horses and mules, but cattle are insusceptible.

Murrina is believed to be transmitted from one animal to another by flies, mechanically, as the result of their feeding in the galls and cuts of infected animals and then visiting open sores on noninfected animals. Experiments made at the laboratory warrant the belief that a horse or mule is safe as long as he has a whole skin. The liability, however, of a work horse or mule's having at least one small cut or chafed place or a sore mouth, and the attractiveness of such spots to flies, make the possibility of transmission very great if once the disease is brought into the community.

The American yacht *Cyprus* arrived at Balboa shortly after noon of Sunday, March 26, from Salina Cruz. This is the largest pleasure vessel which has called at the Canal ports. She is 277 feet in length by 28 feet beam and draws 13½ feet, and carries a crew of 50.

## WEST COAST EMBARGO.

## Panama Railroad Declares Embargo on Goods Destined to Ports South of Callao.

The Panama Railroad Company has placed an embargo, effective March 20, on all cargo from the United States and Europe destined to ports on the west coast south of Callao. The need of an embargo against transshipping cargo across the Isthmus for the points below Callao has arisen from the accumulation at the terminals and in the yards of goods beyond the capacity of the far-south services to lift.

During the time that the Canal was open a large proportion of its traffic was in vessels plying between the west coast of South America and the United States and Europe. In August, 1915, the last month in which the Canal was in use throughout the month, the cargo bound from Atlantic to Pacific over this route amounted to 41,159 tons. That bound from the Pacific to the Atlantic, from South America, amounted to 179,859 tons. The aggregate, north and south, was 221,018 tons, which was over 38 per cent of the total cargo which passed through the Canal.

Of the cargo shipped from the Atlantic to the Pacific, that consigned to South American ports direct was approximately one-sixth of the total. And it was approximately three times the quantity of the cargo which was transferred at Cristobal to vessels bound for the west coast.

The closing of the Canal disrupted the through services. Correspondingly it caused the lines whose services terminated at the Isthmus to fall heir to large increases of routed cargo. This, of course, threw an additional load on the Panama Railroad in making transfers between bottoms and caused congestion, as described in THE CANAL RECORD of last week.

The European war has interfered with many of the lines. Their services have been on irregular schedules, which has had the effect of making light runs of cargo through some periods, followed by an overflow when several steamships would come in at the same time. In most cases the steamships of the Atlantic lines are of considerably greater capacity than those in the service of the west coast lines. The result has been more cargo at Cristobal than the sailings from Balboa could clean up. And as there are only two lines from Balboa serving the territory south of Callao, and sailings have been irregular, cargo for the far south has piled up on the Isthmus.

In shipping goods to the Isthmus for transfer, the custom has grown up of shipping on unrouted papers, which permit delivery at Balboa to the first connecting steamship to the port of destination. This has been preferable to specific routing because in the latter method the shipper ran the risk of his goods arriving on the Isthmus just after a sailing of the specified line, which would mean that his goods would have to lie over until the next sailing of that line. Under the prevailing conditions of an excess of cargo for the south Pacific lines, their taking routed cargo in preference to unrouted has resulted in the unrouted cargo being subjected to unprecedented delay.

The effect of this has been that the wharves and piers at Cristobal and Balboa are badly congested with old date cargo; and so much rolling stock is tied up under load that the transporting ability of the railroad is seriously affected, to the point of threatening a complete

blockade. In order to relieve the situation the Panama Railroad has been forced to declare the embargo on goods destined to ports south of Callao, after making every effort to avoid the placing of embargoes during the time the Canal is closed.

As both the lines serving the territory south of Callao have promised to increase their services and make every effort to remove the overflow and badly delayed cargo which is on the Isthmus for them, it is anticipated that the embargo will not last longer than 30 days. It may be less. It all depends on the rapidity with which the cargo is removed, and the probable resumption of traffic through the Canal on April 15 is expected to prevent any further congestion.

## Simplifying Track System In Approach to Steel Pier at Balboa.

Following the reduction of operations in the Sosa Hill quarry and the advance of the heavy construction work on the dry dock and coaling plant toward completion, the Panama Railroad is removing the steamshovel and construction tracks and laying permanent tracks to the old steel pier. The line will follow within 100 feet of the toe of the hill, lying on the grade of the rock cut. This is about 150 feet south of the present running tracks, which have been a temporary construction, and the permanent line will have advantages of directness and level grade, made possible by the clearing up of the area. The original line to the pier ran over the site of the dry dock and coaling plant.

The permanent line will connect at the foundry of Balboa shops with the previously built line through the terminal yards of the Panama Railroad, and will run through the quarry bed to the steel pier, passing in rear of the new coaling plant. Connections are being provided for all permanent tracks in the vicinity of the coaling plant and dry dock in the rear of the coal storage area, and there will be double-track connection for the line to Fort Amador and Naos Island, passing in rear of the La Boca silver commissary. In the rear of the coaling plant there will be two extra tracks to provide a switching yard for the steel pier. When completed this arrangement of tracks will provide for double-track operation between Balboa yards and the steel pier, and between Balboa yards and Fort Grant, as far as the wye at the oil pumping station.

## Easter Holidays in Canal Zone Schools.

The Canal Zone schools will be closed from Saturday, April 15, to Sunday, April 23, inclusive, or throughout the week immediately preceding Easter.

## PASTURES IN CANAL ZONE.

## Project to Develop about 40,000 Acres to Maintain Cattle for Commissary Branch.

In connection with the use of cattle for supplying beef through the commissary stores to employees of the Government on the Isthmus and to shipping which makes use of the Canal and its terminal ports, the Supply Department has under way the development of pastures in the Canal Zone for fattening these cattle and maintaining a reserve sufficient to afford a reliable supply. It is not proposed to raise cattle, but to buy young cattle and develop and fatten them in the local pastures.

The use of native beef has developed in the past year from a tentative experiment to a monthly consumption of about 800 head. In July of last year the commissary branch acquired a pasturage of about 500 acres northeast of the Mount Hope-Gatun road, and began the work of maintaining the imported cattle in good order on pasture. The pasture was not large enough, however, to support properly a month's supply; and as the policy of buying only a month's supply at a time has made it necessary frequently to purchase at the highest price for immediate slaughter, and has made no provision for a reserve supply, it has been decided to extend the pastures.

Future needs on the Canal Zone can only be estimated approximately, but the Supply Department is proceeding on the basis of a consumption of at least 15,000 beefs, or 6,000,000 pounds of dressed beef, annually. The present program is to develop pasture sufficient for 20,000 head, which will mean about 40,000 acres.

Three separate tracts are being prepared. The first is an extension of the original pasturage at Mount Hope. It will lie on the east side of the Canal, on both sides of the Panama Railroad between Mount Hope and New Gatun, and will extend eastward almost to the Canal Zone boundary line, at Escondido, avoiding the watersheds of the Brazos Brook and Agua Clara reservoirs. About one-fourth of this area is already in grass; eventually it will contain about 10,000 acres of pasture. Its present westward limit is the east bank of the American Canal.

The second tract is on the east side of the Panama Railroad near New Culebra, in the valleys of the Obispo and Masambi Rivers. Beginning at milepost No. 36-6, and reaching to milepost No. 37-10, and extending approximately two miles to the east, this pasture will contain about 5,000 acres. The

## Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Em. by	Date of death.
John Lewellyn Balfour.....	95803	Jamaica.....	Colon.....	Transp't n. Div.	March 23, 1916
James Burnthorne.....	57070	.....	Pueblo Nuevo.....	Building Liv....	March 9, 1916
Abraham Benjamin.....	53628	Montserrat.....	Colon.....	Fortifications....	March 23, 1916
Edward Brown.....	82993	Jamaica.....	Panama.....	Health Dept.....	March 15, 1916
Joseph Harding.....	56616	Jamaica.....	Paraiso.....	Dredging Div....	March 17, 1916
H. Headley.....	122514	Barbados.....	Paraiso.....	Dredging Div....	March 17, 1916
Paul Penhant.....	96212	Jamaica.....	Panama.....	Transp't n. Div.	March 20, 1916
William Watts.....	47463	Barbados.....	Panama.....	Term. Corps Di.	March 19, 1916

The estates of the abovenamed deceased employees of the Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C.Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



clearing of sections of this area, amounting to about 4,000 acres, is in progress.

The third tract extends from the Rio Camitillo to the Rio Corundu, on the east side of the Canal, southward from Pedro Miguel and about a mile back from the line of the Panama Railroad. A part of this area has already been cleared by the land defense forces, and forces of the Supply Department are at work making additional clearings and fencing the tract.

All of the areas are to be enclosed in barbed wire fences.

Cattle have been purchased in the open market in Panama, Costa Rica, Nicaragua, Honduras, and Colombia. One Nicaraguan and one Costa Rican contract had to be cancelled because the contractors were unable to make delivery, on account of lack of water transportation.

A fourth area which will probably be used lies on the west side of the Canal, on the watershed of the Rio Grande. This is not to be developed at present, but will be included in the aggregate of about 40,000 acres which it is expected to have in pasture by July 1, 1918.

The preparation of the pasture land involves clearing off the jungle, with the exception of a proportion of desirable shade trees, and then burning over the area. At the beginning of the rainy season guinea grass seed will be sown in sections which have not already a satisfactory stand of grass.

#### Extensive Fill by Pipeline Dredge at Paraiso.

The fill being made by pipeline suction dredge in the hollow at Paraiso, between the railroad station and the main line of the Panama Railroad above Pedro Miguel, is to be increased in elevation over the original requirement for drainage, since it has been found to afford a satisfactory means of disposing of dredge spoil, avoiding the long haul to the regular dumping grounds in Gatun Lake. The top elevation under the new plans is to be 118.5 feet above sealevel, which is about two feet below the top of the rails on the track at the Paraiso station. A palisade will be built along a small part of the west side of the area to prevent overflowing on the highway.

As the fill will be about 35 feet deep at the deepest point, is as wide as 300 feet at one point, and extends up the hollow for about 1,000 feet, it will afford disposal for a considerable quantity of spoil. A new discharge line has been laid, to enter the area from its west side, and extend from the Canal on the north side of the swing bridge. This will allow the dredge to work on the side of the bridge toward the slides, and shorten and simplify the haul of spoil from the dredges doing the primary excavation.

#### Seismic Disturbance.

An earthquake which began at 5.09 a. m. and ended at 5:10:20 a. m. on Wednesday, March 29, and was generally felt over the Isthmus had its epicenter of disturbance approximately 64 miles southwest of the observatory at Balboa Heights, according to the records of the seismographs. The maximum amplitude of oscillation was 21.7 millimeters. The intensity was III on the scale of I to X.

On account of its relative nearness and sharpness the shock was felt more generally than most of the disturbances on the Isthmus.

## EXECUTIVE ORDER.

### Passports of American Citizens.

The Secretary of the Treasury is hereby authorized to direct customs officers at ports of entry into the United States to take up passports of American citizens returning to this country. Passports which are not to be used again may be canceled and returned to the owners. Passports which are to be used again should be sent to the Department of State, and the owners informed that they should notify the Department of State, at least five days before they expect to leave this country again, as to the port, name of vessel, and date of sailing. If such a person expects to go abroad for an object not mentioned in his passport, or to visit a country not named therein, he should make application in the usual way for a new passport.

WOODROW WILSON.

THE WHITE HOUSE,

March 13, 1916.

[No. 2341.]

### Library Bulletins.

Inasmuch as the bulletins of the Canal library are issued from a mimeograph and distributed to the principal offices on the Isthmus it has been decided to omit the complete bulletins from THE CANAL RECORD. The nine bulletins which have been published have given the employees an idea of the scope of the service of the library, and those interested in specific subjects may make inquiries of the library as to data available on these subjects. Inquiries may be made by telephone, calling Balboa 224.

### Copies of the Supplement Containing Article on Slides.

The Washington office of The Panama Canal has on hand approximately 1,250 copies of the article on "Slides at Panama," written by the Governor under date of November 15, 1915, and published in Washington as a supplement to THE CANAL RECORD of January 5, 1916. Applications for copies may be addressed to the Chief of Office, The Panama Canal, Washington, D. C. This supplement was distributed at the time of publication to the subscribers who receive their papers from the Washington office, and will be included in the bound volumes for the current year.

The article covers 16½ pages, amply illustrated by photographs, and was designed to embody a brief but comprehensive treatment of the nature and development of the slides in the Cut, and of the means of coping with them, with particular comment on the slides at Culebra which have caused the suspension of traffic through the Canal.

The houseboat *Gen. Elwell S. Otis*, which is to be used in a topographic survey of areas adjacent to Gatun Lake, was transferred from the French canal near Mount Hope to the concrete wharf at Gatun on Saturday, March 25. The boat was constructed of new material at the Cristobal dry dock shops several months ago.

The steamship *Coya* of the New York and Pacific Steamship Company, which arrived at Balboa docks in the morning of March 20, from Iquique and Tocopilla, completed the discharge of 4,298 tons of nitrates and general cargo for transshipment over the Panama Railroad and cleared light on March 27.

## OFFICIAL CIRCULARS.

### Retention of Quarters.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., March 18, 1916.

CIRCULAR NO. 627-13:

Family quarters may be held during the absence of the employee to whom assigned, or his family, or both simultaneously, for two distinct periods in any service year, not to exceed a total of 120 days for both periods or 90 days for one period. Employees in arranging leaves of absence for themselves, or vacations for their families, must be governed accordingly. The two periods can not be taken advantage of continuously or allowed to lap each other, either during the absence of both employee and family at the same time or of either separately. The two periods must be regarded as entirely separate and distinct, and the quarters must be reoccupied both by the employee and his family after the first period of absence before they can be vacated, without forfeiture, for the second period of absence.

CHESTER HARDING,  
Acting Governor.

### Charges for Crushed Stone and Screenings.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., March 23, 1916.

CIRCULAR NO. 711:

1. Effective April 1, 1916, the following rates will be charged for crushed stone and screenings:  
To individuals and companies, \$3 per cubic yard;  
To employees, branches of the United States Government, and others entitled to cost prices, \$2.50 per cubic yard.

2. These rates include delivery at the nearest railroad station.

CHESTER HARDING,  
Acting Governor.

### Minimum Charge for Metered Electric Current.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., March 15, 1916.

CIRCULAR NO. 676-7:

Effective at once, the minimum charge for metered electric current will be 30 cents per month.

CHESTER HARDING,  
Acting Governor.

### Appointment.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., March 17, 1916.

CIRCULAR NO. 661-26:

Maj. Earl I. Brown, Corps of Engineers, U. S. Army, was designated as General Purchasing Officer, Purchasing Department, and Chief of Office, Washington Office of The Panama Canal, on March 10, 1916, succeeding Maj. F. C. Boggs, Corps of Engineers, U. S. Army, relieved from duty with The Panama Canal.

CHESTER HARDING,  
Acting Governor.

### In Charge of Work on East Breakwater.

THE PANAMA CANAL,

DEPT. OF OPERATION AND MAINTENANCE,

BALBOA HEIGHTS, C. Z., March 23, 1916.

To all concerned—Effective March 27 and until Superintendent C. C. Suedeler returns from leave, General Foreman Arman Smith will be in local charge of all outside work, and Mr. M. J. Driscoll will be in charge of all office work at Coco Solo, connected with the East Breakwater.

CHESTER HARDING,  
Acting Governor.

### Accountable Official.

THE PANAMA CANAL,

ACCOUNTING DEPARTMENT,

BALBOA HEIGHTS, C. Z., March 23, 1916.

CIRCULAR NO. 118:

Mr. C. A. McIlvaine is hereby designated an accountable official of the Panama Railroad Company, and as such will account for the property of that company in the Administration Building.

H. A. A. SMITH,

Approved: Auditor, The Panama Canal.  
CHESTER HARDING,  
Acting Governor.

### Acting General Storekeeper.

THE PANAMA CANAL,

SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., March 20, 1916.

To all concerned—Effective March 23, 1916, and during the absence of Mr. R. K. Morris, General Storekeeper, on his vacation, Mr. M. D. Smith will perform



the duties of the General Storekeeper of the Supply Department of The Panama Canal.

Approved:   
 CHESTER HARDING,   
 Acting Governor.

WM. R. GROVE,   
 Chief Quartermaster.

### First Aid Supplies.

THE PANAMA CANAL,   
 HEALTH DEPARTMENT,   
 BALBOA HEIGHTS, C. Z., March 23, 1916.   
 To all concerned—In order to standardize issues of first aid supplies, the following list, suitable for 10 men for 10 days, will govern in issuing these supplies to shops, field parties, etc:

#### FOR SHOPS.

- 30 c. c. tr. iodine.
- 5 first aid packets.
- 500 c. c. carron oil.
- 2 meters gauze, absorbent.
- 100 gm. cotton, absorbent.
- 10 bandages, gauze, roller.
- 1 dozen pins, safety, No. 3.
- 60 c. c. ammonia, aromatic spirits.

#### FOR FIELD.

Same as for shops, and also:   
 250 gms. magnesium sulphate.   
 20 compound cathartic pills.   
 200 capsules quinine (.325 gm. each).   
 60 gms. dhoibic itch ointment.   
 60 gms. boric acid ointment.   
 1 spoon, plaster, adhesive, 2" wide.   
 The above unit may be multiplied or divided, as the number of men or days is increased or decreased.   
 Men needing other supplies should be sent to the nearest life dispensary or hospital.   
 On the return of field parties, their unused supplies should be immediately turned in to the medical storehouse.

CHAS. F. MASON,   
 Chief Health Officer.

### The "Ancon" to Carry First Class Passengers.

PANAMA RAILROAD COMPANY,   
 OFFICE OF SUPERINTENDENT,   
 BALBOA HEIGHTS, C. Z., March 24, 1916.   
 CIRCULAR NO. 328:

To all concerned—The steamship *Ancon* will carry first class passengers only on this voyage to New York. The exact date of sailing will be determined later.

C. H. MOTSETT,   
 Superintendent.

### Cars with Leaky Roofs.

PANAMA RAILROAD COMPANY,   
 OFFICE OF MASTER OF TRANSPORTATION,   
 BALBOA HEIGHTS, C. Z., March 14, 1916.   
 CIRCULAR NO. 317:

To all concerned—The following box cars have been stenciled "Leaky roof" and should not be loaded with any material liable to damage by water: 6222; 6072; and 8347.

S. W. HEALD,   
 Master of Transportation.

Approved:   
 C. H. MOTSETT,   
 Superintendent.

### Tagging Cars of Rubbish Sent to Dump.

PANAMA RAILROAD COMPANY,   
 OFFICE OF SUPERINTENDENT,   
 BALBOA HEIGHTS, C. Z., March 23, 1916.   
 CIRCULAR NO. 327:

To heads of Departments—Some time ago circular was issued from this office requesting all departments sending rubbish to the dumps to properly tag cars in order that the cost of unloading could be billed against the division for whom the work was performed.

Various cars are now being sent to Dump 6 without tags and it is therefore impossible to make proper distribution of charges for our unloading gang.   
 Will you kindly get in touch with your foremen and direct them to tag all cars sent to the dump, showing division forwarding in order that bills may be rendered at the close of each month for the expense incurred?

C. H. MOTSETT,   
 Superintendent.

### Radio Operators.

The Radio Officer, Canal Zone, desires to communicate with all American citizens in this vicinity who are amateur or professional radio operators and who might be expected to volunteer their services to the United States Government in the event of war. Address: Lieutenant E. C. Raguet, U. S. Navy, Naval Radio Station, Darien, C. Z.

## COMMISSARY DEPARTMENT.

### Oil Stoves.

THE PANAMA CANAL,   
 SUPPLY DEPARTMENT,   
 CRISTOBAL, C. Z., March 23, 1916.

#### BULLETIN NO. 606:

To commissary managers—We are carrying in stock a limited number of the New Perfection oil stove, No. 7, which retails at \$32.40.

This stove will not be displayed at stores other than Balboa and in the office of the Depot Commissary, Cristobal. Please advise your patrons that an inspection may be made at either of the above places, and if a purchase is made the stove will be shipped to the customer's place of residence.

Efforts are being made to obtain a cut of this stove and will be sent to you as soon as received in order that you can properly advertise the stove.

BENJ. L. JACOBSON,   
 Depot Commissary.

### Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective March 30 and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of February 2, 1916, covering five pages. Copies of this list may be obtained on application, from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions will be effective March 30, 1916.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to vessels:

#### FRESH BEEF.

	Price.
Beef, suet, special, per lb.	\$.03 1/2
Beef suet, native, per lb.	.03 1/2
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.05
Soup bone, special, per lb.	.02 1/2
Soup bone, native, per lb.	.02 1/2
Stew beef, native, per lb.	.08
Plate beef, native, per lb.	.08
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (3 lbs. up), special, per lb.	.16
Rib roast, 2d cut (3 lbs. up), native, per lb.	.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Pot roast, special, per lb.	.20
Pot roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse steak, choice, per lb.	.31
Porterhouse roast, special, per lb.	.22
Porterhouse roast, native, per lb.	.16
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.12
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	.34
Porterhouse steak (1 1/2 lbs. up), special, per lb.	.23
Porterhouse steak (1 1/2 lbs. up), native, per lb.	.17
Rump steak, short, choice, per lb.	.28
Porterhouse steak, short, special, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25
Tenderloin steak, western, special, per lb.	.30
Rib steak, native, per lb.	.11

#### FRESH MEATS.

Lamb, chops, per lb.	.29
Lamb, chops, shoulder, per lb.	.20
Lamb, leg, 5 to 8 lbs., per lb.	.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.15
Lamb, stewing, per lb.	.12
Mutton, chops, short cut, per lb.	.23
Mutton, chops, shoulder, per lb.	.17
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.09

Pork, hams, fresh (see footnote), per lb.	Price. .25 1/2
Pork, loins, chops, or roast, per lb.	.19
Pork, shoulders, fresh (see footnote), per lb.	.20 1/2
Veal, chops, per lb.	.36
Veal, chops, shoulder, per lb.	.24
Veal, cutlets, per lb.	.41
Veal, loin for roasting, per lb.	.36
Veal, shoulder for roasting not under, 4 lbs., per lb.	.18
Veal, stewing, per lb.	.15

#### MISCELLANEOUS.

Beef, fresh, per lb.	.12
Calf's head, fresh, per lb.	.07
Calves' head, ca.	.78
Kidneys, beef, per lb.	.10
Livers, beef, per lb.	.08
Livers, calves', per lb.	.08
Pates de foie gras, jar.	.55
Pigs' feet, fresh, per lb.	.05
Pigs' heads, fresh, whole, ca.	.83
Pigs' heads, fresh, 1/2 head, half.	.22
Sausage, bologna, per lb.	.19 1/2
Sausage, frankfurter, per lb.	.18
Sausage, leberwurst, per lb.	.19 1/2
Sausage, pork, per lb.	.23
Sausage, pork, homemade, per lb.	.24
Sausage, Salami, per lb.	.36
Spare ribs, pork, per lb.	.15
Steak, hamburger, plain, per lb.	.17
Steak, hamburger, 20-pound container, per lb.	.14
Sweetbread, beef, per lb.	.21
Tails, ox, per lb.	.09
Tongue, beef, native, whole, per lb.	.20
Yeast, per lb.	.31
Yeast, cake.	.02

#### CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.28
Bacon, breakfast, sliced, per lb.	.29
Bacon, sliced, jar.	.29
Bacon, sliced, tin.	.28
Bacon, strips, whole strip.	.20
Beef, salt, per lb.	.09
Beef, corned—No. 2, 20 lb. can.	.12
Ham, genuine Westphalia, per lb.	.10
Ham, minced, "Bologna style", per lb.	.21
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	.17
1. Ham, sugar cured (whole) per lb.	.25 1/2
2. Ham, sugar cured (half) per lb.	.28 1/2
3. Ham, sugar cured (sliced) per lb.	.33 1/2
1. Ham, sugar cured (sliced) per lb.	.33
2. Ham, sugar cured (boiled) (half) per lb.	.46
3. Ham, sugar cured, boiled (sliced) per lb.	.41
Ham, special, per lb.	.40
Pigs' feet, pickled, per lb.	.06
Pork, bellies, per lb.	.18
Pork, clear, per lb.	.12
Pork, standard mess, per lb.	.13
Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs'.	.22

#### POULTRY AND GAME.

Broilers, corn fed, per lb.	.32
Broilers, milk fed, per lb.	.35
Capons, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.21
Chickens, fancy roasting, milk fed, per lb.	.22
Ducklings, per lb.	.26
Fowls, light, per lb.	.23
Fowls, western, dry picked, per lb.	.25
Geese, per lb.	.33
Grouse, ea.	.60
Squabs, ea.	.45
Turkeys, per lb.	.37

#### DAIRY PRODUCTS.

Butter, creamery special, per lb.	.50 1/2
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.49 1/2
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, ea.	1.50
Cheese, Edam, tin.	.43
Cheese, Gouda, per lb.	.43
Cheese, Parmesan, per lb.	.43
Cheese, Philadelphia cream, cake.	.09
Cheese, Philadelphia, per lb.	.67
Cheese, snappy, cake.	.67
Cheese, Swiss, per lb.	.48 1/2
Cheese, Young America, per lb.	.26
Cream, 30 per cent, qt.	.17 1/2
Cream, 30 per cent, qt.	.17 1/2
Cream, 30 per cent, qt.	.52 1/2
Eggs, fresh, per doz.	.33 1/2
Eggs, fresh, 1/2 doz. only.	.17 1/2
Ice-cream, bottle.	.13
Ice cream, (see footnote) qt.	.25 1/2
Ice cream, (see footnote) 1 gal.	.50 1/2
Milk, Sheffield farms, qt.	.15 1/2
Oilcarmarine, per lb.	.29

#### FISH.

Bluefish, fresh, per lb.	.27
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.09
Halibut, fresh, per lb.	.12
Herring, smoked, per lb.	.13
Oysters, fresh, per qt.	.44
Salmon, fresh, per lb.	.14 1/2
Whitefish, smoked, per lb.	.32

#### VEGETABLES.

Beans, string, per lb.	.10
Beets, per lb.	.02 1/2
Beets, new, per lb.	.07
Cabbage, per lb.	.02
Corn, per lb.	.02
Celery, per head.	.09 1/2
Chocho, each.	.02

## SHIPPING INFORMATION.

MAY.

**Tide Predictions, Port of Balboa.**  
Panama (Balboa) tide predictions for the next six weeks are given in this table:

MARCH.				
DATE.	Time and height of high and low water.			
Wed., March 29....	5:59 2.7	12:19 13.3	18:32 3.0	.....
Thurs., March 30....	0:48 13.2	7:05 2.1	13:22 14.1	19:37 2.0
Fri., March 31....	1:49 14.0	8:03 1.2	14:15 15.0	20:31 1.0

APRIL.				
DATE.	Time and height of high and low water.			
Sat., April 1....	2:40 14.7	8:52 0.5	15:01 15.7	21:18 0.1
Sun., April 2....	3:26 15.2	9:36 0.0	15:43 16.1	22:00 -0.4

Mon., April 3....	4:09 15.5	10:17 -0.1	16:24 16.2	22:39 -0.6
Tues., April 4....	4:50 15.4	10:36 0.1	17:03 15.9	23:16 -0.3
Wed., April 5....	5:29 15.1	11:33 0.6	17:42 15.4	23:53 0.3
Thurs., April 6....	6:07 14.5	12:10 1.4	18:18 14.7	.....

Fri., April 7....	0:30 1.1	6:39 13.8	12:50 2.4	18:55 13.9
Sat., April 8....	1:11 2.1	7:22 12.9	13:32 3.5	19:33 12.9
Sun., April 9....	1:57 3.2	8:04 12.1	14:22 4.4	20:17 12.0
Mon., April 10....	2:51 4.0	8:55 11.3	15:24 5.2	21:12 11.3

Tues., April 11....	3:56 4.6	10:04 10.9	16:35 5.5	22:28 10.9
Wed., April 12....	5:04 4.8	11:27 11.0	17:45 5.2	23:49 11.1
Thurs., April 13....	6:09 4.4	12:31 11.6	18:46 4.4	.....
Fri., April 14....	0:50 11.7	7:06 13.8	13:20 12.6	19:39 3.3

Sat., April 15....	1:39 12.6	7:54 12.9	13:59 13.6	20:24 2.2
Sun., April 16....	2:21 13.5	8:37 13.0	14:38 14.6	21:05 1.0
Mon., April 17....	3:01 14.4	9:18 1.1	15:15 15.5	21:44 0.0
Tues., April 18....	3:41 15.0	9:57 0.5	15:54 16.1	22:23 -0.7

Wed., April 19....	4:23 15.5	10:36 0.0	16:35 16.4	23:02 -1.0
Thurs., April 20....	5:06 15.7	11:17 0.0	17:18 16.4	23:43 -0.9
Fri., April 21....	5:51 15.6	12:00 0.3	18:04 16.1	.....
Sat., April 22....	0:28 -0.4	6:38 15.2	12:36 1.0	18:52 15.4

Sun., April 23....	1:18 0.4	7:29 14.6	13:40 1.8	19:45 14.5
Mon., April 24....	2:15 1.3	8:25 13.9	14:43 2.7	20:45 13.6
Tues., April 25....	3:21 2.2	9:31 13.4	15:55 3.2	21:57 12.8
Wed., April 26....	4:29 2.6	10:47 13.2	17:07 3.2	23:29 12.6

Thurs., April 27....	5:37 2.6	12:00 13.6	18:16 2.8	.....
Fri., April 28....	0:33 12.9	6:41 2.4	13:01 14.1	19:17 2.1
Sat., April 29....	1:32 13.5	7:38 2.0	13:52 14.7	20:10 1.3
Sun., April 30....	2:22 14.0	8:29 1.5	14:36 15.1	20:56 0.6

	Price.
Corn, green, per doz.	.12
Egg plant, per lb.	.08*
Lettuce, per lb.	.12*
Onions, per lb.	.041*
Farsley, per bunch	.04
Peas, per lb.	.031*
Peas, green, per lb.	.08
Plantains, per doz.	.12
Potatoes, new, per lb.	.04
Potatoes, white, per lb.	.03
Potatoes, sweet, American, per lb.	.05
Radishes, per bunch	.04
Squash, per lb.	.03
Tomatoes, per lb.	.07†
Turnips, per lb.	.021*
Yams, per lb.	.03

FRUITS, DRIED.	
Apples, evaporated, per lb.	.10†
Apricots, evaporated, per lb.	.15
Currents, cleaned, pkg.	.15
Figs, dried, 12-oz pkg.	.12
Figs, 2-lb. box.	.35†
Peaches, evaporated, per lb.	.09
Pears, evaporated, per lb.	.11
Pear, citron, per lb.	.20
Peel, lemon, per lb.	.16
Peel, orange, per lb.	.16
Prunes, stewing, per lb.	.11
Raisins, seeded, pkg.	.10
Raisins, table cluster, per lb.	.17

FRUITS, FRESH.	
Apples, fresh, per doz.	.05
Apples, fresh, select, per doz.	.07
Bananas, 8 hands and over, per bunch	.40
Bananas, 6 and 7 hands, per bunch	.28
Bananas, per lb.	.004
Carries, per lb.	.05
Grapes, per lb.	.32
Grapefruit, select, ea.	.07
Grapefruit, tropical, ea.	.033
Lemons, per doz.	.18
Oranges, select, ea.	.04
Oranges, tropical, doz.	.10†
Palmitos, ea.	.24
Pineapples, ea.	.11

\* Indicates advance from preceding list.  
† Indicates five cents allowed for return of bottle.  
‡ Indicates reduction from preceding list.  
§ Sold only from commissaries, no orders taken for delivery.  
|| Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Additions to Stock.

Biscuits, Graham wafers, Sunshine, 10-oz. tin.	\$0.20
Bran, Kellogg's, 1-lb. pkg.	.19
Cigars, Londres, Lady Crescent, ea.	.05
Cigars, Reina Victoria, Lady Crescent, ea.	.05
Cigarettes, Mecca, 20s, pkg.	.08
Cigarettes, Camco, 20s, pkg.	.08
Honey, P. C., 18-oz. bot.	.16
Olives, queen, 10-gal. keg	8.00
Paper, toilet, roll	.09
Peders, black, 20s, pkg.	.05
Sardines in mustard, tin	.04
Suet, tin	.33
Shoes, boys', tennis balls, pr.	1.25
Shoes, men's, engineers', pr.	2.00
Biscuits, dog, carton	.21
Flour, self-raising, 14-lb. tin	.10
Mushrooms, French, tin	.35
Baskets, fruit, small, ea.	.60
Baskets, fruit, large, ea.	.60
Bowls, mixing, enamel, ea.	.40
Cups, drinking, sanitary (5 in box), box	.04
Sauces, after dinner, set	.67
Hinges, butt, brass, 2 x 1 1/2, pr.	.30
Hinges, butt, brass, 2 1/2 x 2 1/2, pr.	.45
Openers, bottle, nickel plated, ea.	.01
Plates, pic, aluminum, ea.	.20
Rods, curtain, with brackets, 4 1/2', ea.	.27
Rods, curtain with brackets, 6', ea.	.41
Spoons, coffee, Grecian, ea.	.21
Shoes, New England, No. 7, ea.	32.00
Bats, cricket, London Club, ea.	.50
Cloth, Palm Beach, blue, yd.	1.00
Cloth, Palm Beach, black, yd.	1.00
Colts, Arrow, soft, ea.	.12
Girdles, corset, ea.	.64
Holders, hair ribbon, ea.	.08
Ribbon, exposition, No. 1, 10-yard, piece	.18
Rouge, hp, jar.	.20
Suiting, check, yd.	2.40
Undershirts, 1-sleeve, ea.	.34

## Schedule of Launch Service to Taboga.

Following the placing of the new gasoline launch Taboga in service, the schedule of launch sailings between Balboa and Taboga Island is as follows:

From Balboa—Daily, launch Taboga leaves for Taboga at 9:45 a. m. and at 5:30 p. m.  
From Taboga—Daily, launch Taboga leaves for Balboa at 10:45 a. m. and at 6:45 p. m. The 10:45 a. m. trip from Taboga may be delayed at times to 2 p. m., under orders given by the Chief Quartermaster, the manager of the Hotel Aspinwall, or the Captain of the Port of Balboa.

On Mondays and days following holidays the launch Aspinwall will be used to supplement the regular daily service, leaving the dredge landing for Taboga at 5 a. m., and returning from Taboga at 6:30 a. m.

DATE.	Time and height of high and low water.			
Mon., May 1.....	3:06 14.4	9:14 1.1	15:17 15.3	21:38 0.2
Tues., May 2.....	3:46 14.6	9:54 0.9	15:56 15.3	22:15 0.0
Wed., May 3.....	4:26 14.6	10:33 1.6	16:34 15.2	22:53 0.2
Thurs., May 4.....	5:05 14.4	11:10 1.3	17:12 14.8	23:28 0.6
Fri., May 5.....	5:42 14.0	11:46 1.9	17:49 14.3	.....
Sat., May 6.....	0:05 1.2	6:19 13.6	12:24 2.6	18:27 13.7
Sun., May 7.....	0:43 2.0	6:57 13.0	13:04 3.4	19:05 13.0
Mon., May 8.....	1:26 2.8	7:37 12.4	13:51 4.2	19:46 12.2
Tues., May 9.....	2:14 3.6	8:22 11.9	14:48 4.8	20:34 11.6
Wed., May 10....	3:10 4.2	9:16 11.5	15:51 5.0	21:34 11.1

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean low level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.  
The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 00 (midnight) to 234 (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, April 5, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same. The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour stated above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, April 7, 1916, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board.  
GEORGE J. VANDERSLICE,  
Recorder, Board of Local Inspectors.

## Coal.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's crew, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., March 26, 1916.)

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
March 25	Albanian	Leyland Line	Liverpool.	March 21	Kilpatrick	U. S. Army transport	New York.
March 25	Coronado	Elders & Fyfe	Port Limon.	March 22	Matador	Harrison Line	Galveston.
March 25	Wisdom (yacht)	Dr. E. Salisbury	San Blas coast.	March 25	Coronado	Elders & Fyfe	Bristol.

## \*DEPARTURES.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
March 30	Niagra	French Line	Bordeaux.	March 30	Albanian	Leyland Line	Unknown.
March 30	.....	.....	.....	March 30	Niagra	French Line	Bordeaux.
March 30	.....	.....	.....	March 30	Wisdom (yacht)	Dr. E. Salisbury	Unknown.

## \*EXPECTED DEPARTURES.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From	Date	Vessel	Line	For
March 19	Coya	N. Y. & Pacific S. S. Co.	Palta & way ports.	March 20	Peru	Pacific Steam Nav. Co.	Valparaiso.
March 20	No. 2 (clapet)	Pinel Brothers	Panama.	March 20	Jamaica	Pacific Steam Nav. Co.	Valparaiso.
March 21	Sommerstad	A. F. Klaveness	San Francisco.	March 20	No. 2 (clapet)	Pinel Brothers	Panama.
March 22	Uruabamba	Peruvian Line	Pisco.	March 22	Peru	Pacific Mail S. S. Co.	San Francisco.
March 22	Huasco	South American S. S. Co.	Talcahuano.	March 23	Lima	International Petroleum Co.	Paita.
March 23	Denver	U. S. Navy cruiser	Corinto.	March 23	Acajutla	Pacific Steam Nav. Co.	Salina Cruz.
March 24	Alicia (motorboat)	Panama Transport Co.	Camp Sabbath.	March 23	Huallaga	Peruvian Line	Callao.
March 25	Alfred Nobel	Dampelsk Concordia	Tocopilla.	March 24	Denver	U. S. Navy cruiser	Corinto.
March 25	Solano	Solano Company	San Francisco.	March 25	Alicia	Panama Transport Co.	Camp Sabbath.
March 25	J. A. Moffett	Standard Oil Company	San Francisco.	.....	.....	.....	.....
March 25	No. 93 (large)	Standard Oil Company	San Francisco.	.....	.....	.....	.....
March 26	Cyprus (yacht)	D. C. Jackling	Salina Cruz.	.....	.....	.....	.....

## DEPARTURES.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
March 27	Salvador	Pacific Steam Nav. Co.	Guayaquil.	March 27	Huasco	South American S. S. Co.	Guayaquil.
March 27	St. Veronica	British & Foreign S. S. Co.	.....	March 27	Canca	Pacific Steam Nav. Co.	Tunaco.
March 27	Centurion	E. Earle	.....	March 27	Cutpipe	Pacific Steam Nav. Co.	Pera and Chile.
March 28	Imperial	South American S. S. Co.	Valparaiso.	March 28	City of Para	Pacific Mail S. S. Co.	Cent. Amer. & Mex.
March 30	Lyman Stewart	Union Oil Co.	Port San Luis.	March 28	J. A. Moffett	Standard Oil Company	Port San Luis.
.....	.....	.....	.....	March 28	No. 91 (large)	Standard Oil Company	Port San Luis.
.....	.....	.....	.....	March 28	Uruabamba	Peruvian Line	Guayaquil.
.....	.....	.....	.....	March 30	San Jose	Pacific Mail S. S. Co.	San Francisco.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., March 28, 1916.

The following insufficiently addressed letters and raters have been received at the office of the Director of Posts and may be procured upon request of the addressees:

*Baird, Graham	Linton, N. K.
Boyer, H. E.	Morgan, Chas.
Breckenridge, E. L. D.	Mavist, Joe
Brown, F. A.	*Marvitz, Joe
Colquet, Lieut.	McKeena, Thos.
Daly, Dave	*Nollan, W. C.
Findley, Norman D.	Parks, Mrs. J. A.
Fritz, William	Smith, Dr. E. H.
Hill, Roy A.	Steiner, Harry A.
Humiston, Stephen	*Thomason, Chas. W.
Korke, Mrs. R.	Wardrup, R. E.
Lewis, Bob	Varbrough, Robert
	Lewis, Elmer

\*Card. †Paper. ‡Photo.

## Rainfall from March 1 to 25, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>			
Balboa	1.1	4	.42
Balboa Heights	.31	8	.89
Miraflores	.16	4	.17
Pedro Miguel	.14	16	.41
Rio Grande	.32	16	.83
<b>Central Section—</b>			
*Culebra	.20	16	.56
*Camacho	.36	8	.84
Empire	.43	8	.84
Gambou	.39	8	.89
*Juan Mina	.36	8	.80
Ahajuela	.13	18	.45
Vigia	.16	19	.44
Frijoles	.60	18	2.01
*Monte Lirio	.83	19	2.66
<b>Atlantic Section—</b>			
Gatun	.69	10	3.09
*Brazos Brook	.50	22	2.48
Colon	.55	10	2.32
Jibocas del Toro	.10	8	3.14

\*Standard rain gage—readings at 5 p. m. daily.  
Automatic rain gage at unstarred stations—values, midnight to midnight.  
†Standard rain gage—readings at 8 a. m. daily.

## Mail Despatches.

Following is the schedule of the despatches of mail to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.  
Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that in the Advance the voyage requires seven days.†  
Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*Note—The sailings on Monday, April 3 and May 1, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the sailings on April 3 and May 1.

†When the vessel sailing Thursday is the Advance, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, March 25, 1916.

DAY AND DATE.	Vigia	Ahajuela	Camboia	Gatun Lake	Miraflores Lake
Sun., Mar. 19	126.00	92.74	36.34	86.32	54.00
Mon., Mar. 20	125.63	92.53	36.37	86.30	53.97
Tues., Mar. 21	125.13	91.90	36.41	86.31	53.09
Wed., Mar. 22	125.63	92.38	36.41	86.33	54.03
Thurs., Mar. 23	125.40	92.22	36.38	86.32	54.01
Fri., Mar. 24	125.05	91.71	36.36	86.29	53.98
Sat., Mar. 25	125.13	92.31	36.37	86.25	54.03

Heights of low water to nearest foot.....125.0 91.0

## Sailings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessels.	Line.	Sails.	Arrives.
Almirante	U. F. C. Mar.	22	Mar. 29
Pastores	U. F. C. Mar.	25	Mar. 29
Calumares	U. F. C. Mar.	29	Apr. 2
Curillo	U. F. C. Mar.	30	Apr. 5
Colon	U. F. C. Apr.	1	Apr. 9
Tenadores	U. F. C. Apr.	5	Apr. 12
Santa Marta	U. F. C. Apr.	8	Apr. 16
Advance	U. F. C. Apr.	13	Apr. 19
Metapan	U. F. C. Apr.	15	Apr. 20
Tenadores	U. F. C. Mar.	27	Apr. 3
Advance	U. F. C. Mar.	30	Apr. 6
Santa Marta	U. F. C. Mar.	30	Apr. 6
Metapan	U. F. C. Apr.	3	Apr. 11
Panama	U. F. C. Apr.	6	Apr. 12
Almirante	U. F. C. Apr.	6	Apr. 12
Pastores	U. F. C. Apr.	10	Apr. 17
Almirante	U. F. C. Apr.	13	Apr. 19
Calumares	U. F. C. Apr.	17	Apr. 24
Curillo	U. F. C. Apr.	20	Apr. 26
Colon	U. F. C. Apr.	20	Apr. 27

## CRISTOBAL-COLON TO NEW ORLEANS.

Vessels.	Line.	Sails.	Arrives.
Almirante	U. F. C. Mar.	22	Mar. 29
Pastores	U. F. C. Mar.	25	Mar. 29
Calumares	U. F. C. Mar.	29	Apr. 2
Curillo	U. F. C. Mar.	30	Apr. 5
Colon	U. F. C. Apr.	1	Apr. 9
Tenadores	U. F. C. Apr.	5	Apr. 12
Santa Marta	U. F. C. Apr.	8	Apr. 16
Advance	U. F. C. Apr.	13	Apr. 19
Metapan	U. F. C. Apr.	15	Apr. 20
Tenadores	U. F. C. Mar.	27	Apr. 3
Advance	U. F. C. Mar.	30	Apr. 6
Santa Marta	U. F. C. Mar.	30	Apr. 6
Metapan	U. F. C. Apr.	3	Apr. 11
Panama	U. F. C. Apr.	6	Apr. 12
Almirante	U. F. C. Apr.	6	Apr. 12
Pastores	U. F. C. Apr.	10	Apr. 17
Almirante	U. F. C. Apr.	13	Apr. 19
Calumares	U. F. C. Apr.	17	Apr. 24
Curillo	U. F. C. Apr.	20	Apr. 26
Colon	U. F. C. Apr.	20	Apr. 27

## NEW ORLEANS TO CRISTOBAL-COLON.

Vessels.	Line.	Sails.	Arrives.
Almirante	U. F. C. Mar.	22	Mar. 29
Pastores	U. F. C. Mar.	25	Mar. 29
Calumares	U. F. C. Mar.	29	Apr. 2
Curillo	U. F. C. Mar.	30	Apr. 5
Colon	U. F. C. Apr.	1	Apr. 9
Tenadores	U. F. C. Apr.	5	Apr. 12
Santa Marta	U. F. C. Apr.	8	Apr. 16
Advance	U. F. C. Apr.	13	Apr. 19
Metapan	U. F. C. Apr.	15	Apr. 20
Tenadores	U. F. C. Mar.	27	Apr. 3
Advance	U. F. C. Mar.	30	Apr. 6
Santa Marta	U. F. C. Mar.	30	Apr. 6
Metapan	U. F. C. Apr.	3	Apr. 11
Panama	U. F. C. Apr.	6	Apr. 12
Almirante	U. F. C. Apr.	6	Apr. 12
Pastores	U. F. C. Apr.	10	Apr. 17
Almirante	U. F. C. Apr.	13	Apr. 19
Calumares	U. F. C. Apr.	17	Apr. 24
Curillo	U. F. C. Apr.	20	Apr. 26
Colon	U. F. C. Apr.	20	Apr. 27

## CRISTOBAL-COLON TO NEW ORLEANS.

Vessels.	Line.	Sails.	Arrives.
Almirante	U. F. C. Mar.	22	Mar. 29
Pastores	U. F. C. Mar.	25	Mar. 29
Calumares	U. F. C. Mar.	29	Apr. 2
Curillo	U. F. C. Mar.	30	Apr. 5
Colon	U. F. C. Apr.	1	Apr. 9
Tenadores	U. F. C. Apr.	5	Apr. 12
Santa Marta	U. F. C. Apr.	8	Apr. 16
Advance	U. F. C. Apr.	13	Apr. 19
Metapan	U. F. C. Apr.	15	Apr. 20
Tenadores	U. F. C. Mar.	27	Apr. 3
Advance	U. F. C. Mar.	30	Apr. 6
Santa Marta	U. F. C. Mar.	30	Apr. 6
Metapan	U. F. C. Apr.	3	Apr. 11
Panama	U. F. C. Apr.	6	Apr. 12
Almirante	U. F. C. Apr.	6	Apr. 12
Pastores	U. F. C. Apr.	10	Apr. 17
Almirante	U. F. C. Apr.	13	Apr. 19
Calumares	U. F. C. Apr.	17	Apr. 24
Curillo	U. F. C. Apr.	20	Apr. 26
Colon	U. F. C. Apr.	20	Apr. 27





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

For delivery in other countries, to which the paper must be forwarded under foreign postal rates, a charge of 50 cents is added for postage, making the subscription \$1.50 per year.

Yearly subscriptions are entered as beginning at the first of the quarter of the year in which received, and expire at the beginning of the corresponding quarter of the following year. When subscriptions are received after the beginning of a quarter the back numbers which have been issued during that quarter will be furnished when available.

The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

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Address all Communications,

THE CANAL RECORD

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, April 3 amounted to 269,865 cubic yards. In addition an aggregate of 33,706 cubic yards was rehandled by the seagoing suction dredge Culebra, and the Belgian ladder dredge No. 5.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.	15-yard dipper.	46,790
Gambou.	15-yard dipper.	71,430
Paraiso.	15-yard dipper.	11,975
Corosal.	Ladder.	35,610
No. 83.	Pipeline suction.	11,050
Culebra.	Seagoing suction.	27,731
No. 86.	Pipeline suction.	33,000
No. 5.	Belgian ladder.	5,975

The average aggregate output of the dredges during the 23 weeks preceding that ending midnight of Monday, April 3 was 257,777 cubic yards, the total amount of primary excavation during that period (since October 19) having been 5,928,877 cubic yards.

This has been an average of 36,825 cubic yards for each of the 161 days.

#### Progress of Work on Coaling Plants.

Tests have been in progress for the past month on the four unloaders at the Cristobal coaling plant furnished by the Hunt Construction Company. All of the coal handling and other tests have been completed, with the exception of the demonstration of the track travel at the contract speed.

The contractor still has to make certain ad-

justments and modifications in detail, which work will be proceeded with simultaneously with the breaking in of the operating force.

The remainder of the coal handling machinery at the Cristobal coaling plant, being furnished by Augustus Smith, is nearing completion, and it is expected that the official acceptance tests may begin about May 1. This part of the work includes the large stocking and reclaiming bridges, bridge diggers, reloaders, and the conveying system, which latter consists of 10-ton coal cars running on a viaduct 29 feet 6 inches above the wharf level.

At the Balboa coaling plant, the contractor has offered the two unloaders for the official acceptance tests. These however, cannot be undertaken until the entrance basin has been flooded and sufficient of the colliery removed to enable colliers or barges to be placed alongside the unloading wharf, and the date on which removal of the colliery will be commenced is dependent on the ability of the Dredging Division to furnish a dredge and accessory equipment for this purpose.

The work on the contract at the Balboa coaling plant, including the conveying system and reloaders, is progressing more rapidly since the substructures and wharves have been brought more nearly to a state of completion by The Panama Canal. The foundations at the intersection of the unloader and reloader wharves were built under especially trying conditions, but the greater difficulties have now been overcome. While it is not yet practicable to fix a definite date, it is probable that the acceptance tests of the coal handling machinery under this contract cannot be commenced before July 1.

#### Tie Up Stations near the Slides.

Tie up stations have been established at Paraiso and at Empire, on either side of the slide area, at which ships may tie up to wait for passage past the slides during the period when the canal will be open only at certain hours during the day. Concrete bollards have been erected on the bank at these stations for ships' lines, and mooring floats along the banks will protect ships' sides from bumping.

#### Pier No. 18, Pacific Terminals, In Service.

Pier No. 18 of the Pacific Terminals was placed in service on April 1, and at noon the ship *Manitara* went into the dock and began to work its cargo with ship's tackle. On April 3, the *Manitara* also docked at the pier. The use of this pier and dock will facilitate the moving of cargo at the Pacific terminals, by making possible a quick transfer of cargo from cars to the pier, thus releasing cars that otherwise would be held for unloading, and by permitting more ships to load and unload. About seventy thousand tons of cargo have been handled over the steel pier at Balboa each month since the congestion began. It is expected that the opening of the new dock will increase the

handling capacity by from thirty thousand to sixty thousand tons a month.

#### Awaiting Transit.

The following vessels are at the Pacific entrance awaiting transit through the Canal: *Crown of Seville*, Crown Steamship Co., from Seattle to London; *Harry Luckenbach*, Luckenbach Steamship Co., from San Francisco to New York; *Sommerstad*, Klavensess Dampskibs Akties, from San Francisco to Norfolk; *Alfred Nobel*, Concordia Steamship Co., from Tocapilla to Colon; *St. Veronica*, British & Foreign Steamship Co., from Astoria to Plymouth; *Celriana*, W. Eadie, from San Francisco to Colon; *Edith*, Luckenbach Steamship Company, from San Francisco to Colon; *Copenhagen*, Glasgow Shipowners' Co., from Iquique to Colon; *Florence Luckenbach*, Luckenbach Steamship Company, from Iquique to Colon.

At the Atlantic entrance, the *Louis Luckenbach*, *Jacob Luckenbach*, *Windber*, and *Oleric* await transit.

#### Record Day on Slide Excavation.

A new record on excavation from the slides at Culebra was made on March 29, when 45,325 cubic yards of material were removed in the 24 hours ending at midnight. The performance of the dredges was as follows:

	Cu. yds.
Cascadas.	9,250
Gambou.	13,200
Paraiso.	11,045
Corosal.	5,335
No. 83.	1,075
No. 86.	5,420
Total.	45,325

#### March Report—Dredging Division.

GAillard CUT			
	Cu. yds.	Cu. yds.	
Cascadas.	9,250	309,125	
Gambou.	13,200	304,066	
Paraiso.	11,045	299,155	
Corosal.	5,335	158,680	
No. 83.	1,075	36,625	
Total.	45,325	1,142,834	
REHANDLED			
Culebra.	125,550	7,316	
No. 86.	35,680	27,927	
No. 5.	39,145		
Total.	223,38	1,142,834	
PACIFIC SECTION			
No. 85, inner harbor.		127,587	
COLON SECTION			
No. 4, Canal Solo.		65,131	
No. 84, West side coaling station.		1,420	
Marmol, approach channel.		7,085	
Marmol, coaling station.		27,414	
Total Colon section.		113,850	
SAND SERVICE			
No. 1, Chagres River.		55,535	
No. 82, Chagres River.		8,400	
Total Chagres River.		63,935	
Gravel total (less rehandled).		1,359,271	
Rehandled.		223,384	
Total.		1,602,655	
Sand and Gravel.		63,935	
Grand total.		1,666,590	

# TERMINAL OFFICE BUILDING.

To House Port Captain's, Panama Railroad, and Steamship Line Offices at Balboa.

The new Pacific terminal office building under construction at the head of the slip between the quay wall and pier No. 18 at Balboa will house offices for the force of the Captain of the Port and for the receiving and forwarding agent of the Panama Railroad, and 15 office rooms, available for rent to steamship lines or other maritime interests.

The building, as shown in the accompanying drawing of the front elevation, will be three stories in height. The front will lie toward Balboa Heights, and the rear toward the Canal. There will be porches at all three floors along the front of the building and at the ends, but

adjacent private offices. The right half will contain, on one side of the corridor, four offices; on the other, three office rooms and a toilet. The offices of the receiving and forwarding agent are now in a frame building at the land end of the old steel pier. This building and the adjacent frame structures used for steamship offices are to be removed after the offices shall have been transferred to the new building.

The second floor of the new building will contain the 15 office rooms, flanking the single lengthwise corridor, to be rented to steamship companies or other maritime interests. Twelve of these rooms will be 16 feet in length by 13 feet nine inches in width; one, having the same width, will be 18 feet six inches in

Port Captain will have a private office, 16 feet in length; and an adjoining office, 23 feet in length, will be used by the assistant port captain and the dispatching clerk. These will be on the left half; on the right half will be the offices for hydrographers and the deputy inspector, a 16-foot room for the admeasurers, and a room 10 feet six inches by 13 feet nine inches for stenographers; and across the corridor, accommodations for pilots. The pilots will have a lounging room, 32 feet long, and two dormitory rooms, 16 feet and 10 feet six inches in length, respectively, by 13 feet nine inches in width, and a bath room.

The building will have a height of 40 feet eight inches to the eaves, or 54 feet to the top of the ridge of the roof. It will be finished in



FRONT (LAND) ELEVATION OF PACIFIC TERMINAL OFFICE BUILDING.

at the rear the doors and windows will give directly onto the fill behind the wharf at the head of the slip, with no porch intervening.

Communication between floors will be by means of stairs on the end porches. Each floor will have a lengthwise corridor, four feet eight inches wide, and the ground floor will have, in addition, a transverse hall, eight feet in width, leading directly through the building. The length of the building will be 147 feet eight inches, and its width, 42 feet eight inches. The construction will be of reinforced concrete.

The first floor will be used for the offices of the receiving and forwarding agent of the Panama Railroad. The entire left half will be occupied by one large office room, and two

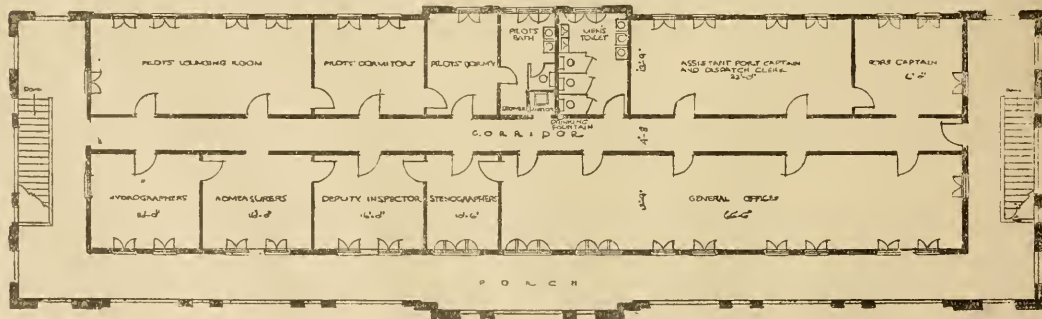
length; and two will have plan measurements of 10 feet six inches by 13 feet nine inches. Access to all of these office rooms will be had by means of the lengthwise corridor, and all of them will have windows opening onto the porches or the open air.

The third floor will be used for the offices of the Captain of the Port, hydrographers, and the deputy inspector of customs. The deputy inspector will have one room, 16 feet in length by 13 feet nine inches wide, and a similar room will be devoted to the uses of hydrographers. The remainder of the floor will be used for offices for the Port Captain, and accommodations for pilots. A general office and file room will occupy space 66 feet long by 13 feet nine inches in width; the

a style to harmonize with the pier head. Like the office building of Balboa shops, adjoining the location of the terminal building, it will have porches with arches on the first story, and columns on the two upper stories. It will have tiled corridors and a red tile roof. A cold water system carrying drinking water to the three corridors will be one of the features. Between the arch piers on the ground level will be suspended a  $\frac{3}{8}$ -inch steel chain, painted green, to take the place of a rail; this touch is appropriate to the maritime uses of the building.

A terminal office building for Cristobal essentially the same as this, but with verandas on all sides, has been authorized for construction near the entrance to the new piers.

## CANAL SIDE



PLAN OF THIRD FLOOR (PORT CAPTAIN'S FLOOR) OF PACIFIC TERMINAL OFFICE BUILDING.



## INSPECTION OF FOOD ANIMALS.

## Circular Letter to All Concerned in the Importation of Cattle into the Canal Zone.

In step with the increased importation of cattle into the Canal Zone, for stocking the reserve pastures which are being provided by the commissary branch of the Supply Department and for slaughter in the abattoir of the The Panama Canal at Cristobal, the Chief Quarantine Officer, with the approval of the Chief Health Officer, has issued the following circular letter to shippers, transportation companies, and others concerned, calling attention to the provisions for inspection of food animals and giving directions for the easiest compliance with the requirements.

Practically all the cattle coming into the Canal Zone at present are those shipped from Central America and Colombia to Cristobal for the Supply Department. The discovery of anthrax in some of these led to the issuance of circular No. 700, referred to below, proclaiming the regulations provided by the laws of the Canal Zone. The provisions for quarantine inspection will apply, however, to blooded cattle shipped from the United States or Europe, crossing the Isthmus on the way to west coast countries, or food animals entering the Canal Zone in any other traffic. The restrictions on animals in transit are in keeping with the general efforts of the United States Department of Agriculture to prevent the spread of anthrax, rinderpest, and foot-and-mouth disease.

The circular letter of the Chief Quarantine Officer follows:

THE PANAMA CANAL,  
HEALTH DEPARTMENT,  
BALBOA HEIGHTS, C. Z., March 8, 1916.

To shippers, transportation companies, and others concerned—1. Circular No. 700 ("Inspection of Cattle and other Food Animals") issued by the Acting Governor on June 1, 1915, requires the inspection by a veterinary inspector of the Health Department of all cattle, calves, hogs, sheep, goats, and other food animals imported into, or offered for sale as food in the Canal Zone, and any such animal found in a manner dangerous to other animals, or any carcass held or offered for food, found to be unfit, shall be condemned and destroyed, and the owner of such diseased animal or unfit food shall not be compensated therefor.

2. This circular was issued in accordance with Sections 276 and 277 of the Penal Code of the Canal Zone, which provides that every person who brings into the Canal Zone any of the above described animals after the Governor has made proclamation holding in quarantine for the purpose of inspection for contagious or infectious diseases such animals, and allows the same or any of them to leave the place of their first arrival in the Canal Zone until they have been properly examined and a certificate obtained that such animals are free from disease, or permits any such animals to run at large or to be removed or to escape before such certificate has been received, is punishable by a fine not exceeding \$500. Section 277 provides also that "Every person who, after publication of such proclamation, knowingly receives or transports within the limits of the Canal Zone any animal mentioned in the preceding section before the certificate mentioned therein has been given, is punishable by a fine not exceeding \$2,000."

3. The veterinary inspection above required will be charged for at the following rates:  
Beef cattle, ante and post mortem inspection..... \$0.50  
Beef cattle, quarantine inspection..... .25  
Pigs, calves, goats, and sheep (any inspection)..... .25

These rates are for animals inspected in lots of 10 or more. The rates for single animals, or for lots of less than 10, are twice as great.

4. In order to avoid delays, applications for veterinary inspections should be made a sufficient length of time in advance, and should be addressed to the Veterinary Inspector, Health Department, Quarantine Office, Cristobal, C. Z., or by phone to the above office or to the Health Department veterinarian at the Cristobal slaughter house.

The local Panama Railroad agents at Panama or Colon will also be able to make arrangements through their offices for the handling of shipments tendered.

M. C. GUTHRIE, Chief Quarantine Officer.

## Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Henry Ellis.....	64438	Jamaica.....	Panama.....	P. R. R.....	March 30, 1916
Spencer Jones.....	612	U. S. A.....	La Boca.....	Mechanical Div.	March 27, 1916

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## No Malaria Cases Last Week.

No admissions of employees on the Canal Zone to sick report on account of malaria were recorded last week, the first week in the history of the American occupation that this condition has attained. The cities of Panama and Colon are not included in this report. Comparative statistics showing the rate per thousand employees reported ill with malaria from 1906 to 1915, by years are as follows:

	Per thousand
1906.....	421
1907.....	424
1908.....	282
1909.....	215
1910.....	187
1911.....	184
1912.....	110
1913.....	76
1914.....	65
1915.....	45.18

## Reunion of The Incas.

The Incas will hold their annual dinner on Saturday, May 6, at the University Club, Panama. Since the organization of this society, which is composed exclusively of employees and exemployees whose service on the Panama Canal or Panama Railroad began during the year 1904, or previous thereto, it has been customary to hold an annual dinner in commemoration of the date on which the French canal company made formal transfer of its properties to the United States Government, May 4, 1904. It is quite probable that the Secretary's list does not contain the addresses of all the members, and in the event that any member does not receive an invitation, he should immediately communicate with J. J. Moran, Secretary, Ancon.

## Neutrality—Germany and Portugal.

A proclamation made by the President of the United States on March 13, 1916, enjoins neutrality in the war between Germany and Portugal.

## Marble Tops for Cold Storage Counters.

Marble tops are to be placed on the cold storage counters in the commissary stores at Ancon, Corozal, Pedro Miguel, Culebra, Empire, Gatun, and Cristobal, similar to the slabs which are already installed at the Balboa store. Experiments were made in the use of oil cloth on these counters, but it has not been found satisfactory. Slabs of Vermont marble, 1½ inches thick, will be used. The cold storage counters average about 20 feet in length by two feet 10 inches in width, and the marble costs approximately \$1 per square foot, delivered on the Isthmus.

## Restriction of Passenger Accommodations on Panama Railroad Ships.

Since the passage of the "Seaman's Bill," so called, ships carrying less than 1,600 passengers are not allowed to use life rafts, but must provide life boats for all passengers.

Heretofore the Panama Railroad ships have been provided with boats and rafts, and it now becomes necessary to restrict the number of passengers carried to the number of life boats that can be provided. New boats have been ordered, but it is not expected that they can be installed before July or August. Consequently, just at the time when vacations are being taken by large numbers of employees, the number of passengers that can be accommodated must be cut down. Employees who anticipate spending their vacation in the States should bear this in mind, and should arrange return transportation as soon as possible after their arrival in the States. It is possible that it may be necessary to deny requests for reduced rates for others than dependent members of employees' families residing with them on the Isthmus; but this will be decided later.

## Advance in Steamship Freight Rates.

On March 1, the United Fruit Company issued a new tariff effective March 15, increasing freight rates between New York and Colon twenty-five per cent, and on March 8 issued a notice applying this advance to Panama. The Panama Railroad Steamship Line issued Freight Classification and Tariff No. 17 on March 20, effective April 20, providing for an increase of 20 per cent in rates between New York and Colon.

Dry season work on the Panama Railroad right of way has been confined to maintenance and repair. A force of about four hundred men has been kept busy. Ballasting has required about 25,000 cubic yards of gravel. Five thousand creosoted and 5,000 Cuban hardwood ties have been laid.

## Quick Discharge of Oil Cargo.

A quick discharge of a cargo of crude oil was made at the Pacific entrance by the ship *Lyman Stewart*, from Port San Luis, on March 30 and 31. The ship tied up at the oil station at 4 a. m. on March 30, and cast away at 7.30 p. m. on the 31st, having discharged 65,000 barrels of oil.

## Joint Land Commission.

Mr. Clement Lincoln Bouve, a Washington, D. C. lawyer, has been appointed a member of the Joint Land Commission, and is expected to arrive on the Isthmus on the *Allianca*, on April 5.

The Ambassador of Spain at Washington, has notified the State Department that the umpire of the Joint Land Commission was expected to sail from Spain direct to Colon on March 15.



## THE GRAVEYARD WATCH.

Night Work of the Dredges on the Slides at Culabra.

The Graveyard Watch, as the men of the dredging fleet call it, begins at midnight and ends at 8 o'clock in the morning.

Shortly before midnight the watch boat *Chame* leaves the landing at Paraiso, with sleepy men lying about the decks, and makes for the Cut at Culebra, where the dredges are digging away the slides. It is very dark, although the stars are bright with dry-season brilliancy; and it is so chilly that one questions the 72 degrees Fahrenheit shown by the thermometer. The men crowd around the funnel or crouch behind the cabin house to hide from the draft. As the ship makes the turn between Paraiso and Culebra, the thousand lights of the dredging fleet come into sight, brilliant in the shadows of the enclosing hills, giving the appearance of a city street when electric signs are lighted. No time is lost in changing the watch. The *Chame* steams down to the dumping ground in Gatun Lake, relieves a tug crew wherever it finds a tug, and delivers its cargo of tired men at Paraiso about two o'clock in the morning.

The break in continuity of work is scarcely perceptible. Hardly has the watch boat cast off before the new crew on the dipper dredge has begun to lift great dipperfuls of rock and earth from the bottom of the channel 40 feet below the surface. On the ladder dredges, the groaning of the buckets crunching over the tumbler shaft does not stop at all, while the new crew steps into the places of the old. So on all the vessels—the suction dredge operator speaks a few words to the man he relieves, and all his crew falls into place while the old crew scrambles over the coamings of the watch boat; the drill barge ceases hammering for a minute only; and the tow boat masters leap from the watch boat to the tugs, and apparently automatically begin where the other captains left off.

Eighty-four vessels are engaged in the dredging work—Two ladder dredges, 3 dipper dredges, 2 pipeline suction dredges, one sea-going suction dredge, 13 tugs, 2 clapnets, 2 steam launches, 10 gasoline launches, 5 oil barges, 30 dump scows, one coal hoist, 4 coal barges, one drill barge, 3 graders, one self-propelling crane boat, 2 large crane boats, one wrecking barge, and one drill barge.

Most of these are working along the west bank in a space about 2,000 feet long, for this is the part of the slide on which action has been centered for the present. Mud, soft rock, and hard rock are dug according as the dredges work on the surface, or lower down. Up against the bank all classes of digging are encountered.

The *Cascadas* brought up one dipper of clay, another of mixed clay and rock, and a third—on the third it staggered. The engineer dropped the dipper again and brought the stick up several feet almost vertically, then the cranesman forced the dipper forward; the whole vessel shook, the engines ran slow; the spuds gave from the vertical; but the stick rose steadily on its track. When the dipper emerged from the water it held in its teeth a rock that would have blocked a highway; the boom swung it around above the barge, and the engineer and cranesman working together tilted it off. The supervisor said: "Probably weighs 25 tons and they brought it up from 40 feet below the surface."

The veteran of the fleet, an old French ladder dredge that began service 30 years ago is working on the east side of Cucuracha. The sea-going suction dredge *Culebra* is picking up spoil dumped into the channel when all efforts were bent upon making a small enough break in the slide to allow passage of the tugs and scows. This material is dumped at a point below Paraiso where a suction dredge picks it up and forces it inland to make some fills for sanitary purposes.

The big ladder dredge *Corozal* is working on the east bank opposite Culebra, eating away at the slide. Of less capacity than the large dipper dredges, not able to handle large rock, it is, nevertheless, the most relentless type of digging machine in the Cut. Its endless chain of 1½-yard buckets travels over the immense tumblers hour after hour, scraping the bottom of the canal forced into the earth and rock by the weight of the vessel. From the bridge fifty feet above the water the master watches the buckets as they come up loaded with whatever the bottom yields, and thus judges the placing of the dredge that it may work to best advantage.

In and out among these diggers, all night long, goes the supervisor, directing the work. At Paraiso the Resident Engineer and the superintendent of Dredging are asleep with a telephone beside their beds. At field offices on the bank at either end of the slide section a log is kept of the work. When anything demanding their presence occurs, the chiefs at Paraiso are called and in a few minutes a launch delivers them alongside.

An instance of this occurred on March 24 about 2 o'clock in the morning, when the tug *Bolivar* lost one of her propellers, filled with water that rushed in through the shaft opening, and sank in 30 feet of water. Within an hour after the accident, the superintendent and resident engineer were at the scene, and the work of raising the ship had begun. At noon that day the Board of Local Inspectors had met for investigation, and by 5 o'clock that afternoon the report had been signed by the Acting Governor and the men responsible had been disciplined. At 10 p. m. on the 25th, the crane *Ajax* had raised the tug, and it was immediately taken to the shops at Paraiso. There double shifts were set at work, while the crane *Hercules* held the hull out of the water. The propeller and shaft were replaced, plates forward renewed, and the whole superstructure rebuilt and painted, and the tug was back in service on March 31. In short, the same close plan that characterized the digging in the Cut by steamshovels is in effect today.

The large tugs, which draw from 15 to 20 feet of water are not allowed to bring their tows into the area where the dredges are operating, because there is so little room, and also because of the danger of grounding. Small tugs take the loaded barges from alongside the dredges to a point half a mile below the slide section, and there the large tugs pick them up and tow them to the dumps in Gatun Lake about 11 miles distant. It is difficult to handle this part of the work in the dark.

From the bridge of the *Corozal* could be seen an 1,800-ton barge loaded to the coamings with rock and earth, moving silently away from one of the dipper dredges without apparent cause for motion. It swung slowly into the stream and pointed lakeward. As it passed the *Corozal*, the tug became visible—the *DeLesseps*, a boat only 70 feet long and 15

feet wide, one third the length and width of the barge; yet it handled this load of about 4,000 tons as easily as the dipper dredges pick up a 20-ton rock.

At the barge station the little tugs drop their tows and picking up empty barges push them up to the dredges. Two small tugs handle the fleet of 30 barges in the dredging area.

Along a berm on the west side immediately north of the slide section, is the barge station, comprising a field office, steam power house for siphoning barges, and steam winches at several points for use in warping the barges to the bank, storehouses, storage space for dipper doors and other large repair parts, and a blacksmith shop. All the tools and supplies needed for field repairs to barges are handy here. At the office a boy hailes each tug, finds out its name and the numbers of its barges, and enters them upon his log. When a tug returns from its voyage to the dumps, it reports again. If it has lost time an explanation is in order. Two ends are thus obtained—the men are put on their mettle, and they are protected, because the record shows whether they have done their work.

Each barge brought back from the dumps is warped alongside the bank at the station, and there is inspected carefully to see that the doors of the hoppers are closed, the hinges and "U" bolts are not broken, and that the heavy load just dumped has not broken the sheathing or otherwise injured the hull. The doors of the big barges are below the water line and the inspection is therefore made by "head divers", so called, although they seldom need to put their heads below the surface of the muddy water. They climb down into the hoppers and feel around the hinges and door jams with their toes. Frequently a rock catches between the door and the jamb, making it impossible to close the doors tight. In such case a line from shore is attached to the door and a pull by one of the winches opens it enough to let the rock fall out. Actual repairs are not frequent, although they also come often enough to make necessary the maintenance of the repair shop. Recently a gang of naked divers remained in the water eight hours making repairs to a hinge.

One of the larger tugs, the *Tavernilla* brought two empty barges alongside at the station; the supervisor, megaphone at lips, directed—"Big one and a Moran." The *Tavernilla* sheered off from its empty tow at 4.15 a. m.; turned its nose towards the lake, and with a few turns of its screw dropped alongside the "big one," a 1,000-ton barge loaded until the rock stood ten feet above the bulkheads. On the bridge turning the wheel, playing the searchlight, signalling the engine room, shouting orders to the barge men, stood the captain—his own navigator, mate, and labor foreman. The barge men are West Indians, willing, and obedient, but "not too bright." They grabbed a line and ran with it to the wrong stanchion, whereat the captain spoke in the language of a seaman, and they hauled it to the proper post. Then they grabbed another line and gave it three times around a "nigger head," leaving one part slack. Again the captain spoke from the bridge, but the men misunderstood. Then the captain became a third mate. He ran down from the bridge, jumped upon the barge, and becoming a seaman showed the barge men how to make fast, expostulating meanwhile in deep-sea manner. Incredibly quick he was back again upon the

bridge. The second barge was made fast in like manner, and eight minutes after she had cast off from her empty tow, the *Tavernilla* was steaming down the canal towards the dumps. Under any circumstances the captain's is a man's job. To do it well and quickly, without violating the rule forbidding profanity in discourse with subordinates, is especially difficult.

A smell of codfish from the galley was followed by the aroma of coffee. The captain and the engineer met in the cabin and there sat down to as good a meal of soup, fish, steak, chops, potatoes, peas, tinned peaches, cake and coffee as hardworking men could ask for on a chilly night in the middle of Gatun Lake. Aft, the crew also was at its supper.

Shortly after this the lights marking the dumps at Darien were picked up. Presently the calling of orders from the bridge was resumed, the men leaped upon the barges, and the rattle of chains followed, as the doors were unlatched and the load of earth and rock was allowed to drop through the bottom to the bed of the lake.

Four hours after the *Tavernilla* left with her tow she was back again at the barge station, leaving the empty barges and picking up two loaded ones.

Twenty-four hours a day this routine continues; seven days in the week, only stopping for Christmas and July 4; from 8 in the morning until 4 in the afternoon, from 4 until midnight, and from midnight until 8 a. m. This last trick of duty is not liked by the men; therefore they call it the "Graveyard Watch."

#### Ice Cream Schedule.

##### No. 1.

APRIL 7 TO APRIL 30, 1916 (INCLUSIVE).

Friday.....	April 7.....	Pineapple.
Saturday.....	April 8.....	Bisque.
Sunday.....	April 9.....	Chocolate.
Monday.....	April 10.....	Caramel.
Tuesday.....	April 11.....	Strawberry.
Wednesday.....	April 12.....	Coffee.
Thursday.....	April 13.....	Peach.
Friday.....	April 14.....	Bisque.
Saturday.....	April 15.....	Chocolate.
Sunday.....	April 16.....	Pineapple.
Monday.....	April 17.....	Coffee.
Tuesday.....	April 18.....	Peach.
Wednesday.....	April 19.....	Banana.
Thursday.....	April 20.....	Coffee.
Friday.....	April 21.....	Pineapple.
Saturday.....	April 22.....	Strawberry.
Sunday.....	April 23.....	Bisque.
Monday.....	April 24.....	Chocolate.
Tuesday.....	April 25.....	Strawberry.
Wednesday.....	April 26.....	Caramel.
Thursday.....	April 27.....	Pineapple.
Friday.....	April 28.....	Bisque.
Saturday.....	April 29.....	Peach.
Sunday.....	April 30.....	Coffee.

In addition to the above schedule, vanilla ice cream may be ordered daily.

##### No. 2.

APRIL 7 TO 30, 1916 (INCLUSIVE.)

Friday.....	April 7.....	Pineapple.
Saturday.....	April 8.....	Coffee.
Sunday.....	April 9.....	Chocolate.
Monday.....	April 10.....	Pineapple.
Tuesday.....	April 11.....	Coffee.
Wednesday.....	April 12.....	Chocolate.
Thursday.....	April 13.....	Orange.
Friday.....	April 14.....	Strawberry.
Saturday.....	April 15.....	Bisque.
Sunday.....	April 16.....	Vanilla.
Monday.....	April 17.....	Chocolate.
Tuesday.....	April 18.....	Strawberry.
Wednesday.....	April 19.....	Bisque.
Thursday.....	April 20.....	Coffee.
Friday.....	April 21.....	Vanilla.
Saturday.....	April 22.....	Pineapple.
Sunday.....	April 23.....	Orange.
Monday.....	April 24.....	Strawberry.
Tuesday.....	April 25.....	Bisque.
Wednesday.....	April 26.....	Vanilla.
Thursday.....	April 27.....	Chocolate.
Friday.....	April 28.....	Coffee.
Saturday.....	April 29.....	Orange.
Sunday.....	April 30.....	Pineapple.

BENJ. L. JACOBSON,  
Depot Commissary

## OFFICIAL CIRCULARS.

### Property Accounting.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., March 27, 1916.

#### CIRCULAR NO. 65-10:

Effective April 1, 1916, the following changes in regulations relating to the responsibility for and the accounting for property are hereby prescribed:

1. The present system of accounting financially for property will be discontinued, and property accounts will be handled on a physical basis.

2. The classification of property as "equipment" and "tools" will be abolished, and all property will be carried in one alphabetical list.

3. The keeping of records of individual items by accountable officials for their own account will be discontinued. Physical record will be kept with responsible officials only and by responsible officials for their own account.

4. These property records shall be kept on form P. C. 935, which shall be checked and audited by the Auditor who shall also make test inventories or complete inventories of property, and check same against the property records.

5. The series of voucher numbers will be kept as at present, except that there will be only one series for each accountable official.

6. So much of circulars 656-1 and 656-2 as conflicts herewith is repealed.

CHESTER HARDING,  
Acting Governor, The Panama Canal Co.  
Second Vice President The Panama Railroad Co.

### Panama Railroad Section of Correspondence Bureau.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., March 28, 1916.

To all concerned—The Panama Railroad section of the Correspondence Bureau (the reference to "Executive Office Routine" as subdivision (c) Railroad matters), is hereby abolished and the clerks in that section transferred to general correspondence section and made available for general assignment.

C. A. McILVAINE,  
Executive Secretary.

### Prospective Needs of Steel Plates, Shapes, Bars, Etc.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., March 29, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:  
Because of the rapidly increasing price of steel plates, shapes, bars, etc., and the long time required for deliveries, it is desired to ascertain the prospective needs of the various departments along these lines for the next six months. This office has been advised that the large steel manufacturers in the States are now accepting orders for deliveries in the first and second quarters of 1917, and that the competition is increasing. Please look into this matter thoroughly and advise your department's requirements for the rest of the calendar year.

WM. R. GROVE,  
Chief Quartermaster.

### Consignors of Empty Oil Drums.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., March 29, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:  
The general storekeeper advises that there are frequently received at the Balboa storehouse several consignments of empty oil drums by "local" in the same car, without tags or identification marks showing to whom credit should be given. In order to insure the department returning these drums receiving credit therefor, each empty drum returned to the storehouse should be tagged showing name of consignor.

WM. R. GROVE,  
Chief Quartermaster.

### Need of Typewriters.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., March 27, 1916.  
In order to fill back orders for Underwood typewriters now on file in the Balboa storehouse, it is requested that all machines that can be spared be sent to the instrument repair shop for overhauling and return to stock. Heads of departments and divisions are respectfully requested to give this matter their attention, as machines are urgently needed.

WM. R. GROVE,  
Chief Quartermaster.

### Anonas.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., March 8, 1916.

#### MEMORANDUM NO. 54:

To Commissary managers—Advice has been received from the Purchasing Agent in Costa Rica that the season for Anonas is about over, and that there will be no more until about the 1st of October.

Please bring this to the attention of your trade.  
BENJ. L. JACOBSON,  
Depot Commissary.

### Proposals for Purchase of Panama Railroad Yard Office at Colon.

Sealed bids will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., April 12, 1916, and then opened in public, for the purchase of the building formerly used by the Panama Railroad Company as Yardmaster's office, opposite pier No. 4, Colon. The successful bidder will be required to remove building and clear ground of all obstructions within 60 days after date of acceptance of bid. Certified check, money order, or currency, in amount of 20 per cent of the amount bid will be required with bid as a guarantee that building will be removed, and payment of the balance will be required before any shipment is made. Panama Canal rate will be allowed on shipment. The Panama Canal reserves the right to accept any or reject any or all bids. Bids should be marked: "Proposal for Purchase of Panama Railroad Yard Office at Colon," and addressed to Chief Quartermaster, Balboa Heights, C. Z.

### Proposed Housing of Silver Employees.

BALBOA HEIGHTS, C. Z., March 31, 1916.

#### HEADS OF DEPARTMENTS AND DIVISIONS:

In order to make the necessary arrangements for the housing of silver force to be permanently employed in the various districts, it is requested that you will fill out the attached blank, giving the estimated number of silver employees to be permanently employed in the various districts under your organization, and forward the same to this office as soon as possible.

WM. R. GROVE,  
Chief Quartermaster.

#### (Place)

April—, 1916.

Sir: The following is the estimated number of silver employees for whom quarters will be required at stations shown below, on a permanent basis:

District.	No. of Employees.
Ancon-Balboa.....	.....
Corozal.....	.....
Pedro Miguel.....	.....
Paraíso.....	.....
Empire.....	.....
Las Cascadas.....	.....
Culebra.....	.....
Gamboa.....	.....
Gamboa Stockade.....	.....
Frijoles.....	.....
Monte Lirio.....	.....
Gatun.....	.....
Mount Hope.....	.....
Cristobal-Colon.....	.....

Head of Division.

### Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, April 6, 1916:

FISH.	Price.
Fresh fish, per lb.....	.11
Turtle (wt. 100 to 200 lbs.), per lb.....	.07
FRUITS.	
Coconuts, dry, ea.....	.04
Coconuts, water, ea.....	.05
Pineapples, ea.....	.12*
Sugar cane, ea.....	.03
Plantain, ea.....	.01
VEGETABLES.	
Celery, soup, 1 cr bunch.....	.04
Ginger, per lb.....	.05
Lettuce, per lb.....	.09†
Plant, per bunch.....	.00†
Onions, green, per bunch.....	.04
Parsley, per bunch.....	.04
Radishes, per bunch.....	.04
Spinach, per bunch.....	.02
Yampi, per lb.....	.04
MISCELLANEOUS.	
Roses (Hospital Farm), per doz.....	.50
Charcoal, 30-lb. sack.....	.30

\* Indicates advance from last list.  
† Indicates reduction from last list.



## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

The following list of retail prices of cold storage provisions will be effective March 30, 1916.  
The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.		Price.
Beef, suet, special, per lb.	\$ .033	
Beef suet, native, per lb.	.013	
Soup beef, special, per lb.	.07	
Soup beef, native, per lb.	.05	
Soup bone, special, per lb.	.023	
Soup bone, native, per lb.	.024	
Steak beef, native, per lb.	.08	
Plate beef, native, per lb.	.08	
Chuck roast (3 lbs. up), native, per lb.	.08	
Rib roast, 2d cut (3 lbs. up), special, per lb.	.16	
Rib roast, 2d cut (3 lbs. up), native, per lb.	.09	
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19	
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11	
Port roast, special, per lb.	.20	
Port roast, native, per lb.	.12	
Rump roast, special, per lb.	.20	
Rump roast, native, per lb.	.12	
Porterhouse roast, choice, per lb.	.31	
Porterhouse roast, special, per lb.	.22	
Porterhouse roast, native, per lb.	.16	
Chuck steak, native, per lb.	.09	
Round steak, bottom, special, per lb.	.13	
Round steak, bottom, native, per lb.	.09	
Round steak, top, special, per lb.	.15	
Round steak, top, native, per lb.	.10	
Sirloin steak, special, per lb.	.20	
Sirloin steak, native, per lb.	.12	
Sirloin steak, choice cut, special, per lb.	.23	
Sirloin steak, choice cut, native, per lb.	.16	
Rump steak, special, per lb.	.20	
Rump steak, native, per lb.	.12	
Porterhouse steak (1 1/2 lbs. up), choice, per lb.	.34	
Porterhouse steak (1 1/2 lbs. up), special, per lb.	.23	
Porterhouse steak (1 1/2 lbs. up), native, per lb.	.17	
Porterhouse steak, choice, per lb.	.28	
Porterhouse steak, short, special, per lb.	.20	
Porterhouse steak, short, native, per lb.	.12	
Tenderloin steak, special, per lb.	.35	
Tenderloin steak, native, per lb.	.23	
Tenderloin steak, western, special, per lb.	.30	
Rib steak, native, per lb.	.11	

## FRESH MEATS.

Lamb, chops, per lb.	.29
Lamb, chops, shoulder, per lb.	.20
Lamb, legs, 5 to 8 lbs., per lb.	.14
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.25
Lamb, stewing, per lb.	.12
Mutton, chops, shoulder, per lb.	.23
Mutton, chops, shoulder, per lb.	.17
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.19
Pork, hams, fresh (see footnote), per lb.	.25 1/2
Pork, loins, chops, or roast, per lb.	.19
Pork, shoulders, fresh (see footnote), per lb.	.20 1/2
Veal, chops, per lb.	.30
Veal, chops, shoulder, per lb.	.24
Veal, cutlets, per lb.	.41
Veal, loin for roasting, per lb.	.36
Veal, shoulder for roasting not under 4 lbs., per lb.	.18
Veal, stewing, per lb.	.15

## MISCELLANEOUS.

Beef heart, fresh, per lb.	.12
Brains, calves, per lb.	.07
Calves' heads, ea.	.78
Kidneys, beef, per lb.	.13 1/2
Livers, beef, per lb.	.08
Livers, calves, per lb.	.27
Pates de foie gras, jar.	.55
Pigs' feet, fresh, per lb.	.05
Pigs' heads, fresh, whole, ea.	.83
Pigs' heads, fresh, split, half, ea.	.42
Sausage, bologna, per lb.	.19 1/2
Sausage, frankfurter, per lb.	.18
Sausage, liverwurst, per lb.	.19 1/2
Sausage, pork, per lb.	.23
Sausage, pork, homemade, per lb.	.23
Sausage, Salami, per lb.	.36
Spare ribs, pork, per lb.	.15
Steak, hamburger, per lb.	.17
Steak, hamburger, 20-pound container, per lb.	.14
Sweetbread, beef, per lb.	.21
Tails, ox, per lb.	.09
Tongue, beef, native, per lb.	.20
Veal, per lb.	.31
Yeast, cake	.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.30 1/2
Bacon, breakfast, sliced, per lb.	.31 1/2
Bacon, sliced, jar.	.80
Bacon, sliced, tin.	.23 1/2
Bacon, strips, whole strip.	.09
Beef, salt, per lb.	.12
Beef, corned—No. 2, per lb.	.21
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.21
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	.17
1. Ham, sugar cured (whole) per lb.	.25 1/2
2. Ham, sugar cured (half) per lb.	.33 1/2
3. Ham, sugar cured (sliced) per lb.	.33 1/2
1. Ham, sugar cured, boiled (whole) per lb.	.33

2. Ham, sugar cured, boiled (half).	.36
3. Ham, sugar cured, boiled (sliced).	.41
Ham, special, per lb.	.40
Pigs feet, pickled, per lb.	.08 1/2
Pork, bellies, per lb.	.18
Pork, chops, per lb.	.12
Pork, standard mess, per lb.	.13
Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs', per lb.	.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	.32
Broilers, milk fed, per lb.	.37
Capons, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.29
Chickens, fancy roasting, milk fed, per lb.	.32
Ducklings, per lb.	.32
Fowls, light, per lb.	.23
Fowls, western, dry picked, per lb.	.25
Grouse, ea.	.60
Squabs, ea.	.45
Turkeys, per lb.	.37

## DAIRY PRODUCTS.

Butter, creamery special, per lb.	.50*
Butter, creamery, 60-62 lb. tub, whole tub per lb.	.49*
Butter, Sheffield farms, extra fancy, per lb.	.58
Cheese, Edam, ea.	1.50
Cheese, 16-lb. tin, ea.	.45
Cheese, Gouda, per lb.	.36
Cheese, Parmesan, per lb.	.43
Cheese, Philadelphia cream, cake.	.09
Cheese, Roquefort, per lb.	.29
Cheese, swiss, cake.	.48
Cheese, Swiss, per lb.	.48
Cheese, Young American, per lb.	.26
Cream, 30 per cent, pt.	.12 1/2*
Cream, 30 per cent, qt.	.52 1/2*
Eggs, fresh, per doz.	.33 1/2
Eggs, fresh, 1/2 doz. only.	.25 1/2
Fer-mil-lac, bottle.	.18
Ice cream, (see footnote) qt.	.25
Ice cream, (see footnote) gal.	.50
Milk, Sheffield farms, at.	.13
Oleomargarine, per lb. cr.	.29

## FISH.

Bluefish, fresh, per lb.	.27
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.09
Halibut, fresh, per lb.	.12
Herring, smoked, per lb.	.13
Oysters, fresh, per qt.	.44
Salmon, fresh, per lb.	.32
Whitefish, smoked, per lb.	.12

## VEGETABLES.

Beans, string, per lb.	.10
Beets, per lb.	.02 1/2
Beets, new, per lb.	.07
Cabbage, per lb.	.02 1/2
Carrots, per lb.	.03 1/2
Celery, per head.	.07 1/2
Cincho, each.	.02
Corn, green, per doz.	.12
Egg plant, per lb.	.07 1/2
Lettuce, per lb.	.09
Onions, per lb.	.04
Parsnips, per lb.	.02 1/2
Peas, green, per lb.	.08
Plantains, per doz.	.12
Potatoes, new, per lb.	.06
Potatoes, white, per lb.	.05
Potatoes, sweet, American, per lb.	.03
Radishes, per bunch.	.04
Squash, per lb.	.03
Tomatoes, per lb.	.07 1/2
Turnips, per lb.	.02
Yams, per lb.	.03

## FRUITS, DRIED.

Apples, evaporated, per lb.	.10 1/2
Apricots, evaporated, per lb.	.10
Currants, cleaned, pkg.	.15
Figs, dried, 12-oz pkg.	.12
Figs, 2-lb. box.	.35 1/2
Peaches, per lb.	.05
Pears, evaporated, per lb.	.15
Peel, citron, per lb.	.20
Peel, lemon, per lb.	.16
Peel, orange, per lb.	.16
Prunes, stewing, per lb.	.11
Raisins, seeded, pkg.	.10
Raisins, table cluster, per lb.	.17

## FRUITS, FRESH.

Apples, fresh, per lb.	.05
Apricots, fresh, per lb.	.05
Bananas, 8 hands an' over, per bunch.	.20
Bananas, 6 and 7 hands, per bunch.	.28
Bananas, ea.	.04
Cauliflowers, per lb.	.15
Grapes, per lb.	.09
Grapefruit, select, ea.	.03 1/2
Grapefruit, tropical, ea.	.03 1/2
Lemons, per lb.	.04
Oranges, select, ea.	.04
Oranges, tropical, doz.	.10 1/2
Palmitsos, ea.	.24
Pineapples, ea.	.11

\* Indicates advance from preceding list.

† Indicates five cents allowed for return of bottle.

‡ Indicates only from commissaries, no orders taken for delivery.

§ Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

## Fill along Rear of Miraflores Spillway.

Once every day a clapot and two scows in tow, all loaded with spoil from the excavation in the Cut, are handled through Pedro Miguel Lock to Miraflores Lake and the spoil dumped directly in front of the Miraflores Spillway. The clapot can make the trip from Gold Hill to the spillway and back in almost two hours less time than is required for the trip to the dumping grounds in Gatun Lake.

The spoil is making a fill which was originally intended to be made with dry spoil. In the filling with dry spoil, a considerable quantity was dumped in the space between the north-east flare wall of Miraflores Locks and the spillway and in front of the west end of the spillway eastward along the length of the dam. It is expected that the fill will overcome the slight seepage of water through the masonry into the counterweight pits.

## Avocados.

An analysis of avocados made by the University of California experimental station established the following average for 28 varieties: Water, less than 70 per cent; protein, 2 per cent; carbohydrates, 7 per cent; mineral ingredients, 1.2 per cent; fat, 20 to 30 per cent.

## March Rainfall for Three Years.

STATIONS.	1914 1915 1916				Station average.	Years of record.	Rainy days, 1916.
	Ins.	Ins.	Ins.	Ins.			
Pacific Section—							
Balboa .....	.90	.00	.43	.67	17	5	
Balboa Heights .....	T	.81	.68	.88	18	6	
Miraflores .....	.00	.07	.20	.48	18	6	
Pedro Miguel .....	.02	.22	.41	.32	9		
Rio Grande .....	T	.19	.83	.33	12	10	
Central Section—							
Culebra .....	.01	.09	.56	.62	26	6	
Camacho .....	.00	.88	.62	.50	10	6	
Empire .....	T	.24	.84	.39	11	7	
Gambou .....	.02	.02	.89	.76	31	7	
Juan Mina .....	.01	.20	.88	.29	6		
Alhajuela .....	.05	.04	.37	.54	17	8	
Vigia .....	.14	.06	.42	.51	8	6	
Frijoles .....	.40	.69	2.01	7.0	5	8	
Trinidad .....	.71	1.15	2.77	2.40	19	10	
Monte Lirio .....	1.19	.76	2.66	2.67	9	12	
Atlantic Section—							
Gatun .....	.96	.00	3.25	2.45	12	19	
Brasos Brook .....	1.12	.96	7.5	3.0	10	19	
Pedro Miguel .....	.91	.71	2.68	1.66	46	19	
Bocas del Toro .....	5.58	8.21	3.57	5.60	8	19	

## Rainfall from March 1 to 31, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—			
Balboa .....	Ins.	.17	4
Balboa Heights .....	.31	8	.89
Miraflores .....	.10	4	.20
Pedro Miguel .....	.14	16	.41
Rio Grande .....	.32	16	.83
Central Section—			
Culebra .....	.20	16	.56
Camacho .....	.36	8	.62
Empire .....	.43	8	.84
Gambou .....	.39	8	.89
Juan Mina .....	.36	12	.88
Alhajuela .....	.12	18	.37
Vigia .....	.16	19	.42
Frijoles .....	.60	18	2.01
Trinidad .....	.55	3	2.77
Monte Lirio .....	.77	19	2.66
Atlantic Section—			
Gatun .....	.69	10	3.25
Brasos Brook .....	.50	12	2.75
Pedro Miguel .....	.33	10	2.68
Bocas del Toro .....	.70	8	3.57

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values, midnight to midnight.

†Standard rain gage—readings at 8 a. m. daily.



## SHIPPING INFORMATION.

## May Weather Probabilities.

During the month of May, 1916, the following weather conditions may be expected to prevail at the Canal entrances. Predictions are based on the records at Colon and Ancon, for the past eight and ten years, respectively:

**Winds**—There will be a marked decrease in the wind movement over the Isthmus, with the commencing of the rainy season. At the Atlantic entrance to the Canal, northerly winds will prevail, although variable winds may be expected with the change of the season. An average hourly velocity of about eight miles an hour may be expected and a maximum velocity of 36 miles may occur during a thunder squall.

The prevailing direction of the wind will be from the northwest, over the Pacific coast and the interior, the average hourly movement being about six miles an hour. A maximum wind velocity of 47 miles an hour was recorded on the Pacific side on May 26, 1915, breaking all previous records. This, however, expresses extreme conditions and so high a velocity is not likely to occur during normal May weather.

**Rain**—The month of May marks the transition from dry season weather to rainy season conditions. Heavy showers can be expected on both coasts and over the interior. The station averages at the Pacific and Atlantic entrances, are 8.67 inches and 12.66 inches, respectively, while the average number of rainy days (one on which 0.01 or more inches of rain is measured) is 20 and 22. The average number of days on which the rainfall equaled or exceeded one inch (1.00) has been 2 at the Pacific entrance and 5 at the Atlantic.

**Fogs**—No fogs are likely to occur on the Pacific coast and few fogs, if any, may be expected at the Atlantic entrance. Night and early morning fogs may be expected quite frequently over the interior. The average number of nights with fog over the Gaillard Cut section of the Canal is 22.65 percent of which have been light. Practically all of the fogs may be expected to lift or become dissipated by 8.30 a. m.

**Temperature**—An average shade air temperature of 81° F. may be expected at both Atlantic and Pacific entrances. On the Atlantic coast the temperature is not likely to rise above 91° F., or fall below 71° F., while on the Pacific coast the maximum air temperature is not likely to exceed 96° F., or the minimum fall lower than 69° F. The mean daily range in temperature will probably be about 9° F., at the Atlantic entrance and about 15° F. at the Pacific entrance.

**Barometric pressure**—The barometric pressure on the Isthmus has little value as an indicator of future weather conditions, for, except for the well marked diurnal change, changes in atmospheric pressure are very slight. The average May sea level pressure is 29.85 inches. A maximum pressure of more than 29.97 inches, or a minimum pressure of less than 29.71 inches, is not likely to occur at either Canal entrance.

**Relative humidity**—There will be an increase in the percentage of moisture in the air, with the beginning of the rainy season. The average percentage of moisture in the air (0 for absolute dryness and 100 for complete saturation) should be about 85 per cent over both coasts, although the range will be

greater on the Pacific coast. At the Atlantic entrance the humidity will vary between 92 per cent in the night time and 78 per cent in the middle, while on the Pacific side it will vary between 96 per cent and 68 per cent.

**Storms**—Thunder squalls may be expected during the month at both Canal entrances. During these storms, comparatively high wind velocities may be attained, but the storms are of too short duration to cause a rough sea. The average number of days with thunderstorms on the Atlantic and Pacific coasts are 13 and 16 respectively. Generally cloudy weather may be expected during the month over both coasts.

**Tides**—Tidal fluctuations need not be considered on the Atlantic coast, owing to the fact that the average range is less than one foot and the maximum range approximately two feet.

Panama (Balboa) tide predictions are given below:

## Tide Predictions, Port of Balboa.

APRIL.				
DATE.	Time and height of high and low water.			
Wed., April 5.....	5:29 15.1	11:33 0.6	17:42 15.4	23:53 0.3
Thurs., April 6.....	6:07 14.5	12:10 1.4	18:18 14.7	.....
Fri., April 7.....	6:30 1.1	6:39 13.8	12:50 2.4	18:55 13.9
Sat., April 8.....	1:11 2.1	7:22 12.9	13:32 3.5	19:33 12.9
Sun., April 9.....	1:57 3.2	8:04 12.1	14:22 4.4	20:17 12.0
Mon., April 10.....	2:51 4.0	8:55 11.3	15:24 5.2	21:12 11.3
Tues., April 11.....	3:56 4.6	10:04 10.9	16:35 5.5	22:28 10.9
Wed., April 12.....	5:04 4.8	11:27 11.0	17:45 5.2	23:49 11.1
Thurs., April 13.....	6:09 4.4	12:31 11.6	18:46 4.4	.....
Fri., April 14.....	6:50 11.7	7:06 3.8	13:20 12.6	19:39 3.3
Sat., April 15.....	1:39 12.6	7:54 2.9	13:59 13.6	20:24 2.2
Sun., April 16.....	2:21 13.5	8:37 2.0	14:38 14.6	21:05 1.0
Mon., April 17.....	3:01 14.4	9:18 1.1	15:15 15.5	21:44 0.0
Tues., April 18.....	3:41 15.0	9:57 0.5	15:54 16.1	22:23 -0.7
Wed., April 19.....	4:23 15.5	10:36 0.0	16:35 16.4	23:02 -1.0
Thurs., April 20.....	5:06 15.7	11:17 0.0	17:18 16.4	23:43 -0.9
Fri., April 21.....	5:51 15.6	12:00 0.3	18:04 16.1	.....
Sat., April 22.....	0:28 -0.4	6:38 15.2	12:36 1.0	18:52 15.4
Sun., April 23.....	1:18 0.4	7:29 14.6	13:40 1.8	19:45 14.5
Mon., April 24.....	2:15 1.3	8:25 13.9	14:43 2.7	20:45 13.6
Tues., April 25.....	3:21 2.2	9:31 13.4	15:55 3.2	21:57 12.8
Wed., April 26.....	4:29 2.6	10:47 13.2	17:07 3.2	23:29 12.6
Thurs., April 27.....	5:37 2.6	12:00 13.6	18:16 2.8	.....
Fri., April 28.....	0:33 12.9	6:41 2.4	13:01 14.1	19:17 2.1
Sat., April 29.....	1:32 13.5	7:38 2.0	13:52 14.7	20:10 1.3
Sun., April 30.....	2:22 14.0	8:29 1.5	14:36 15.1	20:56 0.6

## MAY.

DATE.	Time and height of high and low water.			
Mon., May 1.....	3:06 14.4	9:14 1.1	15:17 15.3	21:38 0.2
Tues., May 2.....	3:46 14.6	9:54 0.9	15:56 15.3	22:15 0.0
Wed., May 3.....	4:26 14.6	10:33 1.0	16:34 15.3	22:53 0.2
Thurs., May 4.....	5:05 14.4	11:10 1.3	17:12 14.8	23:28 0.6
Fri., May 5.....	5:42 14.0	11:46 1.9	17:49 14.3	.....
Sat., May 6.....	0:05 1.2	6:19 13.6	12:24 2.6	18:27 13.7
Sun., May 7.....	0:43 2.0	6:57 13.0	13:04 3.4	19:05 13.0
Mon., May 8.....	1:26 2.8	7:37 12.4	13:51 4.2	19:46 12.2
Tues., May 9.....	2:14 3.6	8:22 11.9	14:48 4.8	20:34 11.6
Wed., May 10.....	3:10 4.2	9:16 11.5	15:51 5.0	21:34 11.1
Thurs., May 11.....	4:11 4.4	10:22 11.5	17:07 4.9	22:49 11.1
Fri., May 12.....	5:12 4.4	11:29 11.9	18:09 4.2	23:59 11.5
Sat., May 13.....	6:12 4.0	12:27 12.7	18:54 3.3	.....
Sun., May 14.....	0:55 12.3	7:07 3.3	13:15 13.6	19:45 2.2
Mon., May 15.....	1:44 13.2	7:59 2.4	13:59 14.6	20:33 1.0
Tues., May 16.....	2:29 14.2	8:46 1.5	14:43 15.5	21:17 0.0
Wed., May 17.....	3:15 15.0	9:31 0.6	15:27 16.2	22:00 -0.8
Thurs., May 18.....	4:01 15.6	10:16 0.1	16:14 16.5	22:44 -1.3
Fri., May 19.....	4:49 15.9	11:01 -0.1	17:02 16.5	23:28 -1.3
Sat., May 20.....	5:39 16.0	11:46 0.0	17:52 16.3	.....
Sun., May 21.....	0:15 -0.9	6:30 15.8	12:36 0.5	18:44 15.7
Mon., May 22.....	1:05 -0.3	7:21 15.4	13:30 1.3	19:37 14.9
Tues., May 23.....	2:00 0.6	8:16 14.8	14:31 2.0	20:35 13.9
Wed., May 24.....	3:00 1.5	9:15 14.2	15:38 2.6	21:40 13.1
Thurs., May 25.....	4:04 2.2	10:21 13.8	16:45 2.8	22:54 12.6
Fri., May 26.....	5:08 2.7	11:28 13.7	17:49 2.8	.....
Sat., May 27.....	0:07 12.5	6:11 2.9	12:32 13.7	18:50 2.5
Sun., May 28.....	1:10 12:28	7:10 2.9	13:25 14:00	19:45 2.0
Mon., May 29.....	2:01 13.1	8:03 2.6	14:12 14.2	20:33 1.5
Thurs., May 30.....	2:46 13.5	8:51 2.3	14:54 14.4	21:16 1.1
Wed., May 31.....	3:27 13.7	9:33 2.0	15:33 14.4	21:56 0.9

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparative consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3.47 p. m.

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., April 2, 1916.)

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
March 30.	<i>Wisdome</i> (yacht)*.	American.	Dr. Salisbury.	San Blas.	Balboa.			48	33

\*In ballast.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
March 27.	<i>Wisdome</i>	Dr. Salisbury.	San Blas.	March 28.	<i>Albanian</i>	Leyland Line.	Port Limon.
March 29.	<i>Patria</i>	Cuban Government.	Havana.	April 1.	<i>Patria</i>	Cuban Government.	Havana.
March 30.	<i>Niagra</i>	French Line.	Bordeaux.				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

April 7.	<i>Sishiyon</i>	E. K. Wood Lumber Co.	New Orleans.	April 4.	<i>Niagra</i>	French Line.	Bordeaux.
April 8.	<i>Covina</i>	Elders & Wyffes.	Port Limon.	April 8.	<i>Covina</i>	Elders & Wyffes.	Bristol & Jamaica.
					<i>Sishiyon</i>	E. K. Wood Lumber Co.	Havana.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

## DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
March 27.	<i>San Jose</i>	Pacific Mail Steamship Co.	San Francisco.	March 27.	<i>Coya</i>	N. Y. & Pacific S. S. Co.	Tocapilla.
March 27.	<i>St. Veronica</i>	British & Foreign S. S. Co.	Astoria.	March 27.	<i>Huaso</i>	South American S. S. Co.	Chilean ports.
March 28.	<i>Alicia</i>	Panama Transport Co.	Camp Sabbath.	March 28.	<i>J. A. Moffett</i>	Standard Oil Company	San Francisco.
March 29.	<i>Salvador</i>	Pacific Steam Nav. Co.	Salina Cruz.	March 28.	<i>Barge No. 3.</i>	Standard Oil Company	San Francisco.
March 29.	<i>O. M. Clark</i>	Higgins Lumber Company.	San Francisco.	March 28.	<i>Capra</i>	Pacific Steam Nav. Co.	Guayaquil.
March 29.	<i>Imperial</i>	South American S. S. Co.	Talcahuano.	March 28.	<i>Quisque</i>	Pacific Steam Nav. Co.	Valparaiso.
March 29.	<i>Guardian</i>	Cen. & So. Am. Tel. Co.	Callao.	March 28.	<i>City of Para.</i>	Pacific Mail Steamship Co.	San Francisco.
March 29.	<i>Jamaica</i>	Pacific Steam Nav. Co.	Tumaco.	March 30.	<i>Urubamba</i>	Peruvian Steamship Co.	Guayaquil.
March 29.	<i>Cetiviana</i>	W. Eagle.	San Francisco.	March 30.	<i>Guardian</i>	Cen. & So. Amer. Tel. Co.	Callao.
March 30.	<i>Lynan Stewart</i>	Union Oil Company	Port San Luis.	March 30.	<i>Claret No. 2.</i>	National Navigation Co.	Panama.
March 30.	<i>Claret No. 2.</i>	National Navigation Co.	Panama.	March 31.	<i>Cyprus</i> (yacht)	D. C. Jackling.	Callao.
March 31.	<i>Manito</i>	Peruvian Steamship Co.	Callao.	March 31.	<i>Alicia</i>	Panama Transport Co.	Camp Sabbath.
April 1.	<i>Manuvi</i>	Pacific Steam Nav. Co.	Guayaquil.	March 31.	<i>Lynan Stewart</i>	Union Oil Co.	San Francisco.
April 2.	<i>Edna</i>	Pacific Mail S. S. Co.	San Francisco.	April 1.	<i>Salvador</i>	Pacific Steam Nav. Co.	Taboga.
April 2.	<i>Chile</i>	Pacific Steam Nav. Co.	Valparaiso.	April 2.	<i>Solano</i>	Solano Steamship Co.	Guayaquil.
				April 2.	<i>San Jose</i>	Pacific Mail S. S. Co.	San Francisco.
				April 2.	<i>O. M. Clark</i>	Higgins Lumber Co.	San Francisco.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

April 3.	<i>Copenhagen</i>	Glasgow Shipowner's Co.	Iquique.	April 3.	<i>Imperial</i>	South American S. S. Co.	Valparaiso.
April 3.	<i>Alicia</i>	Panama Transport Co.	Camp Sabbath.	April 10.	<i>Jamaica</i>	Pacific Steam Nav. Co.	Tumaco.
April 3.	<i>Kim</i>	P. Johannesen.	Iquique.	April 10.	<i>Manavi</i>	Pacific Steam Nav. Co.	Guayaquil.
April 3.	<i>Florence Luckbach</i>	Luckenbach Line.	Valparaiso.	April 9.	<i>Chile</i>	Pacific Steam Nav. Co.	Peruvian ports.
April 4.	<i>Aysen</i>	South American S. S. Co.	Valparaiso.	April 13.	<i>Manito</i>	Peruvian Steamship Co.	Guayaquil-Peru pts.
April 5.	<i>Newport</i>	Standard Oil Company.	San Francisco.				
April 5.	<i>La Primera</i>	N. Y. & Pacific S. S. Co.	San Francisco.				
April 7.	<i>Cape</i>	N. Y. & Pacific S. S. Co.	San Francisco.				
April 8.	<i>Peru</i>	Pacific Steam Nav. Co.	San Francisco.				

NOTE: \*Indicates the vessel will await passage through the canal.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York on the following Monday.\*

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, April 3 and May 1, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the sailing on May 1.

†When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Coal.

Coal is supplied to vessels at both Cristobal and Balboa, at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, April 1, 1916.

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gambua	Gatun Lake.	Miraflores Lake.
Sun., Mar. 26	125.15	91.73	86.32	86.74	54.02
Mon., Mar. 27	125.05	91.57	6.32	6.23	53.89
Tues., Mar. 28	124.95	91.49	6.22	6.21	53.6
Wed., Mar. 29	125.05	91.53	6.28	6.28	53.92
Thurs., Mar. 30	125.0	91.86	28.86	18.54	03
Fri., Mar. 31	125.0	91.38	86.20	6.13	54.00
Sat., Apr. 1	124.95	91.31	86.20	6.10	53.91
Heights of low water to nearest foot	125.0	91.0			

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.		
Vessel.	Line.	Sails.
<i>Calameres</i>	U. F. C.	April 1.
<i>Carillo</i>	U. F. C.	April 5.
<i>Colon</i>	P. R. R.	April 6.
<i>Tenadores</i>	U. F. C.	April 8.
<i>Santa Maria</i>	U. F. C.	April 12.
<i>Advance</i>	P. R. R.	April 13.
<i>Metapan</i>	U. F. C.	April 15.

<i>Panama</i>	P. R. R.	April 20.
<i>Allianca</i>	P. R. R.	April 27.
<i>Colon</i>	P. R. R.	May 4.

## CRISTOBAL-COLON TO NEW YORK.

<i>Metapan</i>	U. F. C.	April 3.
<i>Panama</i>	P. R. R.	April 6.
<i>Almirante</i>	U. F. C.	April 6.
<i>Pastores</i>	U. F. C.	April 10.
<i>Allianca</i>	P. R. R.	April 13.
<i>Zacapa</i>	U. F. C.	April 13.
<i>Calameres</i>	U. F. C.	April 13.
<i>Colon</i>	P. R. R.	April 17.
<i>Carrillo</i>	U. F. C.	April 20.
<i>Advance</i>	P. R. R.	April 27.
<i>Panama</i>	P. R. R.	May 4.
<i>Allianca</i>	P. R. R.	May 11.
<i>Colon</i>	P. R. R.	May 18.

## NEW ORLEANS TO CRISTOBAL-COLON.

<i>Atenas</i>	U. F. C.	April 1.
<i>Carillo</i>	U. F. C.	April 5.
<i>Heredia</i>	U. F. C.	April 8.
<i>Parissima</i>	U. F. C.	April 12.
<i>Abangares</i>	U. F. C.	April 15.
<i>Atenas</i>	U. F. C.	April 19.
<i>Cariaco</i>	U. F. C.	April 22.
<i>Heredia</i>	U. F. C.	April 26.

## CRISTOBAL-COLON TO NEW ORLEANS.

<i>Parissima</i>	U. F. C.	April 2.
<i>Abangares</i>	U. F. C.	April 5.
<i>Atenas</i>	U. F. C.	April 9.
<i>Colon</i>	U. F. C.	April 16.
<i>Heredia</i>	U. F. C.	April 19.
<i>Parissima</i>	U. F. C.	April 23.
<i>Abangares</i>	U. F. C.	April 26.

# CANAL



# RECORD

Volume IX.

BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, APRIL 12, 1916.

No. 34.

## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

For delivery in other countries, to which the paper must be forwarded under foreign postal rates, a charge of 50 cents is added for postage, making the subscription \$1.50 per year.

Yearly subscriptions are entered as beginning at the first of the quarter of the year in which received, and expire at the beginning of the corresponding quarter of the following year. When subscriptions are received after the beginning of a quarter the back numbers which have been issued during that quarter will be furnished when available.

The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

Bound volumes of The Canal Record, 1 to VIII, inclusive, are for sale at \$2.50 each.

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Address all Communications.

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Waiting.

Navigation through the canal will be resumed April 15. The following ships are waiting to make the transit:

#### ATLANTIC BOUND.

The following vessels are at the Pacific entrance awaiting transit through the Canal: *Crown of Seville*, Crown Steamship Company, from Seattle; *Harry Luckenbach*, Luckenbach Steamship Company, from Seattle; *Sommerstad*, Klavensens Dampskibs Akties, from San Francisco; *Alfred Noble*, Concordia Steamship Company, from Topocilla; *St. Veronica*, British and Foreign S. Co., from Astoria; *Cetrina*, W. Eadie, from San Francisco; *Edith*, Luckenbach Steamship Company, from San Francisco; *Copenhagen*, Glasgow Shipowner's Company, from Iquique; *Florence Luckenbach*, Luckenbach Steamship Company, from Iquique; *Kim*, P. Johannessen, from Iquique; *American*, American-Hawaiian Steamship Company, from Mejillones; *Thode Faglund*, Wilhelmsens Dampsk. Akties, from Topocilla; *Capac*, N. Y. and Pacific Steamship Company, from Callao.

#### PACIFIC BOUND.

*Lewis Luckenbach*, Luckenbach Steamship Line, New York to San Francisco; *Oysteric*, Bank Line, Newport News to San Francisco; *Jacob Luckenbach*, Luckenbach Steamship Line New York to Los Angeles; *Windber*, Pacific American Fisheries, St. Thomas to Balboa; *Buford*, U. S. Army transport, New York to

Manila; *Harima Maru*, Goshi Kaisha Kishimoto Shokai, New York to Otaru, Japan.

### Excavation in the Cut during the Past Week.

Excavation from the basis of the Culebra slides during the week ending at midnight of Monday, April 10, amounted to 249,487 cubic yards.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	52,910
Gambua.....	15-yard dipper.....	63,145
Paraiso.....	15-yard dipper.....	58,760
Corozal.....	Ladder.....	20,905
No. 86.....	Pipeline suction.....	15,308
No. 83.....	Pipeline suction.....	8,035
Culebra.....	Seagoing suction.....	26,884
No. 5.....	Belgian ladder.....	3,290

The average aggregate output of the dredges during the 24 weeks preceeding that ending midnight Monday, April 10 was 258,281 cubic yards, the total amount of primary excavation during that period, having been 6,198,742 cubic yards.

This has been an average of 36,897 cubic yards for each of the 168 days.

### Changes at Gatun Hydro-Electric Station.

Extensive changes have been authorized for increasing the capacity of the hydroelectric plant at Gatun. New turbine wheels have been ordered for the three turbo-generator sets, each of 4,400 horsepower, instead of 3,100 horsepower as at present. No change will be made in the generators, as the very liberal design of these units makes it possible to operate them with an output of 3,650 Kva, at 80 per cent power factor and 55 degrees centigrade temperature rise.

In order to take care of the increased output of these generators, four new 400,000 circular mil cables have been ordered for installation between the hydroelectric station and the Gatun substation. The present cables between these two points are ten in number and are of No. 0000 size, which corresponds to an area of 212,003 circular mils. The necessary switches, instruments, etc., for these cables have been ordered both for the hydroelectric and the Gatun substation.

In addition, two 4,000 kva power transformers have been ordered for the Gatun substation. These are the largest transformers that can be installed in the existing compartments. There is now one vacant compartment for one of these transformers, and the other compartment will be procured by moving one of the present 2,667 kva to the Cristobal substation, where it will be needed to take care of the increased load at that point, due to the operation of the new coaling plant, and the new terminal piers, and to the projected submarine base at Cristobal.

### Arrival of the Tug Engineer.

The 200-ton, 490-horsepower tug *Engineer*, purchased from the Engineer Department, U. S. A., for \$40,000, for use as a tow boat on

the canal, arrived at Cristobal at 3 p. m., April 8. The ship left New York at 3 p. m., March 4, was delayed by bad weather, and was next reported leaving Southport, S. C., on March 16. She left Jacksonville for Key West at 1.30 p. m., on the 19th, arrived at Key West at 3 p. m., on the 21st; arrived at Kingston on March 31st where repairs were made; departed from Kingston April 5, arrived at Cristobal April 8.

### Repairs to Submarines.

Submarine C-4 was undocked on Friday, April 7, from the dry dock at Cristobal, after having remained in dock for about three months to permit removal of the batteries for examination of battery tanks, and making such repairs as might be necessary to them. At the same time her machinery and batteries are receiving a general overhauling. Her batteries still remain to be reinstalled before she can go into service. After the completion of work on C-4 the other four vessels of the flotilla will receive similar attention, as a precautionary measure against the possibility that leaks from the batteries may have affected the structure of the vessels.

### Sale of Obsolete Equipment.

Two 95-ton Bucyrus steamshovels have been sold to the Birmingham (Alabama) Slag Company at \$2,500 each, and cable inquiry has been received concerning the sale of two more. This company has also bought a twenty-ton locomotive crane for \$1,800, and eight Star well drills at a price that covers actual cost, on the condition however that, if these prove of value in the quarries of the company, a large number of others will be purchased at the list price. The pieces of equipment purchased will go forward on the *Cristobal*, April 19.

No shipments of scrap have been made since December because of the shortage of ships, although 50,000 tons already sold are held for shipment.

The main storehouse at Mount Hope will be cleared by July 1.

### Passenger Service, West Side of the Canal.

During the period when dredging operations in the Cut make it desirable to have the Canal open to navigation only between the hours of noon and 6 p. m., the pontoon bridge at Paraiso will not be used between those hours. Trains will run as scheduled from points west of the Canal to Pedro Miguel Locks, where transfer will be made on foot across the locks to the main line at Pedro Miguel. A shuttle train service between Panama and Pedro Miguel will take care of the passengers on trains 35 and 36. See time table elsewhere in this issue.



## CARGO CONCESSION.

## Amount of Cargo Awaiting Movement in Various Directions.

Prior to the European troubles, all coastwise lines terminating at Cristobal and Balboa operated on regular schedules with well laid out itineraries arranged so that prompt connections were usually effected. These schedules were usually on a fortnightly, semimonthly and monthly basis, and each line figured on arriving at either terminus so as to effect a connection with a lay-over of not more than ten days.

Since the war broke out one of the European lines has withdrawn its service entirely, while two others make Cristobal a port of call only once in every two or three months, and at present no line calls more often than once every 30 days. The war similarly affected lines on the Pacific coast, particularly, those whose ships were sailing under belligerent flags.

The result is, that cargo now put off on the Isthmus is meeting with a very sluggish movement in both directions. In addition to this, since the Canal became inoperative during the middle of September, South Pacific coastwise lines have been offered a large increase in freight, due to the withdrawal of steamers that formerly carried cargo through the Canal in one bottom.

Steamers that put cargo off on the Atlantic side are of a larger tonnage capacity than steamers operating on the Pacific side, and this has caused cargo to accumulate in greater quantities than some of the South Pacific carriers (particularly those destined to Chilean ports), can take it away; notwithstanding their increased sailings, and operation on a basis of every seven days.

With the Pacific steamers operating now on a 7-day schedule and bringing forward unprecedented cargoes, due to the withdrawal of through steamers caused by the Canal being closed, along with the irregular sailings of connecting ships on the Atlantic side, an accumulation of cargo has resulted on the Atlantic piers. This accumulation of cargo on both sides (which is in excess of pier capacity), has in turn caused approximately 75 per cent of the railroad equipment to be tied up under load with steamship freight awaiting bottoms to take it forward.

Aside from this, there is a large amount of cargo now offering for and via New York. At present, the Panama Railroad Steamship Line is the only line which is accepting cargo for New York, and it is operating six steamers between Cristobal and New York, which have a monthly carrying capacity of approximately 20,000 tons.

During the past six weeks, cargo for New York received on the Isthmus has been almost twice this amount, and it is anticipated that unless the Panama railroad can secure additional bottoms, or the United Fruit Company will participate again in lifting New York cargo from the Isthmus, restrictions may have to be made limiting the amount of cargo that may be brought forward by each line.

During the past three months overflow cargo awaiting movement has been as follows:

West coast—Central America, Mexico, San Francisco, 200 to 3,000 tons. Intermediate, Balboa to Buenaventura and Guayaquil, 200 to 1,300 tons. Guayaquil proper, 100 to 700 tons. Peruvian ports, 200 to 2,500

tons. Chilean ports, 4,500 to 10,000 tons. Atlantic connections—Spanish Line, 300 to 1,500 tons. Italian Line, 400 to 3,200 tons. French Line, 200 to 2,600 tons. Leyland and Harrison (English), 200 to 2,300 tons. United Fruit Company, 2,200 tons. Panama Railroad Steamship Line, 1,000 to 23,000 tons.

## Embargo on Cargo for "La Veloce."

The following notice has been sent to all steamship agents and steamship agencies on the Isthmus:

"The La Veloce Steamship line advise that they cannot accept any more cargo until further notice. The Panama Railroad Company will refuse to accept all cargo for that line enroute after April 6."

## Repairs to Panama Railroad Shps.

The New York office of the Panama Railroad Company has notified the Isthmian office that the *Colon* will be taken off the schedule for a period of 40 days following its arrival in New York from its present voyage, in order that important repairs to engine foundations and tank may be made. When these are completed the *Colon* will be returned to the service, and the *Panama* will be laid up for the same purpose. The *Cristobal* will take the place of these ships in the regular schedule.

## Fresh Chicken for Canal Trade.

During the recent eclipse of the sun on the Isthmus, the chickens went to roost.

The method approved by the Department of Agriculture for fattening chickens is based upon their instinct of going to sleep whenever it becomes dark. A chicken house has been erected at Cristobal near the abattoir in which chickens will be fattened for the canal trade, with the object eventually of doing away with the use of cold storage chickens. Fifty-six coops, each capable of holding from five to eight chickens, have been installed in the house, and as the trade grows the capacity will be increased. The chickens to be fattened will be purchased in the local market, and placed in the coops. They will have no chance to exercise, and therefore the muscles will become soft. Curtains will be hung around the house to darken the interior, and three times a day these will be raised. Then the chickens will awaken and be fed. This regimen will be continued from seven to ten days, when the chickens will be taken to the abattoir and killed and dressed. After a few days in cold storage they will be placed upon the market. The diet to be tried first consists of skimmed milk, flour, and tallow.

The object is to improve the quality of chicken meat offered for sale, not to reduce the price.

At present about 300 cold storage chickens are sold daily by the commissaries.

## Fire Protection in Balboa Railroad Yard.

As additional precaution against fire, a water main 3,700 feet in length will be installed in Balboa yard with hydrants at three hundred foot intervals. The present main will be extended along the west side of the repair track north to the end of that track, cross from the east to the west side of the main line freight track, north to Diablo cabin.

The concrete floor on Pier No. 7 at Cristobal is completed, and practically all of the paving outside the shed has been done. Erection is in progress on the steel shed.

## CIVIL SERVICE EXAMINATIONS

Market Station Assistant. Oil Gauger. Assistant Alloy Chemist. Laboratorian. Associate Engineer—Physicist. Valuation Analyst. Head Nurse.

The United States Civil Service Commission announces an open competitive examination for market station assistant, for both men and women, on May 17, 1916. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Office of Markets and Rural Organization, Department of Agriculture, for duty in Washington, D. C. and in the field, at salaries ranging from \$1,000 to \$1,400 per annum, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Practical questions.....	40
2. Thesis or discussion (to be delivered to the Examiner on the day of the examination).....	40
3. Education, training and experience.....	20
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary of the Civil Service Board of Examiners, Balboa Heights, Canal Zone.

Applicants for this examination are referred to announcement No. 502, posted at all club houses and postoffices.

## OIL GAUGER (MALE.) \$1,200.

The United States Civil Service Commission announces an open competitive examination for oil gauger, for men only, on May 17, 1916.

From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the office of Indian Affairs, Department of the Interior, for service in Oklahoma, at a salary of \$1,200 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be to the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The duties of this position will be those ordinarily performed by gaugers, in the oil field, including measuring with rod, oil gauge, water detector, etc., the amount of oil, etc., in the oil tanks under his charge. He must be familiar with the methods of strapping oil tanks and applying formulae for computing their capacity. He must be able to determine the amount of water, sediment, etc., in crude oils, and to compute changes in volume due to variation in temperature.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Spelling (twenty words of more than average difficulty).....	10
2. Arithmetic (fundamental rules, fractions, weights, and measures, percentage, interest, discount, commission, custom house business, stocks and bonds, partnership, analysis, and statement of simple account).....	10
3. Penmanship (the legibility, rapidity, neatness, and general appearance of the competitor's handwriting in the subject of report writing).....	10
4. Report writing (an orderly, concise, and grammatical statement, not more than 200 words in length, of the essential	

facts included in a given statement of 400 to 500 words.....	10
5. Copying and correcting manuscript (test in making a smooth corrected copy of a draft of manuscript which includes erasures, misspelled words, errors in syntax, etc.).....	10
6. Experience.....	50
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary of the Board of Civil Service Examiners, Balboa Heights, Canal Zone.

Applicants are referred to announcement No. 508, posted at all clubhouses and post offices in the Canal Zone for further information.

#### ASSISTANT ALLOY CHEMIST (MALE.)

The United States Civil Service Commission announces an open competitive examination for assistant alloy chemist, for men only, on May 17-18, 1916. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position at a salary of \$1,620 per annum in the Bureau of Mines, Department of the Interior, for duty at Ithaca, New York, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The duties of this position will consist of assisting in an investigation covering the methods of preparing nonferrous alloys, the furnaces and other appliances used in their manufacture, and the prevention of waste in their production.

Applicants should have a knowledge of physical chemistry, with special reference to the phase rule and its application to commercial and scientific problems; and a reading knowledge of French and German.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.....	Weights.....
1. Physical and electro chemistry.....	35
2. French and German.....	10
3. Microchemistry and metallography.....	25
4. Thesis (to be delivered to the examiner on the day of the examination).....	20
5. Education, training, and experience.....	10
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary of the Board of Civil Service Examiners, Balboa Heights, Canal Zone.

Applicants are referred to announcement No. 507, posted at all clubhouses and post offices in the Canal Zone for further information.

#### LABORATORIAN.

The United States Civil Service Commission announces an open competitive examination for laboratorian, for men only, on May 3, 1916. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in the position of laboratorian at \$4 per diem in the machinery division of the Navy Yard, Mare Island, Cal., and vacancies as they may occur in positions requiring similar qualifications at any navy yard or other naval establishment of the United States, or in the Department at Washington, D. C., unless it is found to be in the interest

of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.....	Weights.....
1. Theoretical and practical questions in electrical science.....	60
2. Education and training.....	40
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for Form 1312, stating the title of the examination for which the form is desired, to the Secretary of the Civil Service Board of Examiners, Balboa Heights, Canal Zone.

Applicants for this examination are referred to announcement No. 451, posted at all clubhouses and postoffices.

#### ASSOCIATE ENGINEER-PHYSICIST.

The United States Civil Service Commission announces open competitive examinations for Associate Engineer-Physicist and for Grazing Assistant, to be held on the Canal Zone about May 7, 1916 (date to be left blank in application).

The former position is in the Bureau of Standards, Department of Commerce, Washington, D. C., or Pittsburgh, Pennsylvania, at salaries ranging from \$2,000 to \$3,000 a year, and vacancies as they may occur in positions requiring similar qualifications.

The latter position is in the Forest Service at a salary of \$1,200 a year.

Competitors are advised to consult announcements Nos. 463, and 464 posted at all clubhouses and Post Offices in the Canal Zone.

Applicants who desire to take these examinations should apply at once for form 2118 for the former examination, and 1312 for the latter, to the Secretary of the Civil Service Board, Administration Building, Balboa Heights, Canal Zone.

#### VALUATION ANALYST.

The United States Civil Service Commission announces an open competitive examination for valuation analyst, for men only. From the register of eligibles resulting from this examination certification will be made to fill several vacancies now existing and other vacancies as they may occur in this position in the Division of Valuation, Interstate Commerce Commission, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

As a result of this examination two grades of eligibles will be established, the salaries in the first grade ranging from \$3,600 to \$5,000 per annum; and in the second grade from \$1,800 to \$3,300 per annum. Entrance salaries are usually fixed at the minimum amount provided for each grade, but in cases of exceptional qualifications the entrance salary may be above the minimum provided for that grade.

Appointment to these positions will be principally for duty in Washington, D. C., but some appointments may be made for duty in the field. Appointees will receive a reasonable allowance for expenses when absent from headquarters in the discharge of official duties.

Competitors will not be assembled for examination, but will be rated on the follow-

ing subjects, which will have the relative weights indicated:

Subjects.....	Weights.....
1. Education.....	30
2. Experience.....	30
3. Reports and writings submitted.....	40
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 2039 and special form, stating the title of the examination for which the forms are desired, to the Secretary of the Local Board of Civil Service Examiners, Administration Building, Balboa Heights, C. Z.

#### HEAD NURSE (OPERATING) FEMALE.

The United States Civil Service Commission announces an open competitive examination for head nurse (operating), for women only, on May 17, 1916. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in Freedmen's Hospital, Washington, D. C., at \$480 a year, together with board, quarters, and laundry, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

1. Anatomy and physiology.....	5
2. Hygiene of the sick room.....	20
3. General nursing.....	20
4. Surgical nursing.....	20
5. Obstetrical nursing.....	20
6. Experience in nursing.....	15
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary of the Board of Civil Service Examiners, Balboa Heights, Canal Zone.

Applicants are referred to announcement No. 506, posted at all clubhouses and postoffices in the Canal Zone for further information.

#### Demolition of American and English Wharves in Panama.

In compliance with the order of the Health Department to make its, so-called, "American" and "English" piers in the city of Panama rat proof or demolish them, the Panama Railroad Company has served notice on the lessees that these piers will be demolished. They have long been used largely for storage purposes by merchants in Panama, and are no longer needed as the new Pier 18 at Balboa and the recently constructed pier of the Panama Government in Panama will serve every necessity of the old piers.

The "American" wharf or pier is leased in sections to various merchants, who pay five dollars a month for space, and the rental never amounts to more than sixty dollars a month. Notice has been served upon the lessees that 30 days after April 8 the demolition of the wharf will be begun.

The "English" wharf is leased to Pinel Brothers of Panama at an annual rental of \$250, under a lease entered into on July 1, 1910 for a period of 15 years, with a stipulation that the lessor may terminate the lease at any time upon 90 days notice. This notice has been served, and demolition of the wharf will begin about July 7.

## BUILDING CONSTRUCTION.

## Work Completed, Under Way, and About to Begin.

The new buildings for Colon Hospital were turned over to the Health Department on April 10. On June 1, the first of the new hospital buildings at Ancon will be ready for occupancy, and work on the second of these buildings may be begun this month.

At cut May 15, the new ice making and cold storage plant at Balboa will be ready for use. Bachelor quarters at Ancon, the large concrete structure; the office building at the Pacific terminus of the Canal; the office building at Cristobal coaling plant, and the new laundry building at Ancon will be finished about the middle of June.

appropriations for new quarters on the 1sthus.

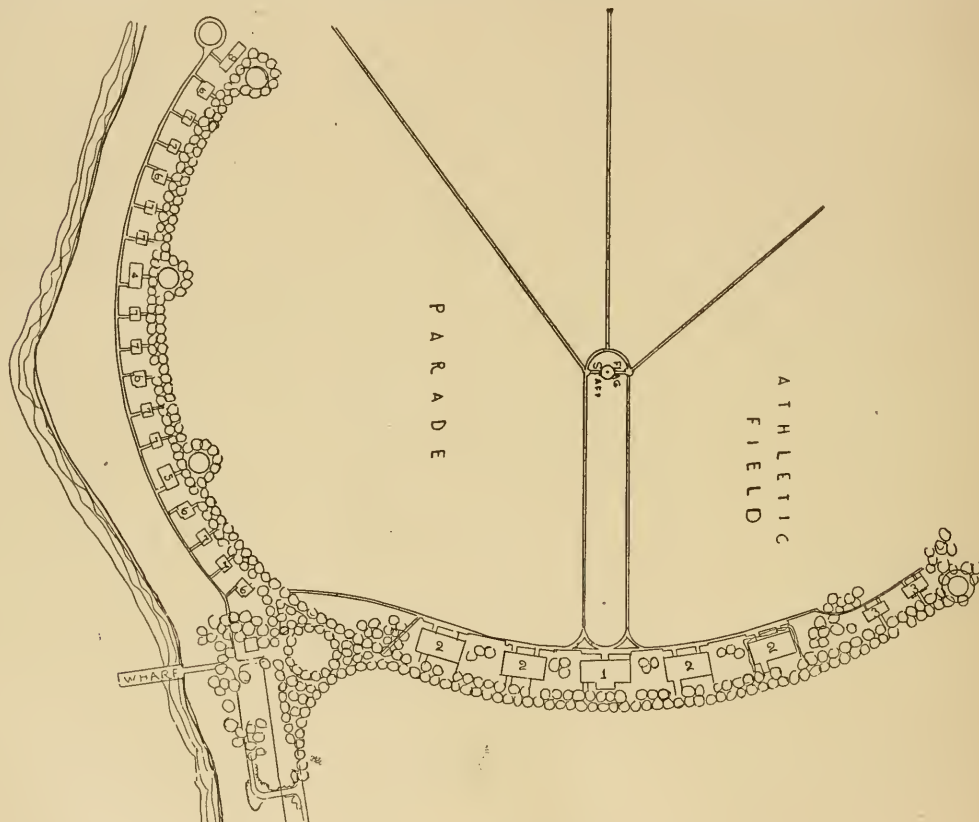
## Balboa Ice and Cold Storage Plant.

The ice making and cold storage plant at Balboa will probably be ready for occupancy about May 15. It has a capacity of two hundred tons of refrigeration each 24 hours. The building which houses this plant is situated behind the Balboa commissary, and is 237 feet 6 inches long, 73 feet 4 inches wide, and one story high. In the middle of the building is the compressor room occupying the full width and 40 feet four inches long. The front and rear elevations of this section are treated architecturally, but the remainder of the building is plain wall.

reciprocating floor pump driven by a two horsepower motor, and electric cranes and hoists for use in lifting cakes of ice from the tanks. Each freezing tank contains 696 cans for making ice, and each can has a capacity of 300 pounds of ice. It will require 50 hours for freezing a cake.

An ice storage room full width of the building and 35 feet 2 inches long, divided into ten compartments, each insulated from the others; and a cold storage room 75 feet long and full width of the building, divided into 26 compartments, occupy the balance of the building. It is possible that a small section of the building will be set off as a retail salesroom, but this has not been determined.

A loading platform 12 feet 2 inches wide



LAYOUT, FORT RANDOLPH, MARGARITA ISLAND—(1) HEADQUARTERS. (2) BARRACKS. (3) NONCOMMISSIONED OFFICERS. (4) COMMANDING OFFICER. (5) FIELD OFFICER. (6) CAPTAINS. (7) LIEUTENANTS. (8) BACHELOR LIEUTENANTS.

The post buildings at Fort Randolph, Margarita Island, are occupied and work will be completed this month.

A dairy building for Cristobal cold storage plant has been begun.

Building construction at Fort Sherman, Tero Point, will be finished this month.

A requisition has been sent to the States for 8,070,000 feet B. M. of miscellaneous lumber for building purposes. Another requisition for 13,799,640 feet of miscellaneous lumber has gone forward, but letting of a contract is dependent upon action by the Congress on

Two ammonia compressors of the De La Vergne horizontal double acting type, with accessories, constitute the mechanical part of the equipment. Each compressor is driven by a two hundred horsepower motor running on a 2,200 volt alternating current. A pump out machine is belt driven by a 15 horsepower motor.

Two freezing tanks made of steel occupy the tank room, which is 68 by 73 feet 4 inches. In this room are four agitators in pairs driven by 15 horsepower motors, three air blowers belt driven by 7½ horsepower motors, one

runs the length of the building, facing upon a railroad track; and a platform 7 feet 4 inches in width runs along the south end, and a wagon road leads alongside this.

## Coaling Plant Office and Store.

Nearing completion at Cristobal coaling plant is the office and store building, which will probably be ready for occupancy about June 15. This is a one-story reinforced concrete building 109 feet 10 inches long, 38 feet 6 inches wide, roof of imperial Spanish red tile. The office space will occupy 38 feet 6



inches by 34 feet; the store room 41 feet by 38 feet 6 inches; the compressor room 26 feet by 16 feet 6 inches; oil and paint room 26 feet by 14 feet 4 inches.

#### Dairy Building at Cristobal.

A model building for handling ice cream, butter, and milk is under construction at the northeast end of the cold storage plant in Cristobal. It is a two-story structure of reinforced concrete, 91 feet long and 45 feet in greatest width. The cold rooms will be insulated with lith, and the finish throughout will be such as to insure the highest degree of cleanliness. On the ground floor a room will be set aside for each of the following operations or uses: Ice cream brick cutting, tub storage, ice cream hardening, bottling and freezing, bottle washing, office. Second-floor—Milk cooling, milk tempering, ice crushing, kitchen, butter storage, butter printing. The ice cream brick cutting, bottling and freezing, kitchen, and butter printing rooms will have white tile floor and wainscot.

#### Colon Hospital Buildings Completed.

The group of concrete buildings comprising the new Colon Hospital were completed on April 10th and turned over to the Health Department.

The buildings are four in number, arranged in the pavilion plan, with an administration building in the middle, flanked by an east wing for wards, a west wing for a dispensary and private rooms, and a service building in the rear. The operating rooms are on the second floor of the administration building. The buildings are all faced on the sea and take advantage of the prevailing breeze. The hospital will have accommodations for 65 patients, and includes eight private rooms. The transfer of patients from the old buildings to the new Hospital will take place about May 1.

#### Ancon Hospital Buildings.

All the outside work on the new building at Ancon Hospital has been completed, and the workmen are busy on the interior finish—placing of tile, painting, etc. It is expected that the building will be ready for occupancy by June 1. The razing of wards No. 1 and 2, and the small building that joins them to one another, will probably begin this week. Upon the site of these will be erected a two-story concrete building to accommodate wards 1, 2, 3, and 4. This building will be in three parts, one 138 feet long and 42 feet wide, and the other 122 feet long and 42 feet wide, joined by a building 94 feet long and 32 feet wide. Ward No. 1 will be used for female medical cases and will contain 28 beds; No. 2 for male surgical cases, 21 beds; No. 3 obstetrical cases, 24 beds; No. 4 female surgical cases 21 beds. The interior will be divided into rooms of various sizes and there will be a small ward in each building.

#### New Clubhouse at Ancon.

The new clubhouse at Ancon was opened to the public on Saturday night, April 8. It will be conducted by a Secretary of the Y. M. C. A., on the plan of all the other clubhouses.

The building is two stories high, 109 feet 4 inches across the front and 95 feet 2 inches deep. It is built of wood, and part of it includes the building formerly used by the district quartermaster. The entrance looks

towards the little park in front of the Commissary.

On the ground floor, in order through the center of the building, are a lobby, women's room, restaurant and kitchen. On the right of these are a library, secretary's office, six table billiard room, boys' room, and barber shop. On the left are four bowling alleys.

On the second floor a room full depth of the building and 40 feet wide is arranged as auditorium, dance hall, and gymnasium. A stage at the far end is 18 by 23 feet in dimension, and at the front end is a stand for a moving picture machine. Alongside of the auditorium is a reading room. The old lodge hall will remain in use by various lodges.

#### Ft. Randolph, Margarita Island.

The work at Margarita Island, Fort Randolph, is of more interest from the standpoint of landscape effect than from that of architectural treatment of the buildings. The sketch published herewith indicates the layout. The trees bordering walks, and between the various buildings, are almost entirely fruit bearing or nut bearing, the intention being to keep them as part of the food resource in time of need. These include coconut, orange, almonds, limes, avocados, grape fruit, and mangoes. The shrubs and flowering plants chiefly used are hibiscus, crepe myrtle, jasmine, panax victoria, privet, acalypha, croton, graptophyllum, and bougainvillea.

The Prado leading from headquarters to the flag staff will be bordered with Cuban royal palms spaced 30 feet apart, and in a parallel line with these, staggered as to position, will be umbrella almonds.

All of the quarters are of wood, and follow a type prescribed for the Army. The dimensions are as follows:

**Headquarters**—One hundred fifty-four feet 10 inches by 58 feet. **Field Officers**—Fifty-eight and one-half feet by 42½ feet. **Captains**—Forty-seven feet by 31 feet. **Lieutenants**—Forty-three feet by 33 feet 10 inches. **Non-commissioned Officers**—Seventy-six feet by 30 feet. **Barracks**—One hundred twenty-three and one-half feet by 64 feet.

#### Native Beef and Bologna Sausage.

Fifty-five head of beef were killed at the Commissary abattoir one day last week, the largest kill made in one day. The use of native beef from the Commissary abattoir began about a year ago when five head were killed. The plant has a capacity of one hundred fifty head a day. While the native beef is rapidly taking the place of that imported from the United States, the Canal population has not yet learned the value and economy of the use of the forequarters. On this account, the supply of forequarters is greater than the demand. It is proposed, and machinery has been purchased, to make the quarters not sold into bologna sausage, in which form it is believed the meat will be eagerly sought.

A new cap which fits over the head of milk bottles, instead of within the neck, has been adopted by the Commissary for its work of bottling fresh milk brought from the States. The cap is held in place by a metal ring crimped upon the neck of the bottle, and is removed by pushing this ring downwards, releasing the ends of the cap.

## JOINT LAND COMMISSION.

### Umpire of Joint Land Commission.

Vice Admiral of the Navy of Spain, Don Victor Maria Concas Palau, who has been designated to act as Umpire for the Joint Land Commission, arrived at Colon on the *Montserrat* from Spain on April 10.

### Appointment of Member of Joint Land Commission.

THE PANAMA CANAL, EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., April 8, 1916. CIRCULAR No. 601-49: The Executive Order quoted below is published for the information of all concerned.

GEO. W. GOETHALS, Governor.

By direction of the President it is ordered:

That Clement L. Bouvé, who has been appointed a member of the Joint Commission for the appraisal and settlement of damages to property in the Canal Zone, in accordance with the provisions of Articles Six and Fifteen of the Convention between the United States and Panama, con-luded November 18, 1903, be allowed Twenty-five (\$25) dollars per day for his services, including all expenses, from the time of his sailing from New York until his return thither; provided that he shall be granted free transportation on the Panama Railroad Steamship Line from New York to the Isthmus and return, free transportation over the Panama Railroad, and such other transportation as may be necessary when traveling on official business on the Isthmus; he shall also be allowed the ordinary privileges of Government employes on the Isthmus, including employes' rates at the hotels of The Panama Canal or the Panama Railroad Company on the Isthmus.

NEWTON D. BAKER, Secretary of War.

WAR DEPARTMENT, Washington, D. C., March 25, 1916.

### Calendar.

The following is a calendar of claims set for hearing as indicated for the week, ending April 22:

**Monday, April 17**—Docket No. 524, Pablo Jura to E., reargument.

**Tuesday, April 18**—Docket No. 1024, Francisco Castillo, reargument; Do-let No. 1164, Antonio Ensenat, reargument.

**Wednesday, April 19**—Docket Nos. 90 and 90-A, Ora Miller, argument on motion of counsel for U. S. to grant rehearing; and on motion of counsel for claimant to dismiss motion to rehear.

**Thursday, April 21**—Docket Nos. 976 and 1746, Bonifacio Segura, argument on motion of counsel for the United States to grant a rehearing.

WILLIAM TAYLOR, Secretary.

### Recommendations for Promotion.

The Washington Office of The Panama Canal has circulated the following for the information and guidance of employes: Paragraph 3 of Civil Service Rule XI—

"3. No recommendation for the promotion of a classified employe shall be considered by any officer concerned in making promotions, unless it be made by the person under whose supervision such employe has served, and such recommendation by any other person, if made with the knowledge and consent of the employe, shall be sufficient cause for debarring him from the promotions proposed, and a repetition of the offense shall be sufficient cause for removing him from the service."

### Alien Soldiers Exempted from Head Tax.

The Department of Labor has issued general instructions to its immigration officers that no alien tax shall be assessed or collected on account of soldiers or discharged soldiers of the Army returning to the United States.

Plans are being made for illumination of the berm cranes at the Balboa coaling plant to the end that they may be worked at night.

## ADVANCE IN PRICES.

## Commissary Supplies Begin to Feel Direct Force of the War.

Whereas an abnormal increase in prices of imported articles has been apparent since the beginning of the European War, this did not affect the home market to any considerable extent until about the first of this year.

Owing to the scarcity of raw material, United States as well as European manufacturers are experiencing the utmost difficulty in production, especially in the case of articles using chemicals, cotton or metal.

The market is continually changing, not fluctuating. There is a steady upward advance. Not only is this true of the lines mentioned but also of ink, twine, wrapping paper, etc. Inks that cost 20 cents per pound before the beginning of the war are now costing \$1.50 per pound. Wrapping paper has increased 100 per cent, as has also twine.

Cooking utensils, and aluminum ware in particular, because of the unprecedented shortage of raw material, are gradually advancing.

Dress goods, men's furnishings, leather goods, for the same reason are costing more with every purchase.

As regards supplies from Europe, no imports are obtainable from Germany, and very few from France. Manufacturers in Great Britain are able to make occasional shipments of such goods as chinaware, groceries, linens, but owing to the scarcity of labor, it is necessary to place orders from six to nine months in advance, whereas before the war orders could be completed in from one to three months after receipt.

Not only has the high cost of raw material increased prices, but, owing to the taking over of steamers by the British Government for transporting troops and supplies, freight rates have advanced. The risk of shipping from the "war zone" has also increased the cost of insurance, adding from 10 to 25 per cent to actual cost, according to the commodity.

While the advance in price of many imported articles is hardly noticeable to the consumer, the fact remains that the cost of all manufactured articles is increasing. Comparison of retail selling prices of a few items, for example, is shown below:

	1 year ago.	Now
Blankets.....	\$1.70	\$2.20
Bowls, salad.....	1.10	1.35
Bowls, sugar.....	2.25	2.50
Cups and saucers.....	1.65	1.80
Dishes, bakers.....	2.95	3.20
Condensed milk.....	.10	.12
Leather collar boxes.....	1.15	1.35
Leather suit cases.....	16.65	20.50
Leather leggings.....	3.65	4.05
Plates, dinner.....	1.60	1.80
Plates, breakfast.....	1.40	1.60
Soup, soup, plain.....	.05	.06
Tea, lb.....	.56	.60
Raincoats, ea.....	7.90	8.30
Cloths, sideboard.....	.65	.72
Serge, black, yd.....	2.70	3.20
Linen table sets, set.....	4.15	4.85

## Yellow Fever Work at Buenaventura.

At the request of the Government of Colombia a physician of The Panama Canal, Dr. E. P. Beverley, and a Sanitary Inspector, Mr. Joseph A. Corrigan, have been allowed leave of absence in order that they may spend three months at Buenaventura, inaugurating sanitation work against yellow fever. The steamship *Jamaica*, which sailed last week, carried \$4,000 worth of material to be used in this work, including sulphur, pyrethrum, canvas, paper, and garbage cans.

## OFFICIAL CIRCULARS.

## Coupon Books for Silver Roll Employees.

## THE PANAMA CANAL.

## EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., April 4, 1916.

To all concerned—Effective this date the forwarding of coupon books to silver employees for delivery to other employees will be discontinued, and such books heretofore sent to silver employees will be forwarded for delivery to such gold employees as may be designated by the heads of the various divisions.

C. A. McILVAINE,  
Executive Secretary.

## Requests for Free Entry.

## THE PANAMA CANAL,

## SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., April 3, 1916.

BULLETIN No. 614:  
To commissary managers—The following circular issued by the Chief Quartermaster under date of March 31 is republished for the necessary attention on your part:

"To all concerned—All employees of the Supply Department who desire the free entry of merchandise coming to the Isthmus either by mail or freight, will submit the necessary forms through the head of their division. No forms will be accepted by this office and forwarded to the Executive Secretary for approval, unless they bear the initials of the head of the division in which the employee making the request is employed."

These forms should be submitted through this office.

BENJ. L. JACOBSON,  
Depot Commissary.

## Royal Doulton Ware.

## THE PANAMA CANAL,

## SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., April 7, 1916.

BULLETIN No. 618:

To commissary managers—We have been unable to procure Royal Doulton coaching and hunting ware in sufficient quantities. Whenever the small quantities received on the Isthmus are distributed to retail stores, dissatisfaction results.

Effective at once Royal Doulton coaching and hunting ware will be shipped to stores so long as "Deposits" are on file in this office for the same.

Please advertise this fact, and accept deposits for these items, with the understanding that the goods will be delivered upon receipt at Cristobal, and with the further understanding that additional collections will be made, or refund notes will be issued when the actual prices of the items are ascertained.

Deposits should be accepted at the latest advertised retail price and transmitted to this office, where all orders will be held and filled in order of their receipt.

BENJ. L. JACOBSON,  
Depot Commissary.

## Cheese and Cauliflower.

## THE PANAMA CANAL,

## SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., April 7, 1916.

MEMORANDUM No. 64:

To commissary managers—As there was no Edam cheese obtainable in the New York market for shipment on the steamship *Allianza*, arriving yesterday, we will continue to be out of this item.

The New York office also advises that our order for cauliflower was cancelled on account of the price being too high.

Please bring the above to the attention of your trade.

BENJ. L. JACOBSON,  
Depot Commissary.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, April 19, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filing out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same. The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boat

will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour stated above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, April 21, 1916, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board.  
GEORGE J. VAN DER LEE,  
Recorder, Board of Local Inspectors.

## Misdirected Letters.

The following insufficiently addressed letters and papers have been received at the office of the Director of Posts and may be procured upon request of the addressee:

Bradley, Chas. W.*	Pana-American Ice Co.
Carter, Maj. J. M. S.	Rowe, Venson R.
David, R. H.	Simons, J. E.
Hatley, Ben	South American Supply Co.
Anderson, Spt. W. D. A.	Perez, Miss Carmen Felicia
Becker, Mrs. Anna	Reynolds, C. L.
Coffman, Lester	Richards, Mrs. L. S.
Dowling, J. S.	Rose, John
English, P. X.	Sampson, Miss Florence M.
Gray, Liet, W. M.	Stevens, Wm. P.
Hunt, James E.	Thomas, M.
Lawton, Thos.	Verthman, A. B.
Marten, Edwin	Vaustenberg, Chas. F.
Murtha, Richard	Wiggins, Roy W.
Nixon, Mrs. C. C.	

\*Paper.

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, April 8, 1916.

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gamboa	Gatun Lake	Miraflores Lake
Sun., April 2, .....	124.95	91.29	96.16	10.53	88.88
Mon., April 3, .....	124.99	91.25	106.80	0.53	85.05
Tues., April 4, .....	125.05	91.22	6.10	0.63	80.30
Wed., April 5, .....	125.20	91.54	6.08	0.66	85.93
Thurs., April 6, .....	125.05	91.38	0.56	0.80	85.94
Fri., April 7, .....	124.95	91.36	0.26	0.40	85.84
Sat., April 8, .....	124.95	91.16	0.86	0.03	85.99
Heights of low water to nearest foot.....	125.0	91.0			

## Rainfall from April 1 to 8, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>			
Balboa.....	.12	8	.12
Balboa Heights.....	.05	8	.06
Miraflores.....	.04	2	.07
Pedro Miguel.....	.04	3	.04
Rio Grande.....			.00
<i>Central Section—</i>			
Culebra.....	.35	4	.42
*Camacho.....	.23	4	.25
Empire.....	.12	8	.15
Gamboa.....	.25	4	.32
*Juan Mina.....	.04		.00
Alhajuela.....	.04	4	.04
*Vigia.....	.05	4	.05
Pringles.....	.08	8	.10
*Monte Lirio.....	.17	5	.26
<i>Atlantic Section—</i>			
Gatun.....	.04	4 & 5	.10
*Brazos Brook.....	.08	5	.13
Colon.....	.07	8	.17
Bocas del Toro.....			.00

\*Standard rain gage—readings at 5 p. m. daily.  
Automatic rain gage at unstarred stations—values, midnight to midnight.

†Standard rain gage—readings at 8 a. m. daily.

## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., April 9, 1916.)

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
April 8....	Puerto Rico.....	French Line.....	Saint Nazaire.
April 8....	Buford.....	U. S. Army Transport.....	New York.
April 8....	Cayma.....	Elders & Fyffes.....	Port Limon.
April 8....	Siskiyau.....	E. K. Wood Lumber Co.....	New Orleans.
April 8....	Engineer (tug).....	The Panama Canal.....	New York.

## \*DEPARTURES.

Date	Vessel	Line	For
April 4....	Niagra.....	French Line.....	Saint Nazaire.
April 8....	Cania.....	Elders & Fyffes.....	Bristol way pts.
April 8....	Engineer (tug).....	The Panama Canal.....	.....

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From
April 10....	Montserrat.....	Spanish Line.....	Barcelona.
April 10....	Harima Maru.....	East Asiatic S. S. Co.....	New York.
April 10....	Gilgai.....	Goshi Kaisha Kishointo Shokai.....	New York.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	For
April 10....	Lewis Luckenbach.....	Luckenbach Line.....	San Francisco.
April 10....	Oylerie.....	Bank Line.....	San Francisco.
April 10....	Windber.....	Pacific-American Fisheries.....	Bahoa.
April 10....	Jacob Luckenbach.....	Luckenbach Line.....	Los Angeles.
April 12....	Montserrat.....	Spanish Line.....	Barcelona.
April 13....	Puerto Rico.....	French Line.....	Saint Nazaire.
.....	Siskiyau.....	E. K. Wood Lumber Co.....	Canal.
.....	Buford.....	U. S. Army.....	.....

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

Date	Vessel	Line	From
April 3....	Alicia.....	Panama Transport Company	Camp Sabbath.
April 4....	Salvador.....	Pacific Steam Nav. Co.....	Taboga.
April 4....	Aysen.....	North Pacific S. S. Co.....	Valparaiso.
April 5....	Ucayali.....	Peruvian Steamship Co.....	San Francisco.
April 6....	La Primera.....	Standard Oil Co.....	San Francisco.
April 6....	Neuport.....	Pacific Mail Steamship Co.....	San Francisco.
April 8....	Alicia.....	Panama Transport Co.....	Camp Sabbath.

## DEPARTURES.

Date	Vessel	Line	For
April 4....	Imperial.....	South American S. S. Co.....	Valparaiso.
April 6....	Salvador.....	Pacific Steam Nav. Co.....	Salina Cruz.
April 7....	Montano.....	Peruvian Steamship Co.....	Callao.
April 7....	La Primera.....	Standard Oil Co.....	San Francisco.
April 8....	Jamaica.....	Pacific Steam Nav. Co.....	Tumaco.

## EXPECTED ARRIVALS.

Date	Vessel	Line	From
April 10....	Peru.....	Pacific Steam Nav. Co.....	Valparaiso.
April 11....	Salvador.....	North Pacific S. S. Co.....	Valparaiso.
April 11....	Geo. W. Elder.....	North Pacific S. S. Co.....	San Francisco.
April 13....	Nissei Maru.....	Okazaki Kisen Kabushiki Kaisha.....	Antofagasta.
April 15....	Suecia.....	Johnson Line.....	Chile.
April 15....	Santa Clara.....	Atlantic & Pacific S. S. Co.....	Chile.

## EXPECTED DEPARTURES.

Date	Vessel	Line	For
April 10....	Manana.....	Pacific Steam Nav. Co.....	Guayaquil.
April 10....	Aysen.....	South American S. S. Co.....	Valparaiso.
April 11....	Ucayali.....	Peruvian Steamship Co.....	Valparaiso.
April 13....	Neuport.....	Pacific Mail Steamship Co.....	San Francisco.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective April 7:

ARTICLE.	Old.	New.
Bedsprings, ea.....	\$1.20	\$1.40
Blankets, ea.....	1.40	1.65
Bonnet, collar, yd.....	.04	.07
Cards, playing, pack.....	.30	.33
Cloths, sideboard, ea.....	.65	.72
Coats, Palm Beach, ea.....	3.05	3.35
Combs, ea.....	.19	.15
Crepe de Chine, yd.....	.43	.55
Curtain, yd.....	.14	.16
Quiltlets, pr.....	.85	.98
Hats, ea.....	1.40	1.10
Hose, men's, pr.....	.17	.20
Pajamas, suit.....	1.35	1.60
Rackets, tennis, ea.....	6.60	7.25
Ribbon, yd.....	.12	.16
Ribbon, yd.....	.15	.18
Ribbon, yd.....	.18	.20
Ribbon, yd.....	.10	.12
Ribbon, yd.....	.05	.06
Ribbon, yd.....	.06	.08
Ribbon, yd.....	.08	.10
Ribbon, yd.....	.07	.10
Ribbon, yd.....	.08	.13
Ribbon, yd.....	.31	.41
Sheets, 90" x 90", ea.....	.80	.90
Skins, chamois, ea.....	.27	.32
Suits, bathing, suit.....	3.20	3.65
Suits, bathing, suit.....	1.05	1.30
Thimbles, ea.....	.01	.03
Umbrellas, ea.....	.80	1.00
Umbrellas, ea.....	1.95	2.55
Umbrellas, ea.....	.68	.86

## Additions to Stock.

Serge, blue, yd.....	\$2.80
Serge, blue, yd.....	2.55
Serge, cream, yd.....	2.55
Serge, gray, yd.....	2.90
Voile, s, lash cord, yd.....	.18
Voile, mercerized, embroidered, yd.....	.43
Noodles, lb., pkg.....	.07
Relish, tomato, 8-oz., tin.....	.09
Sardines, boneless, 1/2 tin.....	.19
Tobacco, Lucky Strike, 2-oz., tin.....	.10
Flour, whole wheat, 11-lb., tin.....	.19

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, April 13, 1916:

FISH.	Price.
Fresh fish, per lb.....	.11
Turtle (wt. 100 to 200 lbs.), per lb.....	.07
FRUITS.	
Coconuts, dry, ea.....	.04
Coconuts, water, ea.....	.05
Pineapples, ea.....	.12
Sugar cane, ea.....	.03
Plantain, ea.....	.01
VEGETABLES.	
Celery, soup, per bunch.....	.04
Ginger, per lb.....	.04
Mint, per bunch.....	.04
Okra, ea.....	.00
Onions, green, per bunch.....	.04
Parsley, per bunch.....	.04
Radishes, per bunch.....	.04
Spinach, per bunch.....	.02
Yampi, per lb.....	.04

\* Indicates advance from last list.  
† Indicates reduction from last list.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

New Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, April 3 and May 1, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10

a. m., connects with the despatches for the sailing on May 1.

†When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Sailings of Vessels in Regular Service with the United States.

Vessel.	Line.	Sails.	Arrives.
Carrillo.....	U. F. C.	April 5.....	April 12
Colon.....	P. R. R.	April 6.....	April 12
Tenadores.....	U. F. C.	April 8.....	April 16
Santa Maria.....	U. F. C.	April 12.....	April 19
Advance.....	P. R. R.	April 13.....	April 20
Metapan.....	U. F. C.	April 15.....	April 24
Panama.....	P. R. R.	April 20.....	April 26
Alliancia.....	P. R. R.	April 27.....	May 3
Colon.....	P. R. R.	May 4.....	May 11

## CRISTOBAL-COLON TO NEW YORK.

Vessel.	Line.	Sails.	Arrives.
Panama.....	P. R. R.	April 6.....	April 12
Almirante.....	U. F. C.	April 6.....	April 13
Pastores.....	U. F. C.	April 10.....	April 17
Alliancia.....	P. R. R.	April 13.....	April 19
Zacapa.....	U. F. C.	April 13.....	April 20
Calamaries.....	U. F. C.	April 17.....	April 24
Colon.....	P. R. R.	April 17.....	April 26
Carrillo.....	U. F. C.	April 20.....	April 27
Advance.....	P. R. R.	April 27.....	May 4
Panama.....	P. R. R.	May 4.....	May 10
Alliancia.....	P. R. R.	May 11.....	May 17
Colon.....	P. R. R.	May 18.....	May 24

## NEW ORLEANS TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
Heredia.....	U. F. C.	April 8.....	April 15
Parismina.....	U. F. C.	April 12.....	April 17
Abangares.....	U. F. C.	April 15.....	April 22
Atenas.....	U. F. C.	April 19.....	April 24
Carigato.....	U. F. C.	April 22.....	April 29
Heredia.....	U. F. C.	April 26.....	May 1

## CRISTOBAL-COLON TO NEW ORLEANS.

Vessel.	Line.	Sails.	Arrives.
Abangares.....	U. F. C.	April 9.....	April 14
Atenas.....	U. F. C.	April 9.....	April 17
Carigato.....	U. F. C.	April 16.....	April 21
Heredia.....	U. F. C.	April 16.....	April 26
Parismina.....	U. F. C.	April 23.....	April 28
Abangares.....	U. F. C.	April 23.....	May 1







## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

For delivery in other countries, to which the paper must be forwarded under foreign postal rates, a charge of 50 cents is added for postage, making the subscription \$1.50 per year.

Yearly subscriptions are entered as beginning at the first of the quarter of the year in which received, and expire at the beginning of the corresponding quarter of the following year. When subscriptions are received after the beginning of a quarter the back numbers which have been issued during that quarter will be forwarded when available.

The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

Bound volumes of The Canal Record, 1 to VIII, inclusive, are for sale at \$3.50 each.

Remittances for subscriptions or for bound volumes may be forwarded to The Panama Canal, Washington, D. C., U. S. A., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,

Isthmus of Panama.

### NOTES OF PROGRESS.

#### Traffic through the Canal.

After being closed to traffic for seven months the Canal was reopened on April 15th, 15 ships making the transit on that date. Following are the names of the ships in the order of passage:

#### SATURDAY, APRIL 15.

Northbound: *St. Veronica, Cetrana, Edith, Crown of Seville, Harry Luckenbach, Sommerstad and Alfred Nobel.*

Southbound: *Cyrus W. Field, Oyleric, Lewis Luckenbach, Buford, Jacob Luckenbach, Windber, Gilgai, and Eureka.*

#### SUNDAY, APRIL 16.

Northbound: *Florence Luckenbach, Copenhagen, Kim, American, and Thode Fageland.*  
Southbound: *Tenryrus Maru, Harima Maru, Chimu, Luz Blanca, and Palstria.*

#### MONDAY, APRIL 17.

Northbound: *Capac, Selandria, Gwladys, Consols, Solano, and San Juan.*

This was the maiden trip of the *San Juan* through the Canal and the first Pacific Mail ship to use the Canal.

Southbound: *Arabian and Foreric.*

The deepest draft ship making the transit during these three days was the *Arabian*, drawing 28.3 feet.

No unusual incidents marked the reopening of the Canal.

#### Blasting Cofferdam at Pacific Terminals, Balboa.

The areas occupied by the unloader wharf, entrance pier and basin, and dry dock No. 1,

have been protected from the sea during construction by a cofferdam consisting of earth fill dumped upon the underlying mud and rock. This cofferdam extends from the west end of the unloader wharf across the entrance basin to the west end of the entrance pier and around it to the north side of the dry dock. It is now being removed.

Approximately 75,000 linear feet of holes were drilled in the cofferdam by means of well drills. On account of the proximity of the cofferdam to the masonry structures, it is considered necessary to blast in several separate operations, rather than shoot it all out in one operation, and with one blast. The method followed thus far, and to be followed still further, is to blast off the outer, or water edge, until the cofferdam section is narrowed down as far as is considered safe to do so and prevent the water from flooding the dry dock from any accidental break in the dam.

The first shot was set off on March 10, and consisted of 45 holes. The second blast took place on April 15, about 3,500 pounds of dynamite being used. On April 7, the third shot was set off, and preparations were begun for a shot to be made on Wednesday, April 19. The first shot which will blast the rock from the outer edge of the cofferdam through to the inner edge will be the largest, but it will be held down to as small an amount of dynamite as is possible. This shot will be made next week, and will be the final shot. Before this blast is set off dredge No. 85 will pump water over the cofferdam and entrance basin into the dry dock until the water has reached an elevation a little below low tide. The gate leaves will be left open, and the reinforced concrete pontoons will be securely moored in the center of the dry dock. After the final shot is made, the dry dock leaves will be closed and the water will be pumped out by the use of temporary pumps.

#### Submarine Power Line to Toro Point.

The question of a permanent power supply for Fort Sherman was taken up during the fall of 1914. Several methods were possible, and it was a question as to which was preferable; a local engine driven generating set, an overhead line to Toro Point from the Gatun hydroelectric station, or a submarine power line from this station.

In a letter to the Governor, dated December 13, 1914, the Electrical Engineer set forth in detail the advantages and disadvantages of the various possible methods, and advised the installation of a three-phase, 6,600 volt submarine cable between the hydroelectric station at Gatun, and Toro Point, using transformers which were already on the Isthmus, for stepping up the voltage at Gatun from 2,200 volts to 6,600 volts for transmission through a distance of about seven miles, and stepping it down to 2,200 volts for distribution at Toro Point. The estimated cost of this installation was \$50,000, including the value

of the transformers, which were already on hand.

This recommendation was approved by the Secretary of War and on May 27, 1915, requisition was placed in the States for 7,200 feet of three-conductor, No. 6 B. & S. gauge, 10,000-volt, lead-covered cable, and 40,900 feet of three-conductor, No. 6, B. & S. gauge, 10,000-volt submarine cable, the total cost of which was \$37,643.47.

The plain lead-covered cable was used in the duct line from the hydroelectric station to Gatun locks; thence through ducts to the north end of the locks. At this point the armored submarine cable was spliced on and laid in a trench 24 inches deep, about 300 feet from, and nearly parallel with, the west bank of the canal to a point on Limon Bay, where it begins its submarine journey across the bay to a landing hut at Toro Point. The portion of the cable in ducts is 7,000 feet long, the subterranean portion is about 24 miles long and the submarine section is approximately 5½ miles in length. The submarine section was laid by the cable boat *Cyrus W. Field*, and by Panama Railroad barges in the shallow sections where the larger boat could not approach. The splices in the submarine cable were made by forces of the Electrical Division, who spliced and taped the copper conductors, and by the cable boat forces, who made the armor joints.

Due to a long delay in the delivery of the cable from the manufacturers, the work progressed slowly. It was finally completed and the line placed in service on April 1, 1916.

This line furnishes 25-cycle, three-phase current for the batteries and quarters at Toro Point. It will drive motor-generator sets for generating direct current for the searchlights and other apparatus requiring direct current. The total cost of the line, including labor and material was \$44,316.31. This line will furnish power at less than one cent per kilowatt hour and the upkeep will be very small.

#### Repairs to Spuds at Paraiso Shops.

Repairs and reinforcement of a spud for a 15-yard dipper dredge, just completed at Paraiso shops, were accomplished in nine working days of 16 hours each, a total of 144 working hours. The cost was \$2,141.53. This is the first spud repair work done at Paraiso, where the conditions are not considered good, because the shops are not well equipped for such heavy work, and the men must work outside in the rain and sun. The laying-out work was done in the cool of the day, because the heat of noon time expanded the plates one inch and a quarter beyond normal. Notwithstanding these handicaps, the work was done more quickly and at less cost than previous repairs of this nature, which required 400 hours and cost \$4,026.90.

These spuds are steel structures, 76 feet long, 48 inches square in cross section, and weigh 89,620 pounds or about 45 tons un-

equipped. Equipped, they weigh nearly 55 tons each. They were built in the United States at a cost of \$5,600 each, but on account of war prices they would at present cost from 33 per cent to 50 per cent more. Each dredge is equipped with two heavy forward and a lighter stern spud. By means of these spuds, the forward end of the dredge is lifted up bodily in the water some four feet, leaving to an even keel. This constitutes the working condition. The spuds have to support a weight of 200 tons, 45 feet above the bottom of the canal, which gives them footing or support. In this condition they also have to care for the digging reactions; for the bail pull alone on the dipper is about 235,000 pounds. They are designed for maximum compression of 800,000 pounds each.

The repairs consisted of cutting a drift for 45 feet on three sides, and then straightening the structure, with one side still in place; renewing parts of the interior structure and introducing an interior girder as reinforcement for a distance of 30 feet where the strains are the greatest. Completed, the spud was exceptionally straight and smooth, two qualities which contribute to a long life and easy operation.

A new design has been prepared by the Dredging Division to replace the design of the dredge builders from whom the present supply of spuds was obtained, and as none of the repaired, reinforced spuds have failed since installation, it is believed that no more trouble will be experienced.

#### Mansonia Titillans.

The breeding place of a type of mosquito with peculiar habits and life history has recently been found on the Canal Zone. This species of mosquito known as *Mansonia titillans* differs from other mosquitoes by passing its entire larval and pupal stage beneath the surface of the water attached to the water lettuce (*Pistia*), which is so abundant along the banks of the Chagres River and in the Canal near Gamboa, and in Gatun Lake.

Ordinarily, mosquito larvæ live free in the water and secure their air supply at the surface of the water, but *Mansonia titillans* has breathing tubes in both the larval and pupal forms so modified as to enable it to pierce the rootlets of the *Pistia* and obtain its supply of oxygen directly from the plants, at some distance from the surface of the water. Their manner of living during the immature stages has been known for sometime, and it has also been known for several years that the adult mosquitoes of this species were abundant in the Canal Zone, but the larval and pupal forms had never been found.

While they are found attached to the roots of the water lettuce and other water plants, thousands of these plants may be examined without revealing any larvæ, as certain other conditions are also necessary for a favorable breeding place, such as shade, shallow stagnant water, and protection from winds and currents. They have also been found attached to nine other varieties of water plants and grasses.

The breeding places so far discovered by L. H. Dunn, of the Board of Health Laboratory, are near Gamboa and in the Mandingo River, and along the shores of Gatun Lake in that vicinity.

#### Join Now—The Red Cross.

The Canal Zone Chapter of the American Red Cross is following the lead of the National organization by starting a campaign for an increased membership. The present Canal Zone Chapter membership is 384. It is expected that this will be increased to at least 1,000.

For the convenience of prospective members, pay-roll deductions have been authorized by the Governor. Lists will be circulated in the near future giving all employees the privilege of joining this organization. Membership costs \$1 per year and includes a year's subscription to *The Red Cross Magazine*. This is a "monthly" devoted to Red Cross work all over the world and is especially interesting at this time, as it gives vivid accounts of the European war.

Fifty per cent of all membership dues are retained on the Isthmus for local use in cases of disaster, such as the Colon fire of last year. During the current year the local Chapter has forwarded almost \$600 to aid in Red Cross work in Europe, and has aided many destitute people.

Two recent cases may be noted. One, the furnishing of money to purchase clothing for a destitute family of seven upon their arrival in New York. Another, the sending of a child, who was stranded and under the control of questionable people to her relatives in the States.

A few facts about the Red Cross follow:

The American Red Cross (present organization) was chartered by Congress in 1905.

Its President is the President of the United States.

It is the one volunteer relief organization recognized by the United States Government.

It has expended in ten years for the people of the United States in humanitarian work over thirteen millions of dollars in money and supplies.

It is non-sectarian and non-political.

It was organized to furnish aid to sick and wounded of armies in time of war, and to devise and carry on measures of relief for those suffering from pestilence, famine, fire, floods, and other great calamities. And this it is trying to do.

If this country should ever become engaged in war the Red Cross would be the only official channel through which friends or relatives would be able to locate and communicate with sick, wounded, or imprisoned soldiers.

It expends its relief funds in accordance with the designation of donors.

Its accounts are audited by the United States War Department.

#### Buford En Route to Manila.

The Army transport *Buford* arrived at Cristobal on April 8, en route from New York to Manila via Honolulu. Her through passengers number 18 cabin, 9 second class, and 1 steerage, and she also brought 3 second class and 48 steerage passengers to the Isthmus. She passed through the canal on April 15.

Dredge No. 83 is to be used at the bases of the Culebra slides, and, unlike pipeline suction dredge No. 86, which has been used for re-handling spoil to expedite disposal, will perform primary excavation. The spoil of No. 83 will be discharged into barges and towed to the dumping grounds in the manner in which the spoil of hard-material dredges is ordinarily handled.

#### IMMIGRATION IN MARCH.

##### Consolidated Report of Quarantine Transactions at the Ports of Balboa-Panama and Colon-Cristobal for the Month of March, 1916.

Number of vessels inspected and passed	132	
Number of vessels held in quarantine	19	
Total		151
Number of special inspections made to enforce compliance with antiplague and mosquito breeding regulations	90	
Number of vessels fumigated on arrival	16	
Number of vessels fumigated on departure	0	
Total		16
Number of crew examined	9,547	
Number of passengers examined	4,066	
Total		13,613
Number of supplementary inspections	2,688	
Number of stowaways inspected	5	
Number of persons vaccinated at ports of arrival because of compulsory vaccination law	311	
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law	1,388	
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and plague	537	
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague	1,814	
Total		2,351
Number of persons landed from foreign ports:		
Cabin	1,756	
Steerage	1,151	
Total		2,907
Number of persons embarked for foreign ports:		
Cabin	1,910	
Steerage	1,378	
Total		3,288
Number of persons arriving from coast towns on small launches and sailing craft	1,666	
Number of persons sailing for coast towns on small launches and sailing craft	1,764	
Apparent decrease for month from coast towns	98	
Apparent decrease for month from foreign ports:		
Cabin	154	
Steerage	227	
Net decrease for month	381	
Number of persons rejected and deported	15	
Number of bills of health issued or revised	121	
Number of inspections of docks	24	
Number of inspections of vessels at docks	116	
Number of persons landed	4,573	
Less number for Pacific ports	199	
Total		4,374
Number of persons sailing	5,052	
Total apparent decrease for month		678

##### Quarantine Transactions at the Ports of Balboa and Panama for the month of March, 1916.

Number of vessels inspected and passed	46	
Number of vessels inspected and held in quarantine	17	
Total		63
Number of vessels fumigated on arrival	14	
Number of vessels fumigated on departure	0	
Number of crew examined	3,390	
Number of passengers from foreign ports examined and landed		
Cabin	324	
Steerage	467	
Total		791
Number of stowaways	5	
Number of persons examined	4,186	
Number of supplementary examinations	2,688	
Number of persons vaccinated at ports of arrival because of compulsory vaccination law	1	
Number of persons vaccinated at ports of departure or en route because of compulsory vaccination law	1,103	
Total		1,104
Number of persons held in quarantine at the detention house to complete period of incubation for fever or plague	298	





## ATLANTIC TERMINAL DOCKS

### Additional Facilities for Handling Freight and for Public Convenience.

On February 28, 1916, work was commenced by the Municipal Engineering Division on the relocation of sewer pipes along the Cristobal and Colon water fronts preparatory to beginning the first of a series of improvements in the way of additional track facilities, buildings, and roads intended to relieve the congestion and inconvenience felt not only by those engaged in doing business on the Cristobal docks, but by the general public as well.

Considerable study has been made during the last year in the office of the Engineer of Docks with the view in end of developing a plan which would remedy present defects and at the same time be consistent with plans for future construction work.

Two general schemes for relieving the congestion in the track yards for the docks and the interruptions to traffic were considered.

At first it was planned to build a viaduct crossing the tracks on Roosevelt Avenue. Besides ensuring continuous traffic, this plan would permit a considerable extension of the present yard tracks and the mole, and might be followed by practically indefinite yard extensions between Cristobal and Mount Hope.

This plan might have necessitated the abandonment in the near future of Cristobal as a residential section. Furthermore, it would have taken a considerable length of time to perform the construction work. In view of these reasons and the fact that the earliest possible relief was required, this plan was not approved.

The approved plan is that shown on Panama Railroad drawing No. 3604-2, which is reproduced with this article.

The first actual construction work was started on March 15, 1916, when the first train load of soft rock fill was dumped over the sea wall opposite Eleventh Street, in the construction of a fill to extend out behind the Cristobal fire station and the offices of the United Fruit Company and Hamburg American Company and meeting the present mole. Upon this fill will be built a track yard with sufficient capacity to accommodate 135 cars. This yard will connect with the main line at about Ninth Street. Likewise the tracks from all track yards on the mole will meet the main line here.

This plan will permit the removal of those tracks now crossing Roosevelt Avenue, which have been a constant annoyance to the public by holding up traffic repeatedly for periods of from 20 minutes to half an hour. Additional fire protection for the docks will result from the removal of these tracks, since in case of fire, it would be necessary under present conditions for the fire apparatus to use Roosevelt Avenue at a time when the most serious in-

terruptions to traffic would occur due to the necessarily rapid removal of cargo from the docks. In the development of the new plan, the probability of interruptions has been made as small as practicable without the use of any overhead crossings.

A track yard has been authorized to accommodate switching in connection with Pier 7 and Pier 6 provided the latter pier should be built. The same general scheme as used for this yard may be used for Pier 5 and Pier 4 if these should ever be constructed.

The construction of the office building shown on the plan has already been started by the Building Division. This building when completed will provide office space for the Receiving and Forwarding Agent, the Captain of the Port, the Customs Inspectors, Health Officer, and others.

It was originally intended to put the office building on the mole between Piers 8 and 9, but this idea was abandoned, and it was decided to build it on Roosevelt Avenue.

A local freight and baggage house will be built on Roosevelt Avenue as a sort of annex to the shed of Dock 9, and will provide storage space for baggage, valuable cargo, and specie. It is planned to provide several movable bridges across the depressed tracks of Dock 9 for the purpose of transferring cargo from the piers to the storehouse.

The location of the local freight and baggage house outside of the piers will keep a great deal of traffic off the docks. By locating this building and the office building outside of the customs line, approximately 50,000 persons will be diverted from the docks each month. At present anybody going to the docks for baggage or cargo is obliged to hunt for his property over the entire dock area, not only

at considerable inconvenience to himself, but also to those conducting the other business of the docks such as stevedoring, checking, etc. Naturally considerable loss occurs resulting in claims against the Panama Railroad. This will be eliminated and considerable convenience in handling all local freight and baggage will result after the completion of the freight and baggage house.

In addition to the office building and local freight and baggage house, the construction of an electric charging station and launch house has been authorized. These will be located on the mole and boat landing between Pier 8 and Dock 9.

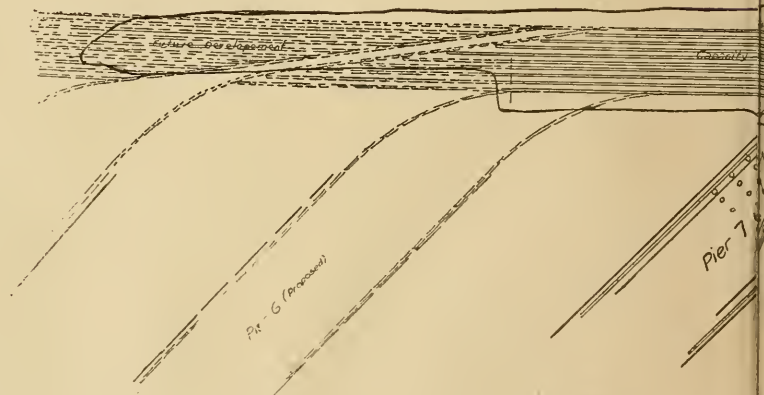
The electric charging station will contain space for a repair shop, sail loft, etc., and will provide storage for ship's gearing, and other dock equipment which at present occupy valuable space on the piers.

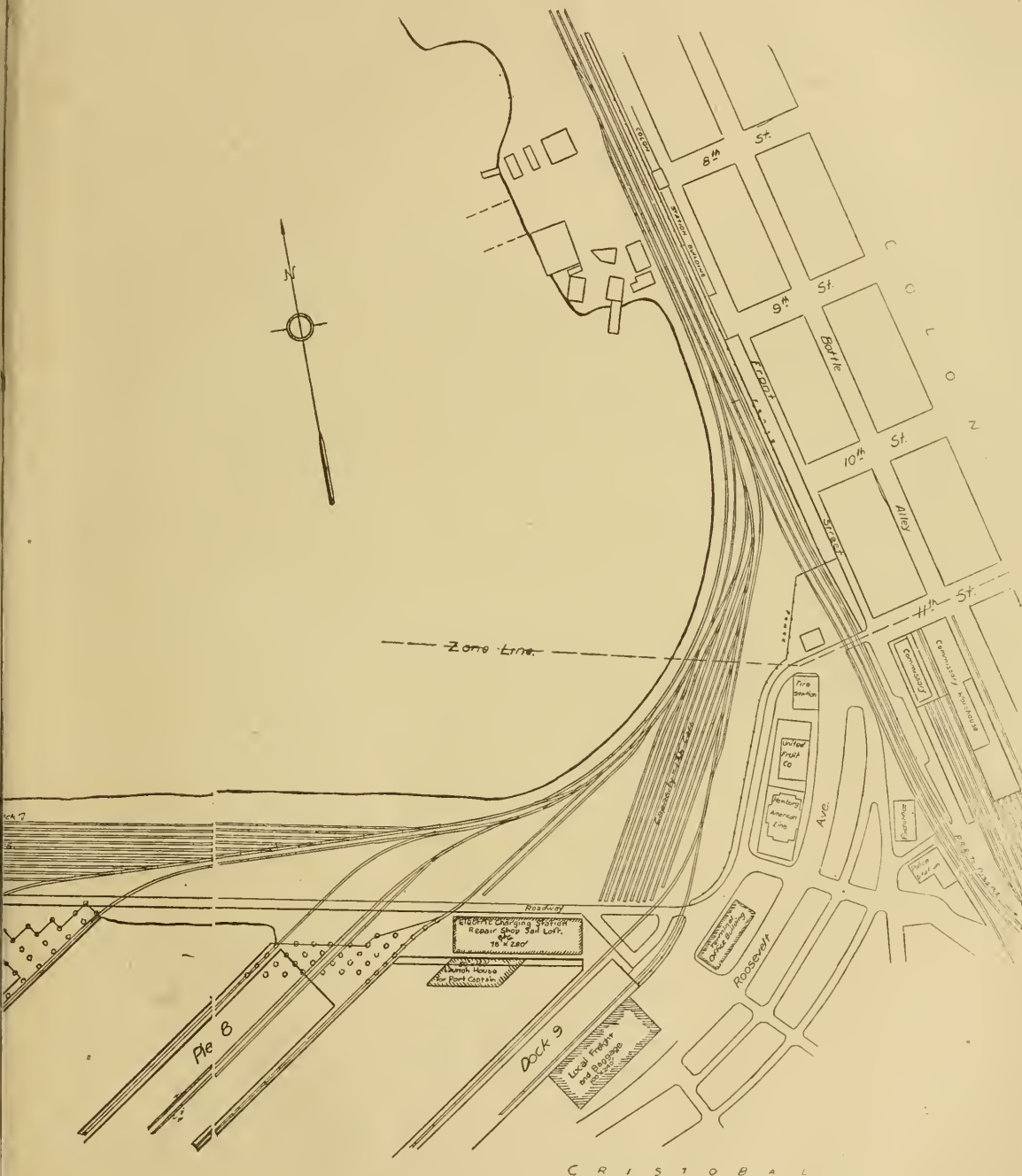
The launch house will be used by the motor boats of the Port Captain, which are now kept in a temporary boat house near the Panama Railroad office building in Colon.

Consideration has been given to the building of a special roadway for the use of the electric motor trucks. If built, this road will probably be covered, affording protection against rain to cargo being transferred from one dock to another. It has not been definitely decided to build this road yet, however.

In addition to this road, a new road will be provided for entrance to the piers. The exact layout of this road has not been determined, but the intention is so to locate it that there will be but one entrance to the piers, whereas at present it is necessary to have police guard both at the entrance at the present road and at the track crossing at Roosevelt Avenue.

LAY OUT—ATLANTIC DOCKS.





C R I S T O B A L



## OFFICIAL CIRCULARS.

## Acting Executive Secretary.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., April 12, 1916.

## TO HEADS OF DEPARTMENTS AND DIVISIONS:

During the absence of Mr. C. A. McIlwaine on leave, effective April 13, 1916, Mr. W. P. Copeland is designated Acting Executive Secretary.

Geo. W. GOETHALS,  
Governor.

## In Local Charge, Fortification Work.

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,  
BALBOA HEIGHTS, C. Z., April 12, 1916.

To all concerned—Effective April 19, and during the absence of A. F. Morris, Supervisor, on leave, R. C. Jones, Junior Engineer, is placed in local charge of all work at the Atlantic fortifications, and G. V. Baril, transman, in local charge of all work at the Pacific fortifications. They will continue as heretofore to report to F. E. Holleran, Assistant Engineer, who, in addition to his present duties, will exercise such general supervision over the work as may be directed from time to time by Lieut. C. Garlington.

JAY J. MORROW,  
Assistant to Engineer of Maintenance.

## Despatch of Mails.

THE PANAMA CANAL,  
DIVISION OF POSTS,  
BALBOA HEIGHTS, C. Z., April 14, 1916.

To all postmasters—On account of the change in the time table of the Panama Railroad, effective the 15th instant, you are advised that Section 13 of the Canal Zone Official Postal Guide, is amended to read as follows:

Mail will be despatched daily on all trains of the main line and by the following trains of the Las Cascadas shuttle line: Nos. 32, 33, 34, 37, and 38.

On Sundays and holidays mail will be despatched on trains Nos. 32, 33, and 34, of the Las Cascadas shuttle line, and on Nos. 5 and 6 of the main line.

Train No. 5 on Sundays will bring the United States mail arriving by the ship of the United Fruit Company. Your attention is called to the fact that the service on trains Nos. 35 and 36 is discontinued.

C. H. CALHOUN,  
Acting Director of Posts.

PANAMA RAILROAD COMPANY,  
OFFICE OF THE SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., April 14, 1916.

## CIRCULAR NO. 345:

To all concerned—Effective with time table No. 23, Saturday, April 15, 1916, trains Nos. 35, 36, 37, and 38 Las Cascadas branch will not handle baggage or express. This is necessary on account of transfer movement across locks at Pedro Miguel.

C. H. MOTSETT,  
Superintendent.

## Increased Price of Roses.

THE PANAMA CANAL,  
HEALTH DEPARTMENT,  
BALBOA HEIGHTS, C. Z., April 13, 1916.

To all concerned—Effective May 1, 1916, the price of cut roses from the Corozal Hospital farm will be 75 cents per dozen net at the commissaries.

As many customers have preferred to order their roses through the various commissaries, paying in advance in coupons, the Chief Quartermaster has approved the sale of these roses through the commissaries, provided, however, that such sales through the commissaries shall be charged for at the rate of 85 cents per dozen net at the commissary.

CHAS. F. MASON,  
Chief Health Officer.

## Surcharge on Cement Bags.

BALBOA HEIGHTS, C. Z., April 13, 1916.

All storekeepers—It has been the practice, in some cases, for various storehouses in making sales of cement, to allow a deposit to be put up to cover the return of the empty bags, this resulting in the party purchasing the cement paying no surcharge on the bags.

Effective at once, this practice shall be discontinued, and the bags shall be invoiced along with the cement and the same surcharge shall be applied to the bags as to the cement. For such bags as are returned in good condition to the storehouse, invoice shall be prepared by the storehouse taking debit against itself and crediting the party returning the bags. This office, upon receipt of such invoices, will either allow credit on the next bill or render an accounts payable voucher in favor of the party returning the bags. The foregoing

applies to sales to outsiders; the billing of which is done by this office. On sales to other departments of the Government, the value of the bags shall be included in the price charged for the cement in billing.

Where cash sales slips are rendered by the storehouses, credit may be allowed thereon for the net value of the bags returned. If the party to whom sale is made does not intend purchasing future supplies, on which this credit may be allowed, this office shall be advised as to the number of good bags returned, and accounts payable voucher will be rendered.

One hundred bags shall be the minimum number returned at any time.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
(Signed) Wm. R. GROVE,  
Chief Quartermaster.

Approved:  
Geo. W. GOETHALS,  
Governor

## Extra Charge for Employes' Dinner Parties.

BALBOA HEIGHTS, C. Z., April 13, 1916.

Hotel managers—Employes arranging for dinner parties at which six or more persons will be seated at one table, shall hereafter be charged at the rate of \$1 per plate, instead of 75 cents per plate, the regular individual charge, because of the extra service made necessary by such seating arrangement. In such instances you will arrange to sell nonemployes' \$1 tickets for each meal service.

F. H. SMITH,  
Assistant Chief Quartermaster.

## Acting Health Officer.

April 17, 1916.

Effective April 18, 1916, and until further notice, Major E. E. Persons will be designated as Acting Chief Health Officer.

Geo. W. GOETHALS,  
Governor.

## JOINT LAND COMMISSION.

The following rule, recently adopted by the Joint Commission, is published for the information of all concerned:

RULE OF THE JOINT COMMISSION RELATIVE TO THE CONTINUANCE OR DISMISSAL OF CASES.

It is ordered that when a case is set for hearing, and the claimant is not ready for trial when his case is called and the claimant or his attorneys desire that the cause be continued or reset, he shall file an affidavit in writing, stating the reasons why such party is not ready for trial, and, if the affidavit is found sufficient by the Commission the case shall be put on the Call Docket to be called at the pleasure of the Commission, or placed at the foot of the docket to be called after all other cases have been disposed of.

If the affidavit is not considered sufficient by a majority of the Commission to entitle the claimant to a continuance, or in case no affidavit for a continuance is filed, a rule of default shall be entered against the claimant.

Upon the entry of such rule of default (at the end of each month) notice thereof shall be given by four successive publications, one each week, in the English and Spanish languages, in newspapers of general circulation in the Republic of Panama, notifying such claimants to appear in person or by attorney, within sixty (60) days from the first of said publications and show good and sufficient cause why such default should be set aside, and take active steps to prosecute their claims, and failing to so appear within sixty days from said first publication their claims will be considered as having been either settled or abandoned and the same will be dismissed and forever barred.

By order of the Commission.

(Sgd.) WILLIAM TAYLOR,  
Secretary.

April 13, 1916.

## Rules of Dismissal.

Rule of Dismissal No. 236, docket numbers as noted, April 14, 1916, in the matter of sundry claims—With reference to the following claims, the evidence before the Commission is that settlement therefor has been made by the United States:

Claimant.	Dkt. No.	Tax No.	Date of payment.
Simeon Hurtado.....	1203	891	8-1-14
Natalio Lara (Anatolio Lar.....)	1264	.....	5- -14
Noverto Munos (Munoz).....	1289	.....	9- -15
Castor Gondola (Gundala).....	1307	.....	7- -14
Jose Leon (Torres).....	1372	.....	5-16-11
Jose Maria Salvatierra.....	1732	.....	5-16-11
Cornelio Philippots.....	2655	778	11- -15

Gravriel Banque.....	5156	.....	11- -15
Alejandro Villafra.....	2777	.....	11- -15
Anselmo Carrabello (Carr.....)	2935	.....	7- -15
.....	.....	.....	.....
Gabriel Roseaulin.....	2987	693	4- -15
Leon Davidas (Davadas).....	2988	1036	4- -15
Juan Cariaz (Carriazo).....	2996	.....	4- -15
John Samuels.....	3068	419	11- -15
Victor Chaves.....	3254	.....	7-19-11

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO,  
CLEMENT L. BOUVE, Commissioners.

Rule of dismissal No. 237, docket numbers as noted, April 14, 1916, in the matter of sundry claims—With reference to the following claims, the evidence before the Commission is that settlement therefor has been made by the United States:

Dkt. No.	Claimant	Date of payment.
1219	Francisco Cevello (Ceballo).....	6- 7-11
1226	Casimiro Ris (Tis) (Ortiz).....	7-19-11
1227	Victoriano Chavis (Chavez).....	7-19-11
1234	Fascual Romero.....	5-16-11
1254	Aniceto Batista (Bautista).....	6- 7-11
1390	Stephen Diassey.....	11- -15
1881	Anibal C. Garcia.....	.....
2995	Acachans (Cayaco) Andre.....	3- -15

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, R. J. ALFARO, Commissioners.

In the matter of sundry claims, rule of dismissal No. 238, docket numbers as noted April 17, 1916—Under date of March 10, 1916, Dr. Daniel Ballen, as attorney for the claimants in the claims set out hereinbelow, filed with the Commission his written request that said claims be dismissed on account of settlement having been made direct in each case with the representatives of the United States:

Docket No.	Claimant.
3549	Gabriel Yuil
3553	Ernestina Galle
3554	Leona Delgado

In view of the requests of the attorney for the claimants, the claims above noted are accordingly hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO,  
CLEMENT L. BOUVE, Commissioners.

In the matter of the claim of W. A. Burke, for property located near Empire, rule No. 239, docket No. 960, April 17, 1916—Under Rule of Dismissal No. 196, of September 4, 1915, the claim of W. A. Burke, docket No. 960, covering cultivations on Las Cascadas plantation, was dismissed on account of payment of \$125 made to claimant under date of April 24, 1915, for house located on lot 9, block 3, in New Culebra, and all other improvements within the Canal Zone.

On January 19, 1916, claimant's attorneys presented a motion to reinstate claim docket No. 960, alleging that the payment was for other property than that covered by said claim and that the property covered by said claim was not included in the settlement under which the payment was made in April, 1915.

Under all the circumstances of the case, the Commission is of the opinion that the motion should be granted, and claim docket No. 960 is therefore hereby reinstated on the docket of claims pending and is ordered set down for hearing upon its merits.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO,  
CLEMENT L. BOUVE, Commissioners.

## Notice to Employes.

Employes of both The Panama Canal and the Panama Railroad Company, if they so desire, will be paid by checks on the Commercial National Bank.

Requests for checks should be made in the same manner as requests are now made for treasury checks, that is, by notifying the timekeeper.

## Obituary.

Benjamin W. Stanley, employed as a carpenter in the Building Division, died in Ancon Hospital on March 15. His residence in the United States was in Philadelphia.

The body of Edward Bryson, who was employed as foreman at Gatun Locks, was found in Gatun Lake at 1.30 p. m., April 7, 1916, death being due to accidental drowning. Mr. Bryson's residence in the States was at 96 James St., New York City.

## SHIPPING INFORMATION.

## Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions until June 1, 1916, are given in this table:

APRIL.				
DATE.	Time and height of high and low water.			
Wed., April 19.....	4:23 15.5	10:36 0.0	16:35 16.4	23:02 -1.0
Thurs., April 20.....	5:06 15.7	11:17 0.0	17:18 16.4	23:43 -0.9
Fri., April 21.....	5:51 15.6	12:00 0.3	18:04 16.1	.....
Sat., April 22.....	0:28 -0.4	6:38 15.2	12:36 1.0	18:52 15.4
Sun., April 23.....	1:18 0.4	7:29 14.6	13:40 1.8	19:45 14.5
Mon., April 24.....	2:15 1.3	8:25 13.9	14:43 2.7	20:45 13.6
Tues., April 25.....	3:21 2.2	9:31 13.4	15:55 3.2	21:57 12.8
Wed., April 26.....	4:29 2.6	10:47 13.2	17:07 3.2	23:29 12.6
Thurs., April 27.....	5:37 2.6	12:00 13.6	18:16 2.8	.....
Fri., April 28.....	0:33 12.9	6:41 12.4	13:01 2.1	19:17 2.1
Sat., April 29.....	1:32 13.5	7:38 12.0	13:52 1.7	20:10 1.3
Sun., April 30.....	2:22 14.0	8:29 1.5	14:36 1.1	20:56 0.6

MAY.				
DATE.	Time and height of high and low water.			
Mon., May 1.....	3:06 14.4	9:14 1.1	15:17 15.3	21:38 0.2
Tues., May 2.....	3:46 14.6	9:54 0.9	15:56 15.3	22:15 0.0
Wed., May 3.....	4:26 14.6	10:33 1.0	16:34 15.2	22:53 0.2
Thurs., May 4.....	5:05 14.4	11:10 1.3	17:12 14.8	23:28 0.6
Fri., May 5.....	5:42 14.0	11:46 1.9	17:49 14.3	.....
Sat., May 6.....	0:05 1.2	6:19 13.6	12:24 2.6	18:27 13.7
Sun., May 7.....	0:43 2.0	6:57 13.0	13:04 3.4	19:05 13.0
Mon., May 8.....	1:26 2.8	7:37 12.4	13:51 4.2	19:46 12.2
Tues., May 9.....	2:14 3.6	8:22 11.9	14:48 4.8	20:34 11.6
Wed., May 10.....	3:10 4.2	9:16 11.5	15:51 5.0	21:34 11.1
Thurs., May 11.....	4:11 4.4	10:22 11.5	17:07 4.9	22:49 11.1
Fri., May 12.....	5:12 4.4	11:29 11.9	18:09 4.2	23:59 11.5
Sat., May 13.....	6:12 4.0	12:27 12.7	18:54 3.3	.....
Sun., May 14.....	0:55 12.3	7:07 13.3	13:15 3.6	19:45 2.2
Mon., May 15.....	1:44 13.2	7:59 12.4	13:59 14.6	20:33 1.0
Tues., May 16.....	2:29 14.2	8:46 1.5	14:43 15.3	21:17 0.0
Wed., May 17.....	3:15 15.0	9:31 0.6	15:27 16.2	22:00 -0.8
Thurs., May 18.....	4:01 15.6	10:16 0.1	16:14 16.5	22:44 -1.3
Fri., May 19.....	4:59 15.9	11:01 -0.1	17:02 16.6	23:28 -1.3
Sat., May 20.....	5:39 16.0	11:46 0.0	17:52 16.3	.....
Sun., May 21.....	0:15 -0.9	6:30 15.8	12:36 0.5	18:44 15.7
Mon., May 22.....	1:05 -0.3	7:21 15.4	13:30 1.3	19:37 14.9

DATE.	Time and height of high and low water.			
Tues., May 23.....	2:00 0.6	8:16 14.8	14:31 2.0	20:35 13.9
Wed., May 24.....	3:00 1.5	9:15 14.2	15:38 2.6	21:40 13.1
Thurs., May 25.....	4:04 2.2	10:21 13.8	16:45 2.8	22:54 12.6
Fri., May 26.....	5:08 2.7	11:28 13.7	17:49 2.8	.....
Sat., May 27.....	0:47 12.5	6:11 2.9	12:32 13.7	18:50 2.5
Sun., May 28.....	1:10 12:8	7:10 2.9	13:25 14:30	19:45 2.0
Mon., May 29.....	2:01 13.1	8:03 2.6	14:12 14.2	20:33 1.5
Thurs., May 30.....	2:46 13.5	8:51 2.3	14:54 14.4	21:16 1.1
Wed., May 31.....	3:27 13.7	9:33 2.0	15:33 14.3	21:56 0.9

The tides are placed in the order of occurrence, with their time on the first line and height on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sealevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3.47 p. m.

## Measurement of Coal.

The Panama Railroad Company requested the Bureau of Mines to determine the actual measurement of a ton of Pocahontas coal, and the first report, dated February 9, 1916, is as follows:

"The Bureau of Mines has made numerous measurements to determine whether the weight per cubic foot of coal as measured would vary with the amount of moisture in the coal and in such a way as to be an indicator of that moisture. From the results of the investigations that have been made, it would appear that with nut coal, the variation in weight with increase in moisture is inappreciable; that with slack coal, increasing the moisture increases the volume and decreases the weight per cubic foot, but by amounts that are not proportional to the moisture and by amounts that are relatively small. A much greater variation in weight per cubic foot is produced by the accident of handling and shaking than is produced by a variation in moisture. It appears, therefore, from the results that have been obtained, that it is hardly feasible and practicable to determine by volumetric measurements the amount of moisture absorbed by your coal in transit or while it is in piles."

The second report, dated April 1, 1916, was as follows:

"The results of the bureau's investigations made at Pittsburgh were reported to you under date of February 9, in which it was stated that the results obtained showed that it is hardly feasible and practicable to determine by volumetric measurements the amount of moisture absorbed by coal in transit, or while it is in piles. The investigations were transferred to Norfolk, where tests were made for the purpose of determining the number of cubic feet in a ton of the coal being furnished you. The engineer at Norfolk made a number of tests, and it has been determined that coal similar to the 'Houston' and 'Hood' classifications, containing about 30 per cent lump and 35 per cent each of nut and slack, will run, in round numbers, about 410 cubic feet per ton of 2,240 pounds, and about 35.7 cubic feet per ton of 2,000 pounds. These results substantiate the value of 400 cubic feet per ton of 2,240 pounds in use by your officials on the Isthmus."

BALBOA HEIGHTS, C. Z., April 17, 1916.

The Panama Canal, Washington, D. C.

SIR: The Engineer of Terminal Construction has advised this office under date of April 17 that, during the month of February, 1916,

2,339 cubic yards of mass concrete were placed in the entrance pier, instead of 3,592 cubic yards. The figure in question occurs in the second paragraph on page 4 of the Acting Governor's report for the month of February, 1916.

It is accordingly requested that you arrange to have made a corresponding change in the Acting Governor's report, both on your copy and the original forwarded to the Secretary of War.

Respectfully,

GEO. W. GOETHALS,  
Governor.

## Misdirected Letters.

The following insufficiently addressed letters and papers have been received at the office of the Director of Posts and may be procured upon request of the addressees:

Ballance, J.	Krogdahl, A. A.
Benson, Howard L.	Lowell, W. R.
Caffery, C. S.	McCarr, Arthur
Cagle, Arthur	McCormick, Dr. John J.
Carter, E. F.	McPherson, J. L.
Chuppert, Mrs. Sidney	Miles, James
Confinber, Philip	Moritz, O. L.
Boleman, Lee	Musham, Harry A.*
Corr, E. B.	Panama Elec. Supply Co.
Dewey, Nat.	Pierce, Dr. F.
Downes, Mrs. M.	Reid, Harry
Drake, Arthur	Rostaff, B. B.
Dunn, Everett	Schrader, Wm.
Felaife, Elias	Simpson, George
Gard, Wesley	Sinclair, J. McDonald
Gaskin, Harcourt	Smith, G.
Grump, Miss Mary A.	Smith, Mrs. Talbot
Ham, Mrs. Magdalena	Steffen, Oscar
Harewood, James S.	Trent, T. J.
Isaacs, Jackson	Vaughan, J. H.
Kozovsky, John	Walker, D. R.
King, Sam	Williams, Martin R.
Knight, Rev. A. W.	Willitt, Henry
Knight, H. B.	

\*Paper. †Special Delivery.

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, April 20, 1916:

FISH.		Price.
Fresh fish, per lb.		\$0.11
Turtle (wt. 100 to 200 lbs.), per lb.		.07
FRUITS.		
Coconuts, dry, ea.		.04
Coconuts, water, ea.		.05
Pineapples, ea.		.11†
Sugar cane, ea.		.03
Plantain, ea.		.01
Mangoes, ea.		.01 to .02‡
Alligator pears, ea.		.02 to .06
VEGETABLES.		
Celery, soup, per bunch.		.04
Singet, per lb.		.05
Mint, per bunch		.04
Okra, ea.		.04
Onions, green, per bunch.		.04
Parsley, per bunch.		.04
Radishes, per bunch.		.04
Spinach, per bunch.		.02
Yampi, per lb.		.04

†Indicates reduction from last list.

## Additions to Stock.

Atomizers, De Vilbiss, ea.	\$0.93
Yardsticks, brass end, ea.	.25
Cloths, tea, H. S. and Embroidered, 45", ea.	2.20
Thread, silk, 100 yds., spool.	.08
Ties, four-in-hand, black, silk, ea.	.41
Voile, white, striped, yd.	.22
Cretteau, yd.	.16
Cutex, (cuticle remover), bot.	.20
Lawn, Persian, yd.	.14
Covers, corset, ea.	.39
Covers, corset, ea.	.42
Covers, corset, ea.	.41
Needles, Mitrailuse, large, case.	.24

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week.

## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., April 16, 1916.)

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
April 10.	Oyletic.	British.	Bank Line, Ltd.	Newport News.	San Francisco.	Ballast.		6,271	4,381
April 10.	Jacob Luckenbach.	American.	Luckenbach Line.	New York.	Los Angeles.	General.	2,360	2,319	1,960
April 10.	Windber.	American.	Pacific-American Fisheries.	St. Thomas.	Seattle.	Coal.	2,923	3,011	2,100
April 10.	Lewis Luckenbach.	American.	Luckenbach Line.	New York.	Los Angeles.	General.	5,700	4,599	3,492
April 10.	Parsonito (launch).	Private.	Private.	Cristobal.	Gatun Lake.	Loaded.		1	1
April 14.	Gilead.	British.	Australian Government.	New York.	Adelaide.	General.	6,700	6,143	4,468
April 14.	Eureka.	American.	Alaska Steamship Company.	Norfolk.	Arica.	Coal.	2,881	2,421	1,726
April 14.	Ingolf (transport).	American.	United States Army.	New York.	Manila.	General.	2,000	4,834	3,532
April 15.	Tenryd.	Japanese.	Hakuyo Kisen Kaisha.	Cristobal.	Vladivostok.	General.	3,075	2,683	1,788
April 15.	Cyrus W. Fields.	American.	United States Army.	Cristobal.	Balboa.	Mine-planter.		376	204
April 16.	Harima Maru.	Japanese.	Goshi Kaisha Kishimoto Shokai.	New York.	Otaru, China.	Oil.	4,200	5,074	3,675
April 16.	Chimni.	British.	New York & Pacific S. S. Co.	New York.	Valparaiso.	General.	6,000	4,925	3,740
April 16.	La Blanca.	American.	London & Pacific Petroleum Co.	Tupcan.	Pisagua, Chile.	Crude oil.	5,900	5,147	3,268
April 16.	Falstria.	Danish.	East Asiatic S. S. Co.	New York.	Amoy, Foochow.	Petroleum.	5,410	4,799	3,470

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
April 10.	Montserrat.	Spanish Line.	Barcelona.
April 12.	Camilo.	United States Navy.	Coast ports.

## \*DEPARTURES.

Date	Vessel	Line	For
April 12.	Siskiyon.	E. K. Wood Lumber Co.	Gulfport & Bluefish.
April 13.	Monterey.	Spanish Line.	Barcelona.
April 13.	Puerto Rico.	French Line.	Saint Nazaire.

## \*EXPECTED ARRIVALS.

Date	Vessel	Line	From
April 20.	Siena.	Italian Line.	Genoa.
April 22.	Camilo.	Elders & Fyffes S. S. Line.	Port Limon.

## \*EXPECTED DEPARTURES.

Date	Vessel	Line	For
April 22.	Camilo.	Elders & Fyffes S. S. Line.	Bristol & way pts.
April 23.	Siena.	Italian Line.	Genoa.
April 23.	Leonidas.	U. S. Navy.	Coast ports.

## ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

Date	Vessel	Line	From	Date	Vessel	Line	For
April 16.	Arabian.	S. S. Company Orient.	Philadelphia.	April 29.	Whakatane.	Norton Lilly & Company.	St. John.
April 17.	City of Sparta.	Norton Lilly & Company.	New York.	May 1.	Orari.	Norton Lilly & Company.	New York.
April 20.	City of Vienna.	Norton Lilly & Company.	New York.	May 3.	Cassia.	Anglo-Saxon Petroleum Co.	Unknown.
April 29.	Ramella.	Anglo-Saxon Petroleum Co.	Unknown.	May 3.	Natic.	Anglo-Saxon Petroleum Co.	Unknown.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

and will be on Thursdays throughout the time that the Canal is closed to commerce. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*Note—The sailings on Monday, April 3 and May 1, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the sailing on May 1.

†When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

## Schedule of Launch Service to Taboga.

Following the placing of the new gasoline launch *Taboga* in service, the schedule of launch sailings between Balboa and Taboga Island has been revised, effective February 1, and is now as follows:

From Balboa—Daily, launch *Taboga* leaves for Taboga at 9.45 a. m. and at 5.30 p. m.

From Taboga—Daily, launch *Taboga* leaves for Balboa at 10.45 a. m. and at 6.45 p. m. The 10.45 a. m. trip from Taboga may be delayed at times to 2 p. m., under orders given by the Chief Quartermaster, the manager of the Hotel Aspinwall, or the Captain of the Port of Balboa.

On Mondays and days following holidays the launch *Aspinwall* will be used to supplement the regular daily service, leaving the dredge landing for Taboga at 5 a. m., and returning from Taboga at 6.30 a. m.

approximately 50 shillings per ton of seven barrels.

Water may be obtained in any quantity at either terminal. The price is 25 cents per 1,000 gallons, delivered at the dock, with a minimum charge of \$3. Vessels may take up from the fresh water section of the Canal, without charge, all the boiler water they require. This water is, however, scarcely fit for drinking.

All standard lubricants, light and heavy hardware, cordage, and miscellaneous ship chandlery supplies are sold from the storehouses at Cristobal and Balboa.

Ice may be obtained in any reasonable quantity. The price is 33 cents per 100 pounds at either Cristobal or Balboa.

Application for supplies, or for services, should be made to the Captain of the Port, Cristobal or Balboa.

## Rainfall from April 1 to 15, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<b>Pacific Section—</b>			
Balboa.	.89	11	1.26
Balboa Heights.	.82	11	1.59
Miraflores.	.90	11	1.09
Pedro Miguel.	.85	11	1.00
Rio Grande.	1.41	11	1.49
<b>Central Section—</b>			
*Culebra.	1.41	11	1.89
*Camacho.	1.00	11	1.53
Empire.	.90	11	1.08
Gambou.	.98	11	1.40
*Juan Mina.	1.25	11	1.35
Alhajuela.	1.97	11	2.01
*Vigia.	2.40	11	2.45
Pajoles.	1.85	11	2.48
*Trinidad.	1.41	11	1.74
*Monte Lirio.	2.79	11	3.78
<b>Atlantic Section—</b>			
Gatun.	2.45	11	2.84
*Brazos Brook.	1.84	11	2.26
Colon.	.76	11	1.12

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

The Pedro Miguel store is open from 8 a. m. to 12 m. and from 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m., on Saturdays and sailing days of Panama Railroad vessels.

## Fuel and Supplies.

Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bulkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.				
Vessel.	Line.	Sails.	Arrives.	
<i>Santa Marta.</i>	U. F. C.	April 12.	April 19	
<i>Advance.</i>	P. R. R.	April 13.	April 20	
<i>Colomay.</i>	U. F. C.	April 15.	April 24	
<i>Panama.</i>	P. R. R.	April 20.	April 26	
<i>Alliance.</i>	P. R. R.	April 27.	May 3	
<i>Colon.</i>	P. R. R.	May 4.	May 11	
CRISTOBAL-COLON TO NEW YORK.				
<i>Alliance.</i>	P. R. R.	April 13.	April 19	
<i>Zarapa.</i>	U. F. C.	April 13.	April 20	
<i>Colomay.</i>	U. F. C.	April 17.	April 24	
<i>Colon.</i>	P. R. R.	April 20.	April 26	
<i>Carrillo.</i>	U. F. C.	April 20.	April 27	
<i>Advance.</i>	P. R. R.	April 27.	May 4	
<i>Panama.</i>	P. R. R.	May 4.	May 10	
<i>Alliance.</i>	P. R. R.	May 11.	May 17	
<i>Colon.</i>	P. R. R.	May 18.	May 24	
NEW ORLEANS TO CRISTOBAL-COLON.				
<i>Abangares.</i>	U. F. C.	April 15.	April 22	
<i>Atenas.</i>	U. F. C.	April 19.	April 24	
<i>Cartago.</i>	U. F. C.	April 22.	April 29	
<i>Herdio.</i>	U. F. C.	April 26.	May 1	
CRISTOBAL-COLON TO NEW ORLEANS.				
<i>Cartago.</i>	U. F. C.	April 16.	April 21	
<i>Herdio.</i>	U. F. C.	April 16.	April 26	
<i>Parismina.</i>	U. F. C.	April 23.	April 28	
<i>Abangares.</i>	U. F. C.	April 23.	May 1	

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values, midnight to midnight.





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

For delivery in other countries, to which the paper must be forwarded under foreign postal rates, a charge of 30 cents is added for postage, making the subscription \$1.50 per year.

Yearly subscriptions are entered as beginning at the first of the quarter of the year in which received, and expire at the beginning of the corresponding quarter of the following year. When subscriptions are renewed after the beginning of a quarter the back numbers which have been issued during that quarter will be forwarded when available.

The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

Bound volumes of The Canal Record, 1 to VIII, inclusive, are for sale at \$2.50 each.

Remittances for subscriptions or for bound volumes may be forwarded to The Panama Canal, Washington, D. C., U. S. A., or to The Canal Record at the address given below.

Address all Communications.

THE CANAL RECORD,

Balboa Heights, Canal Zone,

Isthmus of Panama.

### NOTES OF PROGRESS.

#### Flooding of Dry Dock Entrance Basin.

The final shot for breaking a gap through the cofferdam across the entrance to dry dock No. 1 and the unloader wharf of the coaling plant at Balboa was exploded at 12.30 p. m., Sunday, April 23. The blast went off with precision and was regarded by the engineers as thoroughly satisfactory. The shot was fired at nearly low tide, and water did not come through the gap until the tide rose. Prior to the blasting, dredge No. 85 had pumped water into the entrance basin, over the cofferdam, to elevation -15, and the four concrete pontoons for small boat landings which had been built on the floor of the dry dock were floated and moored to the dock walls.

Following the discharge of the blast, the concrete pontoons were towed out of the dry dock and moored alongside the unloader wharf, and the dock gates were closed. This was to prevent an inrush of water and debris into the dry dock when the water at high tide should rush through the gap in the cofferdam, and also in order to reduce the amount of water to be handled in pumping out the dock.

At 5.05 p. m. the water began to trickle over the top of the gap, coming in in two rivulets. With the rising tide the rivulets gained volume, which increased as they cut away the earth of the dam. For the first 40 minutes the flow was increasing, but not exciting. At 5.45, the streams carried away the section of earth which had been between

them. A stream 100 feet wide then poured through, with considerable velocity, there being a difference of 14 feet in water levels. This made a strong current diagonally across the entrance basin in the direction of the unloader wharf, and at 5.50 the strength of the current was sufficient to part the moorings of the two pontoons nearest the entrance. They were recovered promptly and made fast before any damage was done. Just as this was accomplished, at two minutes before six, the basin filled to the level of the sea and the currents ceased. The pontoons were towed out of the basin and placed in the slip between Pier 18 and the quay wall in the morning of Tuesday, April 25.

The blast which opened the cofferdam used 14,500 pounds of saltpetre dynamite of 60 per cent nitroglycerin. That by which the President opened the dike at Gamboa on October 10, 1913, contained between 32,300 and 32,500 pounds; and the blast that blew up the dike across the Pacific entrance channel south of Miraflores Locks on May 18, 1913, used 33,000 pounds of 60 per cent dynamite.

#### Pacific Mail Service through the Canal.

The Pacific Mail Steamship Company has started a service through the Canal, terminating at Cristobal, where its vessels exchange cargo with Atlantic carriers. The line will continue essentially the service of the past, running some vessels direct between the Isthmus and San Francisco, and some on a coasting route, calling at Central American and Mexican ports on the way. For the present there will be a sailing from the Isthmus about every 10 days.

It is expected that the service will be increased within a relatively short time by the addition of the steamships *Colombia*, *Ecuador*, and *Venezuela*, purchased from the Royal Dutch West India Mail. These three ships are now plying between England and New York and Baltimore. The *Colombia* is to be sent to the Isthmus upon the completion of her present trip, but is now undergoing repairs in Great Britain of damage resulting from striking a mine. With the addition of the three ships the Pacific Mail will have 10 plying between San Francisco and the Isthmus.

The first ship of the Pacific Mail to go through the Canal was the *San Juan*, which cleared from Balboa for Cristobal on Sunday, April 16, and returned from Cristobal on Saturday, April 22. A former Pacific Mail ship, the *Algoa*, had made an earlier transit through the Canal, but this was after she had been sold to Sudden and Christenson.

The Pacific Mail was formerly prohibited from using the Canal, on account of being owned by a railroad, under conditions contrary to the provisions of Section 11 of the Panama Canal Act, and evidence of the termination of this condition was furnished to the Canal authorities before the *San Juan* entered the Canal.

#### DRY DOCK NEARLY READY.

Available for Emergency Use When Channel is Cleared.—Abolishing Terminal Subdivision.

The construction of the terminal facilities authorized for Balboa having been practically completed, the Pacific terminals subdivision of the Division of Terminal Construction will be abolished at the close of this month. Such items of construction work as remain uncompleted then will be transferred to other divisions, effective May 1, for completion on work requests.

Dry dock No. 1 is to be turned over to the Mechanical Division for operation and maintenance on May 1. It is expected that the concrete work connected with the dock will have been completed on that date, with the exception of a few yards here and there, which can not be placed at this time, due to the nonarrival of certain fixed steel from the United States.

The principal items of construction work not yet completed at the dry dock are the installation of capstans; installation of metal and wooden keel blocks; installations of certain metal railings; completing sidewalk and hand rails on gate leaves; and completion of installation of valves and main pumps. The mechanical installation of the pumping plant will be practically complete at the end of this month, and there remains the electrical installation, which will be done by the Electrical Division.

A sufficient amount of both metal and wooden keel blocks will be on hand at the first of the month to make it possible, if necessary, by a temporary installation, to dock any vessel that can be accommodated by the dry dock, which is 1,044 feet long, by 111 feet wide at the entrance, and has a depth of over keel blocks of 35 feet at mean tide. The metal fastenings for the blocks have not yet arrived, but are expected next month.

The permanent pumping plant is not entirely completed, but the two 5,000-gallon electrically driven centrifugal pumps, borrowed from the locks division, and installed temporarily, are able to unwater the dock in a little over 24 hours. The capstans have not yet been received, but arrangements have been made to install a Ligerwood unloader at the head of the dock temporarily for pulling a vessel in, if necessary. With these expedients, the dry dock can be used at any time, following the opening of a passage through the cofferdam which was thrown across the entrance to protect the construction work. A channel 100 feet wide has been sluiced through the cofferdam at the gap made by the blast on April 23, with a depth of 12 feet at mean high tide, which can be increased to 15 or 20 feet without much difficulty by dredging. The complete excavation of the cofferdam will be carried out as rapidly as is feasible, in view of the need of dredging equipment in Gaillard Cut. It is expected that

ladder dredge No. 5 from Gaillard Cut will begin dredging the cofferdam next month.

The pump and compressor house, building No. 29, will be completed by the Building Division.

The erection of the machinery for the coaling plant is in the hands of contractors. An inspection force attached to the main office of the Division of Terminal Construction will look after this work.

Other work about the terminals yet to be done includes the finishing of the riprap wall behind the reloaders wharf and behind dock No. 19, and final grading behind these two structures; filling and paving in the center of pier No. 18, at four bents where anchors are being placed; and miscellaneous work of clearing up. This work will be performed by the Division of Municipal Engineering, some of the force previously on the work being transferred to that division for two or three weeks for its completion.

The work in the quarry at Sosa Hill has been discontinued, though the two steamshovels which were used during the last six weeks have been left in the quarry for further service, if required. The last train of rock for the East Breakwater, consisting of 14 Lidgetwood flat cars, was hauled across the Isthmus on Thursday, April 20.

In the middle of March the men employed by the Pacific terminals subdivision numbered approximately 3,000. These men were employed in two and three shifts. With the breakup of this subdivision, following a period of rush work in order to complete the work well before the end of the fiscal year, there will be one of the sharpest reductions of the Canal force which have occurred recently. It is estimated that after all transfers to other divisions, the net reduction will be approximately 80 gold and 1,300 silver employees.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, April 24, amounted to 211,190 cubic yards. In addition, 22,465 cubic yards of miscellaneous maintenance spoil were removed from the Cut. The resumption of traffic through the Canal has reduced the working hours of the dredges.

The output of the several dredges during the past week was as follows:

<i>Cascadas</i> .....	15-yard dipper.....	70,245
<i>Gambao</i> .....	15-yard dipper.....	63,335
<i>Paraiso</i> .....	15-yard dipper.....	51,395
<i>Coroal</i> .....	Ladder.....	8,016
<i>No. 83</i> .....	Pipeline suction.....	26,607
<i>Culebra</i> .....	Seagull suction.....	16,634
<i>No. 86</i> .....	Pipeline suction.....	7,425
<i>No. 5</i> .....	Belgian ladder.....	

The average aggregate output of the dredges during the 26 weeks preceding that ending at midnight of Monday, April 24, was 256,987 cubic yards, the total amount of primary excavation during that period having been 6,811,663 cubic yards.

This has been an average of 36,712 cubic yards for each of the 182 working days.

#### Advances in Price of Oils.

The open market price of Diesel engine oil, sold at Balboa by the Union Oil Company of California, has been advanced to \$2.50 per barrel. The price at which the company had recently been selling the oil in the open market was \$1.98 per barrel of 42 gallons.

Effective May 1, the price of crude oil sold by The Panama Canal will be advanced from \$1.25 per barrel at either terminal to \$1.40 at Balboa and \$1.65 at Cristobal.

## CANAL WORK IN MARCH.

Monthly Report of the Acting Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., April 13, 1916.

*The Honorable the Secretary of War,*  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of March, 1916:

#### Department of Operation and Maintenance.

*Lock operation and maintenance*—In addition to the usual maintenance, operation, and repair work at the locks, the following was the status of work done at the places named: *Pedro Miguel*—Installing regulating valves, completed; installing track turnouts, 75 per cent completed. *Miraflores*—Installing regulating valves, 40 per cent completed; application of bitumastic solution and enamel to lock gate surfaces in east chamber, 65 per cent completed; backfilling and grading work at lower end of locks, completed. *Gatun*—Installing track turnouts, 78 per cent completed.

Seven commercial lockages were made at each of the three lock flights, and 25 noncommercial lockages were made at Gatun, 44 at Pedro Miguel, and 18 at Miraflores.

*Electrical Division*—The net output of the power plants during the month was: Gatun hydroelectric station, 4,001,200 kilowatt-hours; Miraflores steam station, 53,470 kilowatt-hours; total, 4,054,670 kilowatt-hours. The net output of the Balboa air compressor station was 267,303,822 cubic feet of free air compressed to 105 pounds. The usual operation, maintenance, and repair work was carried on, and construction work was continued for the Army and the Canal.

*Municipal Engineering Division*—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: Work in connection with the water and sewer systems, grading, and construction of roads and streets, for the military at Margarita and Toro Point; construction of fence and fire wall around gasoline tanks at Cristobal and Balboa; concrete spillway at Rio Grande; new storm sewer in Panama City; and work was started on sewer and water systems and on roads in the new addition to the Balboa townsite.

*Division of Meteorology and Hydrography*—The rainfall for the month was above normal at 12 stations and deficient at six stations, and ranged from 4.88 inches for the month at Cucherbo station on the Trinidad River, to .20 inch at Miraflores. The maximum precipitation recorded on one day was .83 inch, at Monte Lirio on the 19th instant. The estimated rainfall over the Gatun Lake watershed was 104 per cent above normal, or 2.02 inches against a 6-year mean of .99 inch, while over the Chagres River basin above Alhajuela it was 26 per cent below normal, or .92 inch against a 15-year mean of 1.24 inches. The Chagres River discharge at Alhajuela was two per cent below the 15-year March normal, and furnished 111 per cent and 48 per cent of the net and total Gatun Lake yields, respectively. Gatun Lake varied from elevation 86.52 on the 3rd to elevation 86.09 on the 31st, averaging 86.33, and Miraflores Lake varied from elevation 54.35 on the 8th to 53.55 on the 25th, averaging 53.99. Four seismic disturbances were recorded at Balboa Heights during the month, on the 1st, 21st, 27th, and 29th,

respectively. The last two were generally felt on the Isthmus, but no damage was reported from any of them.

#### Division of Terminal Construction.

##### PACIFIC TERMINALS.

*Dry dock and entrance pier*—Work on setting fixed steel for the valves, bollards, and crane tracks was continued, a total of over 13 tons being placed. The drilling of holes in the floor and cutting slots for the blocking system were completed, with the exception of the area covered by the concrete pontoons, and six bollards were set in the dry dock coping. For the storm sewer and duct line 425 cubic yards of reinforced concrete were placed, and the duct line on the south side of the dry dock was practically completed. The installation of the greenheart bearing and fender timbers was completed, the greenheart installed on the gates totalling 25.99 tons; and the painting of the interior and exterior surfaces with bitumastic solution and enamel was also completed. All exposed surfaces on the greenheart were painted with red lead and one coat of liquid tar paint.

The installation of the mechanical and structural parts of the pumping plant progressed satisfactorily, practically all of the structural steel having been erected. The four 54-inch and two 20-inch pumps have been installed, with the exception of the motors, shafting, and couplings, and, the aligning of same was under way. The 3-inch bilge pump was erected and placed in operation, and about 50 per cent of the pressure piping for operating the valves has been installed. The installation of the hand railings was about 75 per cent completed; the two flooding valves on the south side were in place, and the seal at the bottom was being fitted. The six screens for the entrances of the flooding and discharge culverts were assembled and two were in place in the discharge culverts, the others being ready for installation. The painting of all the housings and screens, and the bodies of the flooding valves was nearly completed by the contractor. One hundred and twenty-six sets of cast-iron keel blocks were received and inspected. The erection of the compressor plant and pump house (Building 29) was started on March 6, and on March 27 the riveting was commenced. At the end of the month erection was complete and the riveting 50 per cent completed, the total steel erected amounting to 295.48 tons.

On the entrance pier, work was continued on the extension at the west end and at the headwall for future dry dock No. 2, a total of 1,021 cubic yards of concrete being placed, of which 438 cubic yards were in the deck slab. For the entrance pier extension 50 tons of structural steel were erected. The work of drilling the cofferdam was continued and was in readiness for an opening shot on April 1, 4,951 lineal feet of piling being driven for supporting well drills. The drilling amounted to 41,970 lineal feet, of which 38,866 lineal feet were by star drills.

*Coaling plant*—Four hundred and forty-nine cubic yards of material were excavated in preparing foundations for the buttresses at the west end of the unloader wharf, and 500 cubic yards of concrete were placed at this point. The remaining five panels of the structural steel deck, amounting to 94 tons, were completed, 3,200 rivets being driven, making a total of 27,200 to date. In the deck slab 430 cubic yards of reinforced concrete were placed, and



50 creosoted piles, amounting to 3,000 lineal feet, were used in the fenders. In the reloader wharf 21.28 tons of structural steel were erected, completing the deck with the exception of the driveway at the south end and a small extension at the north end of the wharf near the coal pocket. The main deck slab was completed, with the exception of one panel at the north end, 1,041 cubic yards of reinforced concrete being placed. The work of backfilling behind the wharf continued, 2,971 cubic yards of material being placed and 339 cubic yards of riprap being laid behind the center portion. There were excavated 1,397 cubic yards of earth for anchors at the north and south ends of the wharf and 671 cubic yards of reinforced concrete were placed in the deadmen. The bracing between cylinders under the wharf was nearly completed, about two-thirds of the anchor rods having been placed, and the total fixed steel set in connection with the anchorage amounted to over 50 tons. The one remaining panel of the reloader wharf was erected and riveted, making the erection of the steel decking complete. Practically all the operating parts for both the unloader towers have been installed and the electric light system of the towers was about 80 per cent completed. The riveting of the two reloader towers was completed and the sheet metal work was started. The erection of the transformer house was commenced on the 13th of March, 42½ tons of structural steel being erected. There were also erected 64 tons of structural steel for the viaduct along the reloader wharf, and all the steel erected received two coats of paint. The assembling and erection of the wharf bunker structural steel began on March 17, and 94.50 tons of steel were erected, but not riveted. At the east end of the coal pocket 932 cubic yards of earth were excavated by steam shovel, and 228 cubic yards of rubble and 38 cubic yards of mass concrete were placed in the coal pocket walls. The masonry for the deep coal pocket is now completed.

**Docks**—The last cylinder for the quay wall c-d was completed and 62 cubic yards of concrete were placed in cylinder fillers. There were placed eight girders for the crane tracks, amounting to 47.34 tons, and 151 cubic yards of concrete were used in encasing the girders. On quay wall d-e-f 721 square yards of brick paving were laid. On pier No. 18 there were laid 3,846 square yards of brick paving, and 1,084 square yards of wood block paving in the center section of the pier. The tile roof was completed, except for glass inserts in the center and north aisles, and the interior and exterior painting, not including doors, door headers and door jams, is 95 per cent completed. There were used 535 cubic yards of reinforced concrete in the pier shed walls and around columns. The erection of the housing for the Ogden doors was completed on March 8, and the drilling for and the erection of the weather plates on the door jams were practically completed. There were placed 90.81 tons of structural steel in the special anchorages, and 130 creosoted piles were driven. The south side of the pier was turned over for the use of the Panama Railroad on March 26, and the middle section on April 1, with the exception of the small area where the special anchorages are installed.

One hundred and ninety-five cubic yards of concrete were poured in completing the rein-

forced concrete pontoons under construction in dry dock No. 1, and the pontoons are now ready for launching.

**Excavation and filling**—The total excavation for the month amounted to 30,018 cubic yards, of which 20,354 cubic yards were classified as rock, the greater portion of which was obtained from Sosa Hill. There were placed in fill, including the 15,278 cubic yards which were sent to the East Breakwater, 34,783 cubic yards of material.

#### ATLANTIC TERMINALS.

**East Breakwater**—The core rock fill was completed on March 4th, 3,120 cubic yards of armor rock and 16,212.5 cubic yards of core rock having been dumped in the fill; and 1,956 concrete blocks (14,814.3 cubic yards) were plowed off cars. The Coco Solo plant poured 593 concrete blocks, and there remain to be poured, as per estimate of December 17, 1915, 3,744 blocks or 33,696 cubic yards of concrete. At present only the harbor track is being salvaged, the log sawmill having sawed 115,163 feet, board measure, from the salvaged trestle material.

Under the block contract 1,907 blocks were poured during the month, containing 23,481 cubic yards of concrete. There remain to be poured 5,001 blocks, the contractor having poured 6,199 blocks to date, and shipped 740 blocks to the breakwater during the month. The number of days on which concrete was poured was 27, making an average daily output of 70.1 blocks.

**Cooling plant**—The 19-pile dolphin at the northwest corner of the reloader wharf was driven and partly framed, and the timbering and framing of chocks for end, wharf fender system were completed. The west half of the reinforced concrete floor slab for wharf bunker was poured, and the installation of reinforcement for entire bunker was nearly completed.

Under Washington order No. 40483, the doors were placed in the transformer house, the controller coops, and bridge diggers, and the bridges are now structurally complete. One conveyor car was riveted, which completed the erection of this unit, and about 70 of the cars have received the final coat of paint. Five thousand pounds of structural steel for the overhead trolley system, and 22,800 pounds of rails for the tracks and switches, were placed on the viaduct, which complete these two units. The doors for the transformer house and the four scale houses were all put in place, and 400 lineal feet of the concrete walkway and apron were placed on the reloader viaduct. The creosoted timber for ties and walkway is in place in the viaduct and 2,450 feet of galvanized pipe hand railing were installed.

The structural steel for the wharf bunker and conveyor tower is all erected and riveted, and the galvanized steel covering with gutter and leaders was completed. Ten thousand pounds of steel were placed in the six gates and fixed chutes on the face of the wharf bunker, and the three bottom chutes were completed and put in place. Of the 10-ton conveyor cars for Balboa which are being constructed at Cristobal, 17 were erected and 11 riveted, making this item 25 per cent completed. Fifty-two thousand pounds of steel were placed in the split booms, which were completed and painted. The machinery house walks were completed in towers Nos. 1 and 2, and 4,500 pounds of steel were placed in one of the movable hoppers.

Under Washington order No. 40587 (un-

loader towers), the official tests were run. The committee supervising the tests had not made its report at the end of the month.

#### Marine Division.

Due to the continued blocking of the channel by slides, only 12 vessels of light draft passed through the Canal, of which six were southbound and six northbound, eight of which were of American and one of British register. One vessel was inspected to ascertain whether its certificate conformed to the rules; and the United States net equivalent tonnage was computed on another. A statement showing vessels making the transit of the Canal in each direction during the month is appended to this report.\*

#### Dredging Division.

The total excavation for the month, including earth, rock and gravel, was 1,443,206 cubic yards. Of this total 122,537 cubic yards of earth were removed from Balboa inner harbor, 58,096 cubic yards of earth and 1,034,738 cubic yards of rock from the Canal prism in Gaillard Cut, 1,595 cubic yards of earth and 37,539 cubic yards of rock from the Cristobal coaling station, 1,769 cubic yards of earth and 5,316 cubic yards of rock from the channel opposite dock No. 11, Cristobal, and 30,362 cubic yards of earth and 14,769 cubic yards of rock at Coco Solo. In addition to this, 223,384 cubic yards of material were relandled and not credited as excavation.

The Culebra slides continued active during the month.

The rock breaker *Vulcan* was engaged the entire month in breaking the rock shoal at station 2265 east, near the old Panama Railroad steel dock at Balboa, 1,134 holes being broken over an area of 18,144 square feet, with a total penetration of 5,172 feet and a theoretical breakage of 3,070 cubic yards. The drill barge *Teredo No. 2* was engaged from the 10th to the 26th of the month drilling and blasting along the east bank of the Canal between stations 2098 and 2100 plus 40, and for the remainder of the month between stations 1786 and 1788, 495 holes being drilled, over an area of 15,565 square feet, with a total penetration of 8,682 lineal feet, with a breakage of 10,076 cubic yards.

The hydraulic grader *No. 1* was engaged in digging drainage ditches on Cucaracha slide and working in the Rio Grande diversion near station 1825 east; and hydraulic graders *Nos. 2 and 3* were engaged in sluicing and grading on East Culebra slide. Dredges *Nos. 1 and 82* were engaged in excavating sand and gravel from the Chagres River, 3,660 cubic yards of sand, 1,347 cubic yards of No. 1 gravel, 3,393 cubic yards of No. 2 gravel, and 53,535 cubic yards of run-of-bank gravel being excavated. The work of destroying water hyacinths continued during the month.

#### Mechanical Division.

Shop orders authorized during the month numbered 1,039, an increase of 99 as compared with the month of February; those left over from the preceding month numbered 784, and those carried forward into April, 797. The output of the foundry was 102,037 pounds of iron, 189,483 pounds of steel, and 20,397 pieces of brass. Hostling was done on 4,507 pieces of equipment, and shop and field re-

\*The information contained in these tables has been published in the weekly reports in THE CANAL RECORD. The statements are therefore not printed.



pairs were made on 8,853 pieces, including 930 cars repaired in the shop.

The work of fencing the oil reservations continued, the foundations and fire walls for the two new 55,000-barrel fuel oil tanks progressed satisfactorily, and work was started on the erection of a small 500-barrel tank at Balboa for the purpose of furnishing oil to tank cars of the Panama Tramways Company. The salvaging of the old oil lines from the Balboa pumping plant, under water, to the oil crib, was undertaken.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following is the approximate status of the Canal structures in course of construction at the places named:

Ancon-Balboa—Balboa refrigerating plant, 90 per cent completed; unit of Ancon Hospital group, 90 per cent completed; terminal office building, 80 per cent completed; Ancon Y. M. C. A. clubhouse, 100 per cent completed; Ancon laundry, 40 per cent completed; concrete bachelor quarters, Ancon, 80 per cent completed; swimming pool, rear of Balboa Y. M. C. A., 60 per cent completed; concrete tower water tank at Balboa, 85 per cent completed; building No. 25, Balboa shops (permanent latrine building for dry dock), 75 per cent completed; signal station on top of Sosa Hill, commenced; Balboa yacht club, 90 per cent completed.

Paraiso—Storage shed, 100 per cent completed.

Gatun-Colon—Colon Hospital group, 100 per cent completed; relining baffle piers, Gatun Spillway, 100 per cent completed; office building for coating station, Cristobal, commenced; Masonic Temple building, Cristobal, repairing damage done by fire, 100 per cent completed.

#### Supply Department.

The force report for the period ended March 22, 1916, showed a total of 24,957 employees of The Panama Canal and the Panama Railroad Company, of whom 3,371 were white Americans and 21,586 laborers. Of the latter, approximately 176 were Europeans and the remainder West Indian negroes. There was an increase of 839 laborers and a decrease of 105 Americans, making a net increase of 734.

The occupants of Government quarters numbered 6,854 Americans, of whom 3,788 were men, 1,517 women, and 1,549 children; and 9,947 West Indians, of whom 5,818 were men, 1,632 women, and 2,497 children.

The value of material received during the month was \$877,753.20. It came forward in 31 steamers, and the total weight of cargo, exclusive of lumber and spud timbers, was 38,383 tons. Some of the principal items were 1,989,915 feet, b. m., of lumber, 373,547 bags of cement, and 176,062 pounds of dynamite.

The Balboa oil plant handled 243,044.96 barrels of fuel oil, and the Mount Hope plant handled 8,376.60 barrels, the greater part of which in each instance was handled for The Panama Canal.

#### Health Department.

General—No case of yellow fever, smallpox, or plague originated on or was brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 32,336, was 9.28 per thousand per year, as compared with 8.24 for the preceding month and 8.23 for the corresponding

month of last year. Twenty-nine deaths occurred in the Canal Zone.

Employees—The health of employees continued good. The number of names on the payrolls for the month was 33,084. On this basis the admission to hospitals and quarters, 801, gave a rate of 290.53 per thousand, as compared with 292.75 for the preceding month, and 312.82 for the corresponding month of last year. The admission rates to hospitals for all diseases were: Whites, 254.80; blacks, 81.90; and Americans, 204.89. The admission rates to hospitals and quarters for malaria were: Whites, 26.58; blacks, 3.76; and Americans, 11.07. The total number of deaths from all causes was 20. Of these, 16 died from disease, or 5.80 per thousand, as compared with 4.33 per thousand for the preceding month, and 4.91 for the corresponding month of last year. Four Americans died from disease during the month.

#### Accounting Department.

The cash balance in Canal construction appropriations on March 31, 1916, was \$10,201,838.77, and in the fortifications appropriations, \$1,356,074.18. The payrolls for March, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$991,515, and the fortifications roll amounted to \$38,382.96. Payments by the Disbursing Clerk in Washington amounted to \$976,739.50, and by the Paymaster on the Isthmus, \$1,222,519.10. Payment of \$244,492.05 was also made to the Panama Railroad Company for commissary books. Collections on the Isthmus amounted to \$666,135.53, of which \$411,916.29 was repaid to appropriations, \$235,876.61 was commissary collections, and other trust funds, and \$18,342.63 was miscellaneous receipts to be covered into the Treasury. Of the miscellaneous receipts, \$418.80 was collected on account of tolls. Collections by the Disbursing Clerk at Washington amounted to \$7,657.49. Deposits in the sum of \$4,750 were made with the Assistant Treasurers to be applied in payment of tolls and other charges against vessels using the Canal. Canal revenue collections and miscellaneous funds received amounted to \$202,971.92, and disbursements under the same heading amounted to \$225,901.17.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

One hundred and seventy-two licenses of all kinds were issued. Twenty-one estates were received for administration and 17 settled, the total cash received during the month amounting to \$1,180.91, the total value of the estates closed being \$258.71. At the port of Balboa 59 vessels entered and 53 cleared, and at the port of Cristobal 58 vessels entered and 57 cleared.

Postal service—Postmasters remitted on account of money order fees, stamp sales, second class mail collections, postage due collections, and box rent receipts, \$8,213.60. Money orders issued during the month aggregated \$293,936.37. Of this total, \$103,725 represented the value of deposit money orders issued without fee in lieu of postal savings certificates. Deposit money orders were paid to the value of \$94,865, and postal savings certificates to the value of \$14,882. The balance of postal savings deposits on hand at the close of the month, represented by unpaid certificates and deposit money orders, aggregated \$432,930, as compared with \$438,952 at the close of the previous month.

#### POLICE AND FIRE DIVISION.

Three hundred and forty-nine arrests were made, of which total 316 were males. Sixty-one convicts were confined in the penitentiary at the close of the month. Seven persons were deported, four of whom were convicts who had completed their sentence in the penitentiary, and three were prisoners who had served their terms in jail.

Nineteen fires occurred, Panama Canal property suffering damage to the extent of \$403, and Panama Railroad property to the extent of \$36.25. Private property and the property of the United States Army suffered no damage.

#### COURTS.

In the District Court 58 cases were settled; six civil, 27 probate, and 21 criminal cases were filed, and 111 cases of all kinds were pending at the close of the month. In the magistrate courts 12 civil and 317 criminal cases were disposed of.

#### DIVISION OF SCHOOLS.

The total enrollment was 1,549 for the white schools and 980 for the colored schools. In the white schools the net enrollment was 1,328, the average daily attendance, 1,105.6, and the average number belonging, 1,135.6. In the colored schools the net enrollment was 735, the average daily attendance, 466.2, and the average number belonging, 531.

#### Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including rehandled cargo, amounted to 239,507 tons. In addition, Panama Railroad forces stevedored a total of 5,054 tons. The following quantities of coal were bunkered in steamers: Colon agency, 4,750 tons; Balboa agency, 14,363 tons; total, 19,113 tons.

In connection with the work on pier No. 7, Cristobal, 356,369 pounds of steel were erected, and 152,200 paving bricks were laid on the floor of the pier. In addition 820 lineal feet of fender system were completed.

Filling in the rear of the United Fruit Company office and the fire station at Cristobal was started on March 15, and 14,222 cubic yards of soft rock were placed. Work was also continued on the borings for the extension of the Cristobal mole and five holes were drilled, consisting of 485.1 lineal feet of wash drilling and 38.4 lineal feet of diamond drilling.

One thousand four hundred and twenty-seven concrete blocks were poured for use at the East Breakwater, amounting to 3,992.8 cubic yards, and 352 blocks were shipped to Coco Solo.

Respectfully,

GEO. W. GOETHALS,  
Governor.

#### Post Office at Fort Randolph.

A post-office has been established at the military post on Margarita Point for the receipt and despatch of registered and ordinary mail only. No money-order business will be transacted at the office. Mail for that office should be addressed "Fort Randolph, Canal Zone."

At present the 21st Company of Coast Artillery is stationed at Fort Randolph, and the 124th Company, assigned to that post, is expected to arrive within a few weeks.

The lagoon behind Docks 13 and 14, Cristobal, is being filled with spoil from the excavation by pipeline suction dredge at the Cristobal coaling plant.

## FOR THE FOURTH OF JULY.

## Committee Arranging for Revival of Custom of Official Celebration.

The custom of holding an official celebration on the Fourth of July, which was one of the events of the year in the construction period, is to be revived this year. Last year in the absence of the Governor from the Isthmus no official celebration was arranged for, but on Saturday, April 22, he appointed a committee to supervise the arrangement of suitable exercises; and at the first meeting of the committee, held on April 25, the sentiment was in favor of having this year a "wide open" celebration which should equal in extent and if possible, excel in enthusiasm the celebrations of previous years.

It was decided at the meeting of the committee to hold the celebration at Balboa, as the place offering the best facilities, all around.

The extent to which the plans of the committee can be carried out will depend on the responsiveness of the people on the Isthmus. There are no funds left over from previous years, and the expenses of the celebration will have to be met by contributions.

The chairman of the finance committee has been authorized to solicit subscriptions from gold employes of the Canal and railroad, American citizens, and business men of Panama and Colon. Employers' subscriptions may be covered by payroll deductions. All subscribers to the fund will be furnished free transportation on the Panama Railroad to Balboa and return. In addition, it has been decided to furnish a free lunch in the middle of the day; and in general to give the day as much of the old time barbecue spirit as the means will allow.

The chairmen of the several committees were authorized to proceed with their work, and as soon as an estimate can be formed of the probable amount of the donations allotments will be made to the committees so that they can regulate their performances by the allowable expenditures.

The executive committee of the celebration consists of Commander H. I. Cone, Marine Superintendent, chairman; and the following, who are chairmen of the committees indicated: Capt. F. H. Smith, Assistant Chief Quartermaster, entertainment committee; Mr. J. H. McLean, Paymaster, finance; Mr. C. H. Motsett, Superintendent of the Panama Railroad, transportation; Mr. Seymour Paul, editor of THE CANAL RECORD, publicity and printing; Mr. F. M. M. Richardson, Superintendent of Clubs and Playgrounds, fireworks; Mr. Benj. L. Jacobson, Depot Commissary, refreshment; and Maj. Herbert A. White, Judge Advocate, military headquarters, music and dance. The men designated as chairmen of the committees were empowered to appoint the members of their respective committees.

The next meeting of the executive committee will be held early in May, at the call of the chairman. Consideration will have been given in the meantime to the feasibility of having dances and smaller displays of fireworks in Cristobal-Colon, Gatun, and Pedro Miguel and Paraiso on the night of the Fourth, in addition to the principal festivities at Balboa.

The chairmen of the several committees will welcome suggestions toward making the celebration representative and enjoyable.

## CIVIL SERVICE EXAMINATIONS.

Assistant in Water Requirement Investigations; Shop Apprentice; Entomological Inspector; Cartographer; Assistant in Dry Land Abolition; Printer.

## ASSISTANT IN WATER REQUIREMENT INVESTIGATIONS (MALE).

The United States Civil Service Commission announces an open competitive examination for assistant in water requirement investigations, for men only, about May 21, 1916 (date to be left blank in application), at Balboa Heights, C. Z. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Bureau of Plant Industry, Department of Agriculture, for duty in Washington, D. C., or in the field, at salaries ranging from \$1,080 to \$1,380 per annum, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Questions on water relations of plants.....	20
2. Questions on either (a) biophysics or (b) chemistry, the subject being optional with the applicant.....	30
3. Thesis (to be delivered to the examiner on the day of the examination).....	15
4. Education and experience.....	35
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z. Applications should be properly executed, excluding the medical certificate, and filed with the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z., in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form.

## SHOP APPRENTICE (MALE).

The United States Civil Service Commission announces an open competitive examination for shop apprentice, for men only, about May 21, 1916 (date to be left blank in application), at Balboa Heights, C. Z. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Bureau of Standards, Department of Commerce, at salaries ranging from \$480 to \$540 per annum, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Arithmetic (addition, subtraction, multiplication, and division of whole numbers and common and decimal fractions).....	30
2. Letter writing (a letter of not less than 125 words on some subject of general interest. Competitors may select either of two subjects given).....	10
3. Practical questions.....	20
4. Education and training.....	40
Total.....	100

This examination is open to all male citizens

of the United States who meet the requirements. Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z., in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form.

## ENTOMOLOGICAL INSPECTOR (MALE).

The United States Civil Service Commission announces an open competitive examination for entomological inspector, for men only, about May 21, 1916 (date to be left blank in application), at Balboa Heights, C. Z. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Federal Horticultural Board, Department of Agriculture, for duty in Washington, D. C., or in the field, at a salary ranging from \$1,000 to \$1,740 per annum, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Entomology.....	30
2. Practical questions in inspection work.....	35
3. Education and experience.....	35
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z. Applications should be properly executed, excluding the medical certificate, and filed with the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z., in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form.

## CARTOGRAPHER (MALE).

The United States Civil Service Commission announces an open competitive examination for cartographer, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Office of Farm Management, Department of Agriculture, Washington, D. C., at a salary of \$1,500 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, by transfer, or promotion.

The duties of this position will be to assist in the preparation of maps for the Atlas of Agriculture of the United States.

Competitors will not be assembled for examination, but will be rated on the following subjects, which will have relative weights indicated:



Subjects.	Weights.
1. Education and experience.....	67
2. Manuscript maps.....	40
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 304, stating the title of the examination for which the form is desired, to the Administration Building, Balboa Heights, C. Z. Applications should be properly executed, excluding the medical certificate, and must be filed with the Commission at Washington, with the material required, prior to the hour of closing business on May 16, 1916.

#### ASSISTANT IN DRY LAND ARBORICULTURE (MALE).

The United States Civil Service Commission announces the postponement to May 21, 1916 (date to be left blank in application), of the open competitive examination for assistant in dry land arboriculture, for men only, announced to be held on April 19, 1916.

Senior students of colleges or universities of recognized standing will be admitted to this examination upon filing applications showing them to be eligible, but the names of such senior students will not be entered on the eligible register, in the event they attain eligibility in the examination, until they have furnished proof of actual graduation.

#### PRINTER (MALE AND FEMALE).

The United States Civil Service Commission announces an open competitive examination for printer, for both men and women, about June 11 and 12, 1916 (date to be left blank in application), at Balboa Heights, C. Z. From the register of eligibles resulting from this examination certification will be made to fill vacancies as they may occur in both permanent and temporary positions of printer, at 60 cents an hour, in the Government Printing Office and other branches of the service, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will be examined in the following basis subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Spelling (20 words of more than average difficulty).....	3
2. Arithmetic (simple tests in addition, subtraction, multiplication, and division of whole numbers, and United States money).....	3
3. Letter writing (a letter of not less than 100 words on some subject of general interest. Competitors may select either of two subjects given).....	3
4. Penmanship (the legibility, rapidity, neatness, general appearance, etc., of the competitor's handwriting in the subject of letter writing).....	3
5. Copying from rough draft.....	15
6. Abbreviations.....	5
7. Correcting proof, embracing the interpretation of proofreader's marks.....	10
8. Tabulating, arrangement of matter in tabular form and indication of the cast.....	8
9. Job composition, making-up, imposing, bank work, editing and proofreading, jacket writing, estimating, and computing.....	25
10. Training and experience as book and newspaper compositor.....	25
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for forms 304 and 1745, stating the title of the examination for which the forms are desired, to the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Secretary, Board of Civil Service

Examiners, Balboa Heights, C. Z., in time to arrange for the examination at the place selected by the applicant. The exact title of the examination is given at the head of this announcement should be stated in the application form.

#### Stamped Envelopes.

The Division of Posts has placed on sale in all Canal Zone post-offices stamped envelopes of the denomination of one and two cents. These stamped envelopes, the first to be placed on sale in the Canal Zone, are ordinary letter size of good quality white paper, and will be sold at the following prices:

Quantity.	PRICE.	
	1-cent.	2-cent.
1.....	.02	.03
2.....	.03	.05
3.....	.04	.07
4.....	.05	.09
5.....	.06	.11
6.....	.07	.13
7.....	.08	.15
8.....	.09	.17
9.....	.11	.20
10.....	.12	.22
11.....	.13	.24
12.....	.14	.26
13.....	.15	.28
14.....	.16	.30
15.....	.17	.32
16.....	.18	.34
17.....	.19	.36
18.....	.20	.38
19.....	.21	.40
20.....	.22	.42
21.....	.24	.45
22.....	.25	.47
23.....	.26	.49
24.....	.27	.51
25.....	.28	.53
30.....	.35	1.05
100.....	1.10	2.10
250.....	2.75	5.25
500.....	5.50	10.50
1,000.....	11.00	21.00

#### Seismic Disturbances.

Two seismic disturbances were recorded at the seismographic observatory at Balboa Heights in the night of April 23-24. The first began at 11:30 p. m. and ended at 11:38:20 p. m. on the 23rd. It had a maximum amplitude of two millimeters, an intensity of I or II, and the epicenter of disturbance was approximately 600 miles distant. The second began at 3:03:30 and ended at 3:36 a. m. on the 24th. The maximum amplitude was 88 plus millimeters. The intensity of the shock was III or IV, and the distance to the epicenter of disturbance approximately 475 miles, in a northerly direction.

In the night of April 25-26, five separate shocks were recorded. The most perceptible had an intensity of V.

#### Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Edward Bryson.....	76961	U. S. A.....	Gatun.....	Gatun Locks.....	April 7, 1916.
Sarah Lewis.....	9347	Barbados.....	Colon.....	P. R. R. laundry.....	April 11, 1916.
Wm. T. Lencock.....	34379	Jan a.....	Colon.....	Commissionary.....	April 8, 1916.
John Whitfield.....	100160	Jamaica.....	Colon.....	P. R. R.....	April 10, 1916.
Harold L. L. ....	90160	Jamaica.....	Colon.....	Colon agency.....	April 5, 1916.
George Mohan.....	79775	Jamaica.....	Colon.....	Colon agency.....	March 1, 1916.
Gonzales Paul.....	32890	Anti.....	Pedro Miguel.....	Mun. Eng. Div.....	April 17, 1916.
David Kei.....	95606	Jamaica.....	Panama.....	Transportation.....	April 16, 1916.
Elias Simmons.....	39360	Jamaica.....	Panama.....	Supply Dept.....	April 11, 1916.
Harry Whittaker.....	78289	Jamaica.....	Panama.....	Health Dept.....	April 15, 1916.
Henry Williams.....	89792	St. Lucia.....	Cristobal.....	Colon agency.....	April 15, 1916.

The estates of the abovenamed deceased employees of the Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Acting Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## OFFICIAL CIRCULARS.

### Employees' 24-Trip Tickets.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT, BALBOA HEIGHTS, C. Z., April 15, 1916. CIRCULAR NO. 608 3 (superseding circular No. 604-2): 1. Twenty-four-trip tickets may hereafter be issued to replace those lost by employees. Loss should be reported to this office immediately, and reissuance will be made after a lapse of 30 days.

2. Attention is invited to the fact that any person using an employee's 24-trip ticket, to which he is not entitled through ownership, may be prosecuted for larceny.

GEO. W. GÖTHALD, Governor, The Panama Canal, President, the Panama Railroad Company.

### All Accommodations on P. R. R. Ships Assigned, to May 18.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT, BALBOA HEIGHTS, C. Z., April 22, 1916.

To all concerned—All available accommodations on the steamships of the Panama Railroad Steamship Line scheduled to sail from Cristobal up to and including the sailing of the steamer *Cristobal* on May 18, 1916, having been assigned, no additional applications should be submitted.

A number of applications are being held in this office, and arrangements will be made to accommodate such employees on the steamships scheduled to sail after May 18. In cases where this congestion prevents the employee entering on his leave of absence within the limit of the four months' period steps will be taken to have the leave postponed.

It may be stated that an effort is being made to have the transport *Kilpatrick*, soon to arrive at Cristobal, carry passengers on her return voyage to New York; however, at this moment it can not be definitely stated whether this can be done.

By direction of the Governor.

W. P. COPELAND, Acting Executive Secretary.

### United Fruit Company With Fares Reduced Rates for Canal Employees.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT, BALBOA HEIGHTS, C. Z., April 24, 1916. To all concerned—The following notice has been received from the United Fruit Company:

"Effective May 1, 1916, special fares now accorded Panama Canal employees and their families and officers and enlisted men of the United States Army and Navy stationed on the Isthmus of Panama and their families, are withdrawn.

"The above does not in any way affect special fares accorded Panama Railroad & Steamship Company employees and their families, which will remain in effect until further notice."

Please be guided accordingly.

W. P. COPELAND, Acting Executive Secretary.

### Acting Chief Quartermaster.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT, BALBOA HEIGHTS, C. Z., April 22, 1916. To all concerned—Effective April 24, 1916, and during



the absence of Maj. William R. Grove on leave, Capt. F. H. Smith will be Acting Chief Quartermaster.  
**Geo. W. Goethals, Governor.**

**Acting For Engineer of Docks.**

PANAMA RAILROAD COMPANY,  
 OFFICE OF ENGINEER OF DOCKS,  
 CRISTOBAL, C. Z., April 18, 1916.

Effective April 26, 1916, Mr. F. W. Blackwood will be in charge of the Engineer of Docks Division, during the absence on leave of the underigned.

**T. B. MINNIECHIE,**  
*Engineer of Docks.*

**Accountable Official.**

THE PANAMA CANAL,  
 ACCOUNTING DEPARTMENT,  
 BALBOA HEIGHTS, C. Z., April 18, 1916.

CIRCULAR No. 114:

Effective this day, Maj. E. E. Persons is designated an accountable official of The Panama Canal, vice Lieut.-Col. Chas. F. Mason, and as such will account for all nonexpendable property in the custody of the Health Department.

**H. A. A. SMITH,**  
*Auditor, The Panama Canal.*

Approved:  
**Geo. W. Goethals, Governor.**

**Lidgerwood Cars for Lumber Service.**

PANAMA RAILROAD COMPANY,  
 OFFICE OF MASTER OF TRANSPORTATION,  
 BALBOA HEIGHTS, C. Z., April 14, 1916.

TRANSPORTATION BULLETIN No. 241:

To all concerned—One hundred Lidgerwood cars are being stenciled and set aside for the Supply Department for the purpose of hauling under load at the Panama-Balboa terminal with lumber. These cars will be stenciled, "For Lumber Service, Supply Department, Panama-Balboa Terminal," and must not undergo any circumstances he used for other purposes. Please be governed accordingly.

**S. W. HEALD,**  
*Master of Transportation.*

**Examination by Board of Local Inspectors.**

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, May 3, 1916, beginning promptly at 9 a.m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gatun, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gatun, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, May 5, 1916, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

**Geo. J. VANDERSLICE,**  
*Recorder, Board of Local Inspectors.*

**Misdirected Letters.**

BALBOA HEIGHTS, C. Z., April 25, 1916.  
 The following insufficiently addressed letters and papers have been received at the office of the Director of Posts and may be procured upon request of the addressees. Requests may be made by telephone, calling No. 183: Balboa: Barney Theophilus, LeBlanc, Joseph; Bangham, C. R., NeBlanc, Joe; Cameron, John, Peterson, Carl P. R.; Delhart, Clarence, Schneider, Wm.; Harris, Gilbert, Steward, Major M. B.; Lamont, Mr. & Mrs. Wilbur Swideman, Mr. & Mrs. G.; Lang, Mrs. J. W., Williams, Mrs. M.

**JOINT LAND COMMISSION.**

**Calendar.**

Following is a calendar of claims set for hearing for the week ending April 29, 1916:

*Monday, April 24*—Docket Nos. 1208 and 2851, José Gabriel Duque.  
*Thursday, April 27*—Docket No. 1214, Manuel Puerta; docket No. 1215, Juan Chiquito; docket No. 1216, Pedro Romero; docket No. 1218, Maria Eduarda Garay; docket No. 1223, Modesto (Monesto) Leon; docket No. 1228, Raul Herrera; docket No. 1230, Juan José de Leon; docket No. 1231, José Mina Cavelle; docket No. 1232, Pedro Correa (Carrera); docket No. 1234, Pascual Romero; docket No. 1238, Evaristo Cevallo.

**Notice.**

Following is the calendar of claims set for hearing for the week ending May 6:

*Monday, May 1*—Docket No. 1244, Lee Jan (Hing Lee); docket No. 1245, Theodore J. de Salda; docket No. 1249, Fernando Garay; docket No. 1252, Julio Torres; docket No. 1253, Marcelino Melendez; docket No. 960, W. A. Burke.  
*Tuesday, May 2*—Docket No. 1263, Eusebio Zuniga; docket No. 1281, Nicholas Rose; docket No. 1290, George Derby; docket No. 1291, Casimiro McKenzie.  
*Wednesday, May 3*—Docket No. 1296, Gerardo Ortega and Maria Magallon de Angeron.  
*Thursday, May 4*—Docket No. 1304, Angel Maria Mendoza; docket No. 1308, José Domingo Rosedo; docket No. 1309, Bonifacio Monserra.

**WILLIAM TAYLOR, Secretary.**

**Rule of Dismissal.**

*In the matter of claim of Pablo Jurado E., for property located near Cimino, rule of dismissal No. 249, docket No. 254, April 19, 1916*—The claim of Pablo Jurado E., docket No. 524, which was regularly heard by the Commission and upon which final argument was heard on April 17, 1916, is hereby disallowed, as the evidence presented to the Commission does not justify an award being made.

**\*EDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOVE, RICARDO J. ALFARO, Comisarios.**

**Rainfall from April 1 to 22, 1916, Inclusive.**

STATIONS.	Maximum in one day.	Date.	Total for period.
	Inches.	Inches.	Inches.
<b>Pacific Section—</b>			
Balboa.....	.89	11	1.35
Balboa Heights.....	.82	11	1.66
Miraflores.....	1.32	20	4.15
Pedro Miguel.....	1.10	17	5.50
Rio Grande.....	1.41	11	3.51
<b>Central Section—</b>			
*Culebra.....	1.72	21	4.40
*Empacho.....	1.00	11	2.98
*Empire.....	1.43	21	3.00
Gambou.....	1.07	22	3.30
*Juan Mina.....	1.33	22	4.07
Alajuela.....	1.97	11	2.16
*Vigia.....	2.40	11	2.45
*Fríjoles.....	1.85	11	2.55
*Monte Lirio.....	2.79	11	3.78
<b>Atlantic Section—</b>			
Gatun.....	2.45	11	2.86
*Brazos Brook.....	1.84	11	2.27
Colon.....	.76	11	1.12

\*Standard rain gage—readings at 5 p. m. daily.  
 Automatic rain gage at unstarred stations—values, midnight to midnight

**Stages of the Chagres River, Gatun Lake, and Miraflores Lake.**

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, April 22, 1916.

DAY AND DATE.	Vigia.	STATIONS.			
		Alhajuela.	Gatun.	Colon.	Miraflores Lake.
Sun., April 16.....	125.20	91.3	86.15	86.10	54.15
Mon., April 17.....	125.15	91.3	86.15	86.10	54.15
Tue., April 18.....	125.65	94.10	86.20	86.10	54.60
Wed., April 19.....	125.48	92.00	86.18	86.10	54.00
Thurs., April 20.....	125.25	91.56	86.18	86.10	54.10
Fri., April 21.....	125.20	91.48	86.18	86.10	54.20
Sat., April 22.....	125.21	91.39	86.18	86.10	54.20
Heights of low water to nearest foot.....		125.0	91.0	86.0	54.0

**SHIPPING INFORMATION.**

**Sailings of Vessels in Regular Service with the United States.**

NEW YORK TO CRISTOBAL-COLON.			
Vessel.	Line.	Sails.	Arrives.
Almirante.....	U. F. C.	April 19.....	April 26
Panama.....	P. R. R.	April 20.....	April 26
Pastores.....	U. F. C.	April 22.....	April 30
Almiron.....	U. F. C.	April 26.....	May 3
Almiron.....	P. R. R.	April 27.....	May 3
Colomares.....	U. F. C.	April 29.....	May 7
Carrillo.....	U. F. C.	May 3.....	May 10
Cristobal.....	P. R. R.	May 4.....	May 11
Tenadores.....	U. F. C.	May 6.....	May 14

**CRISTOBAL-COLON TO NEW YORK.**

Carrillo.....	U. F. C.	April 20.....	April 27
Almiron.....	P. R. R.	April 27.....	May 4
Panama.....	U. F. C.	April 27.....	May 4
Almiron.....	U. F. C.	May 1.....	May 9
Panama.....	P. R. R.	May 4.....	May 10
Almiron.....	U. F. C.	May 4.....	May 11
Pastores.....	U. F. C.	May 8.....	May 15
Almiron.....	P. R. R.	May 11.....	May 17
Zacapa.....	U. F. C.	May 11.....	May 18
Colomares.....	U. F. C.	May 15.....	May 22
Cristobal.....	P. R. R.	May 18.....	May 24

**NEW ORLEANS TO CRISTOBAL-COLON.**

Carrillo.....	U. F. C.	April 22.....	April 29
Heredia.....	U. F. C.	April 26.....	May 1
Turrialba.....	U. F. C.	April 29.....	May 6
Parishimo.....	U. F. C.	May 3.....	May 8
Alenos.....	U. F. C.	May 6.....	May 13
Carrillo.....	U. F. C.	May 10.....	May 15

**CRISTOBAL-COLON TO NEW ORLEANS.**

Parishimo.....	U. F. C.	April 23.....	April 28
Alenos.....	U. F. C.	April 23.....	May 1
Alenos.....	U. F. C.	April 30.....	May 5
Carrillo.....	U. F. C.	April 30.....	May 8
Heredia.....	U. F. C.	May 7.....	May 12
Turrialba.....	U. F. C.	May 7.....	May 15
Parishimo.....	U. F. C.	May 14.....	May 19
Alenos.....	U. F. C.	May 14.....	May 22

**Mail Despatches.**

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week.

The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.

\*Note—The sailings on Monday, May 1 and May 29, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7:10 a. m., connects with the despatches for the sailing on May 1.

When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

**Fuel.**

Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 1.00 and 1.10 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bulk, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel, to advance on May 1. Prices from the corporations may be obtained on application to them.

**Schedule of Launch Service to Taboga.**

Following the placing of the new gasoline launch Taboga in service, the schedule of launch sailings between Balboa and Taboga Island is now as follows:

From Balboa—Daily, launch Taboga leaves for Taboga at 9:45 a. m., and at 5:30 p. m.

From Taboga—Daily, launch Taboga leaves for Balboa at 10:45 a. m., and at 6:45 p. m. The 10:45 a. m. trip from Taboga may be delayed at times to 2 p. m., under orders given by the Chief Quartermaster, the manager of the Hotel Aspinwall, or the Captain of the Port of Balboa.

On Mondays and days following holidays the launch Aspinwall will be used to supplement the regular daily service, leaving the dredge landing for Taboga at 5 a. m., and returning from Taboga at 6:30 a. m.

## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., April 23, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
April 17.....	<i>Arabien</i> .....	Danish.....	Orient Steamship Company.....	Philadelphia.....	Shanghai.....	Oil.....	7,930	5,981	4,681
April 17.....	<i>Foreic</i> .....	British.....	Foreic Co. Ltd.....	Baltimore.....	Valparaiso.....	Coke.....	4,185	4,112	3,110
April 18.....	<i>Potomac</i> (tug).....	American.....	United States Navy.....	Cristobal.....	Balboa.....				
April 18.....	<i>Sanuki Maru</i> .....	Japanese.....	Nippon Yusen Kaishiki Kaisha.....	New York.....	Vladivostok.....	General powder.....	6,400	6,123	4,206
April 18.....	<i>City of Sparta</i> .....	British.....	Norton Lilly & Company.....	New York.....	Vladivostok.....	General powder.....	7,570	5,823	4,310
April 21.....	<i>City of Vienna</i> .....	British.....	Norton Lilly & Company.....	New York.....	Yokohama.....	General.....	11,000	7,286	5,602
April 21.....	<i>Solano</i> .....	American.....	Solano Steamship Co.....	Cristobal.....	Corinto.....	Coffee (sacks).....	1,200	958	581
April 22.....	<i>San Juan</i> .....	American.....	Pacific Mail S. S. Company.....	Cristobal.....	San Francisco.....	General.....	2,369	1,578	

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

April 17.....	<i>Copac</i> .....	British.....	New York & Pacific S. S. Co.....	Calita Buena.....	Charleston.....	Nitrates.....	4,350	3,221	2,206
April 17.....	<i>Sclandio</i> .....	Danish.....	East Asiatic Company.....	Valparaiso.....	Copenhagen.....	Nitrates, general.....	6,285	5,441	4,090
April 17.....	<i>Gladyss</i> .....	British.....	Universal Steam Nav. Company.....	Mejillones.....	United Kingdom.....	Nitrates, general.....	5,100	4,314	3,295
April 17.....	<i>Conala</i> .....	British.....	Consols Steamship Company.....	Guayaquil.....	Colon (orders).....	Nitrates.....	7,780	4,551	3,445
April 17.....	<i>Solano</i> .....	American.....	Hartwood Lumber Company.....	Colon (orders).....	Colon (orders).....	General.....	1,550	958	581
April 17.....	<i>San Juan</i> .....	American.....	Pacific Mail S. S. Company.....	San Francisco.....	Colon (orders).....	General.....	1,600	2,369	1,578
April 17.....	<i>Nissei Maru</i> .....	Japanese.....	Okazaki Kisen Kaisha.....	Callao.....	New Orleans.....	Nitrates.....	3,908	3,276	2,319
April 18.....	<i>Dukoton</i> .....	American.....	American-Hawaiian Line.....	Tocopilla.....	Delaware Bkwt.....	Nitrates.....	8,560	7,156	5,016
April 18.....	<i>Warren</i> .....	British.....	Warren Steamship Company.....	Iquique.....	Norfolk.....	Nitrates.....	5,800	4,134	3,066
April 19.....	<i>Rionow</i> .....	Dutch.....	Stroomvaard Maatsch.....	Iquique.....	Rotterdam.....	Nitrates.....	8,827	7,787	5,382
April 20.....	<i>Limari</i> .....	Chilean.....	South American S. S. Company.....	Talcahuano.....	Cristobal.....	General.....	1,740	3,631	2,421
April 22.....	<i>Dukoton</i> .....	American.....	Pacific Steam Nav. Company.....	Callao.....	Cristobal.....	General.....	2,410	42	2,772
April 22.....	<i>Santa Clara</i> .....	American.....	W. R. Grace & Company.....	Valparaiso.....	New York.....	Nitrates, copper.....	7,411	6,743	4,492
April 22.....	<i>Crubamba</i> .....	Peruvian.....	Peruvian Line.....	Callao.....	Cristobal.....	General.....	3,243	4,957	3,118
April 22.....	<i>Coya</i> .....	British.....	N. Y. & Pacific S. S. Company.....	Tocopilla.....	Baltimore.....	Nitrates.....	4,250	3,222	2,216
April 22.....	<i>Andijk</i> .....	Dutch.....	Holland-American Line.....	Mejillones.....	Rotterdam.....	Nitrates.....	8,627	6,350	4,632
April 22.....	<i>Banlu</i> .....	American.....	U. S. Steel Products Company.....	Antofagasta.....	Cristobal.....	Nitrates, minerals.....	5,750	4,605	3,047
April 22.....	<i>Potomac</i> (tug).....	American.....	United States Navy.....	Balboa.....	Cristobal.....				

## ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

April 17.....	<i>Forer</i> .....	Steamship Forer Company.....	Baltimore.....	April 24.....	<i>Somerset</i> .....	Tuxpan.....
April 18.....	<i>Sanuki Maru</i> .....	Nip. Yusen Kaishiki K. sha.....	New York.....	April 24.....	<i>Suruga</i> .....	New York.....
April 19.....	<i>Alma</i> (launch).....	Private.....	Porto Bello, R. P.....	April 28.....	<i>Ranella</i> .....	Anglo-Saxon Pet. Company.....
April 20.....	<i>City of Vienna</i> .....	Norton Lilly & Company.....	New York.....	April 28.....	<i>Lord Derby</i> .....	Occidental & Oriental S. N.....
April 22.....	<i>Ormiston</i> .....	Orm. Steamship Company.....	Cardiff.....	April 29.....	<i>Yhakotune</i> .....	Norton Lilly & Company.....
April 23.....	<i>Kentro</i> .....	U. S. Steel Products Co.....	New York.....			

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
April 19.....	<i>Horewood</i> .....	Century Shipping Co.....	Cardiff.....	April 19.....	<i>Horewood</i> .....	Century Shipping Co.....	Atlantic Ocean.
April 20.....	<i>Siena</i> .....	La Veloce Line.....	Genoa.....	April 21.....	<i>Leonidas</i> .....	United States Navy.....	Coast ports.
April 21.....	<i>Terrier</i> .....	W. Eadie.....	Liverpool.....	April 22.....	<i>Camilo</i> .....	Elders & Fyffes.....	Bristol & Kingstons
April 22.....	<i>Camilo</i> .....	Elder & Fyffes.....	Port Limon.....				

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

April 25.....	<i>Hatti</i> .....	Compagnie Gen. Trans.....	Bordeaux.....	April 24.....	<i>Syltonion</i> .....	Leyland Line.....	Galveston.
April 25.....	<i>San Mateo</i> .....	.....	New York.....	April 25.....	<i>Siena</i> .....	La Veloce Line.....	Genoa.
				April 30.....	<i>Hatti</i> .....	Compagnie Gen. Trans.....	Bordeaux.
					<i>Sclandio</i> .....	East Asiatic Company.....	Copenhagen.
					<i>San Mateo</i> .....	.....	New York.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

## DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
April 17.....	<i>Amica</i> .....	Pacific Steam Nav. Co.....	Tumaco.....	April 7.....	<i>Sinaloa</i> .....	Akties Baha California.....	San Francisco.
April 18.....	<i>Alita</i> .....	.....	Camp Sab bath.....	April 18.....	<i>Palena</i> .....	South American S. S. Co.....	South American ports.
				April 19.....	<i>Hualaga</i> .....	Peruvian Steamship Line.....	Callao.
				April 20.....	<i>Cauca</i> .....	Pacific Steam Nav. Co.....	Valparaiso.
				April 23.....	<i>Acujallo</i> .....	Pacific Steam Nav. Co.....	Salina Cruz.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

April 24.....	<i>*Spithead</i> .....	Clyde Shipping Co.....	Mejillones.....	April 24.....	<i>Academy</i> .....	Anglo-Amr. Exploration Co.....	Buenaventura.
April 24.....	<i>Balboa</i> .....	Columbian Maritime Co.....	San Francisco.....	April 25.....	<i>*Spithead</i> .....	Clyde Shipping Company.....	Colon, for orders.
April 25.....	<i>*Celia</i> .....	N. Y. & Pacific S. S. Co.....	South Pacific ports.....	April 25.....	<i>Jumaco</i> .....	Pacific Steam Nav. Co.....	Tumaco.
April 25.....	<i>*Terrier</i> .....	Wilhelm. Dmpsk. Akties.....	Salta.....				
April 27.....	<i>*British Empire</i> .....	W. Eadie.....	Salina Cruz.....				
April 30.....	<i>*Gozan Maur</i> .....	Hashimoto Kisen Kaisha.....	South Pacific ports.....				
May 1.....	<i>*Ikono Maru</i> .....	J. Nakamura.....	Moji.....				
May 1.....	<i>Huaso</i> .....	South American S. S. Co.....	Chile.....				
May 5.....	<i>*Hakenyauk</i> .....	Brown, Jenkins & Sons.....	South Pacific ports.....				
May 7.....	<i>*River Forth</i> .....	River Forth Steamship Co.....	South Pacific ports.....				

\* Indicates vessel for passage through the Canal.



## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

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Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Maximum Coal Prices.

The Governor has published a circular, No. 704-2, under date of April 17, 1916, establishing, with the approval of the Secretary of War, maximum prices to be charged for coal sold to ships by lessees of coal storage areas at the Canal terminals. The circular follows:

1. Circular No. 704, dated July 31, 1915, outlining for the information of individuals and companies general conditions relative to leasing of coal storage areas in the permanent coaling plants at the Canal terminals, contains the following paragraph, viz:

15. A maximum price per ton will be fixed by the Panama Railroad. All coal in storage, owned by individuals and companies, will be subject to purchase by any vessel using the Canal.

2. Effective July 1, 1916, and thereafter until further notice, the maximum price for coal supplied by individuals and private companies to steamships at the terminal ports of the Panama Canal will be cost, plus 25 per cent.

3. Lessees will be required to furnish The Panama Canal such information as will enable The Panama Canal to check the maximum price on this basis.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, May 1, amounted to 206,882 cubic yards. In addition, 8,000 cubic yards of spoil were removed from the Cut in miscellaneous maintenance work, and 7,093 cubic yards were rehandled.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	63,016
Gamboa.....	15-yard dipper.....	61,515
Paraiso.....	15-yard dipper.....	41,800
Corozal.....	Ladder.....	23,540
No. 83.....	Pipeline suction.....	5,845
Culebra.....	Seagraping suction.....	13,259
No. 86.....	Pipeline suction.....	8,900
No. 5.....	Belgian ladder.....	8,900

The aggregate of primary excavation from the base of Culebra slides since October 1, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the close of work on May 1, 1916, has amounted to 13,191,173 cubic yards. This has been an average of 690,483 per month.

In the current fiscal year, beginning with July 1, the total primary excavation from the Cut has amounted to 9,045,434 cubic yards up to midnight of May 1.

#### Temporary Shed on Portion of Dock 15 to Remain for the Present.

In view of the continued and growing demand on the wharf facilities at Balboa, it has been decided to postpone indefinitely the work of removing the temporary wood and corrugated shed over a portion of dock No. 15, which is part of the quay wall, and of filling to grade the area in rear of the wharf now occupied by a depressed track.

This section of the quay wall, the first of the permanent terminal facilities to be built, was roofed over with a temporary structure in the latter part of 1912 to meet the situation resulting from the growth of traffic through the port. It has been in almost continuous use since that time, and even with the new Pier 18 in use there will be further need of it for some time to come, in view of extensive shipments of lumber which will be transferred across it in the coming months.

#### Lidgerwood Flat Cars for Handling Lumber at Balboa.

With the cessation of the hauling of armor rock from Sosa Hill to the East Breakwater, Lidgerwood flat cars which have been in this service are being released. Many of them have suffered in the heavy rock service and have defects which would have to be repaired before the cars could be returned to regular main line service. It has been decided to defer repairs on 100 of these damaged cars and to use them for handling lumber at the Balboa terminal. Lumber can be unloaded on them at the ship's side and there will not be the urgent need of unloading the cars which exists when thoroughly serviceable rolling stock is under load. Most of the lumber which is handled at Balboa is Oregon fir, and as it is proposed to load not more than 45,000 pounds on each of the damaged cars, the 100 cars can hold approximately 1,500,000 feet, board measure, of the lumber.

#### Completion of Empire-Gamboa Highway.

The Empire-Gamboa road will be completed on Saturday, May 6. This is a section five miles and 350 feet in length, extending from the bridge across the Chagres River at Gamboa to a junction with the old Empire-Las Cascadas plantation road near La Pita Hill. It is a standard macadam highway with a telford base, 16 feet in width. It was built by the labor of convicts.

With the completion of this road, a highway will be opened from Panama City to Gamboa, a distance of about 19½ miles by the present road. A section of the present road, however, extending from a point in the rear of Gold Hill to the former east abutment of the old Empire suspension bridge, and thence east to the Gamboa road, has been seriously affected at places by the slides on the east bank of the Canal, north of Gold Hill, and a new road is to be run from the rear of Gold Hill to meet the Gamboa road at its junction with the plantation road.

Work on this new road was begun at its south end by district prisoners on Wednesday, April 26. The convicts in Gamboa prison will begin work at the north end the latter part of this week, advancing from the end of the road which they are just completing. The new section will have a length of three miles and 341 feet, and will effect a saving in distance of about 712 feet over the old route.

#### Chiriqui Railroad Completed.

The main sections of the Chiriqui Railroad extending from Pedregal to David, thence by two branches to La Concepción and Boquete, in the province of Chiriqui, were completed on April 15 and officially opened in the three days from April 22 to 25. The line to La Concepción was completed on February 15 and that to Boquete on April 15. The formal inauguration was attended by the principal officials of the government of Panama, and representatives of the contractors, R. W. Hebard and Company.

The contract for the construction of the road was made in February, 1914. Work began in April of that year. The road is about 50 miles long and built on a gage of three feet. Descriptions of the layout, and of the progress of the work, were published in THE CANAL RECORD on February 11, 1914, and September 2, 1914.

An additional branch line, leaving the main line at Ramal, near Dolega, and extending approximately 7½ miles to Potrerillos, is yet to be completed. This branch was surveyed, graded, and contracted for after work on the original contract was well under way, and material for its completion has only recently arrived from the United States.

The cruiser *Tennessee* passed through the Canal on April 27 on the way from Valparaíso to New York with delegates who represented the United States at a financial congress at Buenos Aires and were returning by way of the west coast, calling at various ports.



# RECEIPTS AND EXPENSES.

Slight Tolls in February.—Deficit for Fiscal Year Exceeds \$3,000,000 to March 1.

The tolls from traffic through the Canal in February amounted to \$834, while the costs charged to the operation and maintenance of the Canal during that month amounted to \$609,253.66. This makes a deficit for the month of \$608,419.66 and brings the loss in this account for the current fiscal year to \$3,058,795.87.

The tolls collected during the current fiscal year, to March 1, with the Canal in operation during June, July, August, and the first half

of September, and closed to all but small vessels since, amounted to \$1,431,970.39. In the preceding fiscal year they had amounted to \$2,287,969.64 up to March 1. During this fiscal year the expenses of operation and maintenance, especially the latter element, have exceeded the expenses for the same period last year by \$1,895,152.93. The deficit of the fiscal year to date is practically 10 times as great this year.

The heavy increase in expenses during the current fiscal year has been due principally to dredging work for maintaining the channel through Gaillard Cut. This has regularly amounted to over one-half of the total costs

for operation and maintenance. It has been practically twice as much during this fiscal year as during the same period of last year.

"Operation and maintenance" does not cover the entire Canal expenditures, but covers the cost of operations designed to keep the Canal open and in order, and those necessary to the work of handling ships through; and a proportion of overhead expenses (approximately one-third of the total for the Canal organization), being costs of sanitary work, civil government, and administration.

A summary of the charges for operation and maintenance during February is given in this table:

ITEMS.	February, 1916.	January, 1916.	February, 1915.	Fiscal Year to Date.	
				This Year.	Last Year.
Marine Division:					
Admeasurement of vessels.....	\$198.66	\$211.94	\$957.16	\$4,958.54	\$6,607.91
Local inspection.....	187.03	243.99	380.66	2,642.14	2,467.36
Aids to navigation.....	4,016.74	5,971.95	4,856.27	37,697.54	31,137.69
Pilotage.....		321.74	7,075.80	20,832.34	35,248.10
Operation of harbor tugs—balance.....	3,456.72	2,679.45		28,396.79	
Total, Marine Division.....	7,859.15	9,429.07	13,269.89	94,527.35	75,461.06
Lock operation and maintenance—					
Gatun Locks:					
Superintendence.....	903.56	1,137.38	1,731.09	8,965.82	12,393.06
Operation.....	3,880.87	3,803.51	7,865.30	55,875.99	68,114.63
Maintenance of machinery and equipment.....	4,196.17	6,107.80	7,076.50	116,212.25	49,174.90
Maintenance of structure.....	585.75	741.39	4,697.79	7,760.06	22,987.27
Miscellaneous supplies and expenses.....	158.90	110.98	149.81	1,402.55	2,042.29
Total, Gatun Locks.....	9,724.75	11,901.06	21,520.49	190,216.67	154,712.15
Gatun Spillway:					
Operation.....		32.29	66.49	729.81	737.42
Maintenance of machinery and equipment.....	556.11	1,440.98		4,004.67	3,337.51
Maintenance of structure.....	3,198.05	662.18	755.28	3,964.75	4,757.02
Total, Gatun Spillway.....	3,754.16	2,135.45	821.77	8,699.23	8,831.95
Pedro Miguel Lock:					
Superintendence.....	958.27	1,132.74	1,863.70	10,569.36	10,064.22
Operation.....	2,980.00	2,493.01	5,329.25	32,191.73	55,439.43
Maintenance of machinery and equipment.....	5,094.40	4,375.74	3,851.37	40,361.80	29,208.80
Maintenance of structure.....	905.08	671.49	4,357.50	10,757.61	16,353.32
Miscellaneous supplies and expenses.....	231.02	90.72	117.64	1,553.41	1,075.93
Total, Pedro Miguel Lock.....	9,798.77	8,763.30	15,519.46	95,433.91	112,141.70
Pedro Miguel Dam: -					
Maintenance.....					42.00
Miraflores Locks:					
Superintendence.....	1,168.49	951.8	1,848.58	10,296.20	12,018.83
Operation.....	5,621.60	4,219.74	7,025.83	44,665.11	70,059.93
Maintenance of machinery and equipment.....	8,147.25	3,781.30	9,393.34	41,329.24	53,226.85
Maintenance of structure.....	1,129.36	630.06	3,413.36	7,692.26	15,394.36
Miscellaneous supplies and expenses.....	363.38	151.56	287.70	1,922.79	2,221.71
Total, Miraflores Locks.....	16,430.03	9,734.54	21,968.81	105,905.60	152,921.66
Miraflores Spillway and East Dam:					
Operation.....	28.00	13.31		207.81	651.50
Maintenance of machinery and equipment.....	90.75	442.85	164.26	1,668.98	7,841.24
Maintenance of structure.....		58.12	276.89	387.03	597.36
Total, Miraflores Spillway and East Dam.....	118.75	514.28	441.15	2,263.82	9,090.10
Miraflores West Dam:					
Maintenance.....		7.51		347.72	377.17
Total, lock operation and maintenance.....	39,826.51	33,056.14	60,271.68	402,866.95	438,116.73
Dredging:					
Atlantic entrance.....	319.02	399.98	20,376.08	6,658.39	100,718.76
Gatun Lake.....					
Gaillard Cut.....	320,596.72	307,451.62	181,873.83	2,241,868.53	1,012,695.39
Miraflores Lake.....	4,355.06	6,082.58		19,724.07	4,978.80
Pacific entrance.....					
Total, dredging.....	325,180.80	313,934.18	202,249.91	2,268,250.99	1,118,392.95
Gatun Dam, maintenance.....	1,642.65	1,447.58	4,073.89	14,283.26	16,327.88
Removal of floating obstructions.....	1,473.31	1,628.98	1,493.21	13,476.39	8,776.17
Gatun-Mindi Levee, maintenance.....	288.42	666.52	323.46	1,192.92	22,564.96
Colon West Breakwater, maintenance.....		62.01		41,328.42	
Colon East Breakwater, maintenance.....				58.45	461.93
Naos Island Breakwater, maintenance.....					
Damages to vessels in locks.....	112.50	94.18	1,055.19	1,535.32	1,448.46
Damages to vessels in Canal.....	15,493.35	13,061.47		41,906.99	
Operation of floating derricks.....	2,121.10	4,322.07	4,824.90	15,780.23	23,889.58
Maintenance of transportation tracks.....					
Total, operation and maintenance.....	393,997.79	377,702.20	287,562.15	2,898,207.17	1,705,439.72
Proportion of overhead expenses.....	215,255.87	218,011.07	120,439.13	1,592,559.09	890,173.61
Total.....	609,253.66	595,713.27	408,001.26	4,490,766.26	2,595,613.33
Tolls earned.....	834.00	654.39	383,904.96	1,431,970.39	2,287,969.64
Tolls earned in excess of expenses.....					
Expenses in excess of tolls earned.....	608,419.66	595,058.88	24,096.30	3,058,795.87	307,643.69

## CIVIL SERVICE EXAMINATIONS.

## Junior Architect; Technical Assistant.

## JUNIOR ARCHITECT (MALE), INTERSTATE COMMERCE COMMISSION.

The United States Civil Service Commission announces an open competitive examination for junior architect, for men only, about June 11, 1916 (date to be left blank in application), at Balboa Heights, C. Z. From the register of eligibles resulting from this examination certification will be made to fill vacancies as they may occur in this position at salaries ranging from \$1,200 to \$1,630 a year in the Interstate Commerce Commission under the act providing for the valuation of the property of common carriers, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

In addition to the above salaries, necessary expenses will be allowed when absent from headquarters in the discharge of official duties.

Applicants for examination and appointment to this position are not debarred from taking any other examination to which they may be eligible. Persons employed in this position will be eligible, in the discretion of the Interstate Commerce Commission, for promotion to senior architect, grade 2, after one year of service, provided they meet the requirements as set forth in the examination for that grade. Appointments to these positions will be principally for field service. Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Theory and practice of architecture and construction.....	50
2. Education, training, and experience.....	50
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 2039, stating the title of the examination for which the form is desired, to the Secretary of the Civil Service Board, Balboa Heights, C. Z. Applications should be properly executed and filed with the Secretary of the Civil Service Board, Balboa Heights, C. Z., in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form. Applicants are referred to announcement No. 563, posted at all post-offices and clubhouses in the Canal Zone, for further information.

## TECHNICAL ASSISTANT (MALE).

The United States Civil Service Commission announces an open competitive examination for technical assistant, for men only, about June 11, 1916 (date to be left blank in application), at Balboa Heights, C. Z. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in the position of technical assistant to the tea examiner, Customs Service, Tacoma, Washington, at a salary of \$1,200 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Arithmetic (fundamental rules, fractions, weights and measures, percentage, interest, discount, commission, customhouse business, stocks and bonds, analysis, and statement of simple accounts).....	10
2. Report writing (an orderly, concise, and grammatical statement, not more than 200 words in length, of the essential facts included in a given statement of 400 or 500 words).....	10
3. Questions in chemistry.....	30
4. Thesis (to be delivered to the examiner on the day of the examination).....	15
5. Education and experience.....	35
Total.....	100

Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z., in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form.

## Progress at Ancon Clubhouse.

The enrollment of members in the new Canal clubhouse at Ancon, which was opened on March 25, amounted to 125 at the end of April. The growth of the organization has been normal, and a considerable increase is anticipated in May. The operation of the clubhouse has been satisfactory. Its regular facilities for recreation have been patronized steadily, the special entertainments in the auditorium have been well attended, and the use of the clubhouse as a gathering place is increasing.

The arrangement of separating the rooms with only low railings, allowing the secretary at his desk to have easy supervision of all the recreation rooms on the first floor and of the soda fountain, has proved satisfactory and a similar arrangement has been made in the Cristobal clubhouse.

## Obituary.

George T. Sancton, a towing locomotive operator at Miraflores Locks, died in Ancon Hospital on April 22, 1916, as the result of injuries received on April 15 from falling from a float on which he was working, 52 feet to the bottom of the floatwell. His residence in the United States was at 2818 Cleveland Avenue, New Orleans.

## NOTICES TO MARINERS.

## Changes in Lighting System.

1. A gas buoy has been established on the 17-foot spot in Cristobal Harbor which was marked by a white nun buoy, and the white nun buoy marking this spot has been discontinued. The gas buoy is cylindrical, surmounted by a pyramidal lattice superstructure painted red and black horizontal stripes, showing a red occulting light visible six miles on the following bearings:

Toro Point beacon, 23° (N. by E. 3-4. E. Mag.)

Washington Hotel left tangent, 79° 30' (E. NE, 7-16 E. Mag.)

Toro Point lighthouse, 309° (NW. 7-8 W. Mag.)

2. Two lighted buoys marking the channel in Miraflores Lake have been established, one painted red showing a fixed red light placed in 30 feet of water midway between spar buoys Nos. 4 and 6, and one painted black showing a fixed white light, placed in 40 feet of water midway between spar buoys Nos. 3 and 5. None of the spar buoys has been changed.

3. The lights displayed from beacons Nos. 1 to 22 inclusive in Gaillard Cut have been turned out. There have been established in Gaillard Cut 50 lights, lighting both banks of the Cut, extending from beacon No. 1 to beacon No. 22. These lights are spaced 1,000 feet apart and are placed six feet above the water in the Canal, just inside the Canal prism, the lights on the east bank showing white and those on the west bank showing red.

(The above notice has been published as circular No. 643-21, dated April 24, 1916.)

## Toro Point Cove Range Reconstructed.

1. The range marking the best water entering Toro Point cove has been replaced by permanent steel pipe masts. No change has been made in the day marks and characteristic of lights. The distance between the masts was increased from 180 to 1,020 feet.

2. Day marks are of diamond shapes, painted white. Red, fixed, electric lights are exhibited between sunset and sunrise.

3. True azimuth 245 degrees (S.W.  $\frac{1}{2}$  W. Mag.)

The above notice has been published as circular No. 643-22, dated April 28, 1916.

## Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Nathaniel Allen.....	108723	Jamaica.....	Camp Biedr....	P. R. R.....	April 23, 1916
Henry Anderson.....	79459-				
	89492	Jamaica.....	Camp Biedr....	Colon agency...	April 24, 1916
Robert Clark.....	62468	Jamaica.....	Colon.....	Dredging Div....	April 24, 1916
José García.....	109384	Panama.....	Rio Mandingo...	Supply Dept....	April 17, 1916
Edward Jelley.....	96571	Jamaica.....	Gamboa.....	P. R. R.....	April 27, 1916
George Merrill, alias Merrill.....	40079	Barbados.....	Dredging Div....	Panama.....	April 19, 1916
David Rall.....	96213	Jamaica.....	Panama.....	Trans., P. R. R.	April 26, 1916
George T. Sancton.....	828	U. S. A.....	Pedro Miguel...	Oper. & Maint....	April 22, 1916
John Southwell.....	31274	Antigua.....	Panama.....	Electrical Div....	April 25, 1916
John Willoughby.....	58650	Jamaica.....	Colon.....	Dredging Div....	April 24, 1916

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Acting Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## SEISMIC ACTIVITIES.

### Nine Earthquake Shocks Recorded in April.—No Damage in Canal Zone.

Nine distinct seismic disturbances were recorded at the Balboa Heights observatory during the month of April. They varied in intensity from I to V on the Rossi-Forel scale of I to X.

The first, which was recorded on April 12, was a very slight tremor and at a distance of 425 miles. Another slight movement occurred on the 17th, but the record obtained was not sufficient for estimating the distance of the epicenter, although it had the appearance of being other than a local disturbance. Two more tremors occurred during the night of April 23-24, the first beginning at 11.30 p. m. and the second at 3.02 a. m. The first was a slight tremor of intensity I or II and at a distance of about 600 miles, while the second was of sufficient violence to throw off the pen on the north-south 100-kilo instrument after an amplitude of 88.0 millimeters had been recorded. Its intensity ranged between III and IV and the epicenter was at a distance of about 475 miles.

Five other disturbances were recorded during the night of April 25-26. They varied in intensity from I to V, and in distance from 250 to 400 miles. The first, heaviest, and nearest shock began at 9:22:36 p. m., and shortly after this time the pens were thrown off from three of the instruments, the maximum movement of both the more sensitive (100-kilo) instruments being lost after an amplitude of 75.0 millimeters had been recorded.

This shock was distinctly felt by a number of persons and its effect registered by the barograph apoid and the waterstage registers at different places on Gatun Lake. The clocks in the requisition bureau at Balboa Heights and in the telephone office at Colon were stopped. So far as is known no damage was done in the Canal Zone, but dispatches from Bocas del Toro indicate that the shock there was more severe and that considerable damage was done to various structures. On the strength of reports, it estimated that the greatest intensity there was VII or VIII.

The after-shocks that followed were of much less severity, though two were of sufficient intensity to be felt.

It is probable that all the disturbances this month, with the exception of the tremor on April 17, were of common origin, and the reports from Bocas del Toro indicate that the town was nearer the epicenter of the heavy disturbance on the evening of the 25th. This, and the similarity of the records, in that the movement was stronger on the north-south components of the seismographs, would indicate that the seat of the disturbances was to the northwest of the observing station.

In the month of October, 1913, a total of 39 shocks was recorded, of which 12 occurred in one day.

### The Scale of Earthquake Intensity.

Designating the relative intensity of an earthquake by numbers on a scale is only an approximation toward scientific accuracy. To an extent, intensity is indicated by the displacement of the pens on the seismograph records, but the relation between them is by no means constant and the record can not be taken to indicate intensity with anything like mathematical certainty. Distance from the epicenter of disturbance, and the nature of the

wave both affect the amplitude of displacement as recorded by the pens. The displacement record may be said to be only a strong factor in indicating intensity, but not sufficient positively to determine it. Intensity is decided largely by observation of outside phenomena, which are considered along with the seismograph records in making up the estimate. Since measurement of these phenomena is indistinct, there enters the personal equation in finally judging the intensity; and this is in turn affected by the training and temperament of the seismologist.

The following is the Rossi-Forel scale of earthquake intensity, in which are set forth the principal indicative phenomena for the various stages of disturbance:

I. Shocks so weak as to be perceived by a single type of seismograph only.\* Not perceptible on seismographs generally, and confirmed by practiced observers only.

II. Shocks registered by seismographs generally. Confirmed by a small number of persons who are in a condition of rest.

III. Shaking noticed by many persons. Strong enough for the duration and the direction of the shocks to be estimated.

IV. Shaking noticed by persons in a state of activity. Shaking of movable objects such as windows and doors. Cracking sounds in houses.

V. Quaking generally noticed by the entire population. Large objects, like tables and other pieces of furniture, are set in motion. Ringing of some door bells.

VI. General awakening of sleepers, and general ringing of door bells. Swinging of chandeliers, stopping of clocks, visible swaying of trees and bushes. Some persons desert their houses in terror.

VII. Overturning of movable objects, falling of plaster from walls and ceiling, ringing of church bells. General terror; but no damage to structures.

VIII. Throwing down of chimneys, appearance of cracks in the walls of buildings.

IX. Partial or complete destruction of certain buildings.

X. Great catastrophe. Ruined buildings, overturning of earth layers, appearance of clefts in the earth, landslides.

\*The 100-kilo instruments at Balboa Heights are of this type.

### Rock Crusher at Gamboa.

Work has been commenced by the Division of Municipal Engineering on the bins for the permanent rock-crushing plant at Gamboa. The equipment to be used is an Allis-Chalmers No. 6 crusher, which will crush the by-product of the gravel plant commonly called No. 1 gravel. There are about 30,000 cubic yards of gravel stored at Gamboa now, ready for crushing.

### New Swimming Pool at Balboa.

With the exception of the railings, the Building Division has finished its work on the new concrete swimming pool in the rear of the Balboa clubhouse, and the pool is now ready for water. As soon as the suction pumps for the cold storage plant have been installed, and the bathhouse has been completed, the pool will be filled and put in service.

### Fort Sherman Post-office.

The name of the post-office at Toro Point has been changed from Station "B", Cristobal, C. Z., to Fort Sherman, C. Z. All mail matter intended for delivery at that office should be addressed "Fort Sherman, Canal Zone."

## NEW YORK-COLON RATES.

### New Freight Classification and Tariff of Panama Railroad Steamship Line.

The Panama Railroad Company has issued a freight classification and tariff, No. 17, publishing class and commodity rates between New York and Colon or Cristobal. The new tariff went into effect on April 20, cancelling the tariff No. 14 and supplements Nos. 1 and 2 thereto. The supplements covered automobiles and launches.

The freight classifications, covering seven closely printed pages, are essentially the same as before, and supplements Nos. 1 and 2, referred to above, are embodied in the new classifications. The tariff rates have been increased generally by 20 per cent, and will be levied, as before, per 100 cubic feet or per 100 pounds, at carrier's option. The charge per 100 pounds is exactly twice the charge per cubic foot, in all of the five classes. The advance of rates was made after the usual 30 days notice, and followed the action of the United Fruit Company in making a horizontal increase of 25 per cent, effective March 15. Both lines are receiving more cargo than can be handled conveniently, and the advance of rates by the Panama Railroad Line was deemed necessary to prevent an avalanche of cargo being diverted to it, in such quantity that it would not be able to take care of the through shipments it is obligated to carry under its working arrangements with its Pacific co-carriers.

As the Panama Railroad Company is considering a revision of the local tariff, over the railroad, no changes have been made up to this time in the through rates from New York to Panama City.

The following rules and regulations, included with the new tariff, are published as of general interest to shippers and consignees:

### Prepayment of Freight Charges.

All freight charges must be prepaid in United States gold.

### Minimum Charge.

The minimum charge from New York, N. Y., to Colon, R. P. (Cristobal, C. Z.), on any single shipment covered by bill of lading will be \$1.

### Parcel Receipts.

Packages not exceeding two (2) cubic feet will be transported from New York, N. Y., to Colon, R. P. (Cristobal, C. Z.), at rate of \$1 each. Minimum valuation \$10 per package.

### Marine Insurance.

Rates published in this tariff do not include marine insurance, which may be effected from New York, N. Y., to Colon, R. P. (Cristobal, C. Z.), under the open policy of the Panama Railroad Company at rate of 1/2 of 1 per cent.

### Explosives.

Dynamite and high explosives of any kind not carried. All articles rated at "D" carried only by special arrangement.

### Owner's Risk.

Oils and other liquids are taken only at owner's risk of leakage. Glassware, crockery, and all fragile property only at owner's risk of breakage.

All perishable property only at owner's risk of frost, heat, and decay. Cargo on deck always at owner's risk.

Strapping and Sealing Cases of Boots, Shoes, Wines, Liquors, Cigars, and Cigarettes.

Shipments of boots, shoes, wines, liquors, cigars or cigarettes, in cases, will not be accepted for transportation by the Panama Railroad Steamship Line unless the cases, said to contain such goods, are protected by Gladon clips, metal straps, or wires secured by lead seals at the ends, or some equally effective device which has been approved by this company.

### Marking of Packages.

Illegibly, or erroneously, marked packages constitute the most usual cause of delays or short deliveries. All packages should be clearly marked, preferably with initials of consignees, and must show port of destination—Colon. Suppliers' marks and brands will not be accepted as satisfactory.



**Refined Petroleum.**

Refined petroleum taken only when put up in tin cans, boxes, or in iron drums, and marked as required by United States law.

**Packages Exceeding \$100 in Value.**

On all packages of merchandise, the value of which is in excess of \$100 and is so declared on cargo receipts, there will be a charge of one and one-half (1½) per cent in addition to rates published herein. Valuation must also appear on bills of lading.

**IMPORTANT**—This company will not be liable, in the event of loss or damage resulting from fault or negligence, as detailed on bills of lading, for more than one hundred dollars (\$100) per package unless such valuation has been shown on cargo receipt and bill of lading, and extra freight paid thereon.

**Heavy or Bulky Packages or Pieces.**

Rates published in this tariff will not apply on packages or pieces the weight of which exceeds 4,000 pounds each, unless otherwise specified.

Heavy packages or pieces (exclusive of iron and steel articles) weighing 4,000 pounds or over will be subject, unless otherwise specified, to the undermentioned special charge for extra handling, in addition to the regular rate published herein:

Packages or pieces, over 2 tons, but not over 4 tons each, 50 per cent of tariff rate.

Packages or pieces, over 4 tons, but not over 6 tons each, 100 per cent of tariff rate.

Packages or pieces, over 6 tons, but not over 8 tons each, 150 per cent of tariff rate.

Packages or pieces, over 8 tons, by special agreement.

**Bills of Lading.**

The Panama Railroad Steamship Line retains three copies of bills of lading covering shipments from New York to Colon, R. P. (Cristobal, C. Z.). As many additional copies will be signed for shippers as are indicated on bills of lading, which must be presented for signature before 4 p. m. day prior to sailing of vessel.

**Gross Weight.**

On all commercial shipments for Colon, when not consigned to The Panama Canal or Panama Railroad Company, shippers are required to show on bills of lading, in kilos, the gross weight of packages.

**Consular Regulations.**

Shippers must comply with all consular regulations, for manifests, invoices, certificates, etc.; and any fine imposed by authorities at port of destination, or damage resulting from failure in this respect, or for errors or omissions therein, shall be at the risk and expense of consignees of the goods, and shall be paid by them. No consular documents required on shipments consigned to The Panama Canal or to the Panama Railroad Company.

**Consignments "To Order."**

Shipments destined to Colon may be consigned "to order," provided bills of lading clearly indicate name of party to be notified.

**Lumber and Timbers.**

Lumber and timbers exceeding 20 feet in length accepted only by special arrangement, at tariff rate plus 20 per cent. See Items 17 and 18\*.

**Commissary Supplies for the Panama Railroad Company.**

The rate from New York on supplies consigned to the commissary of the Panama Railroad Company, Colon, R. P., will be \$3.50 per ton of 2,000 pounds or 40 cubic feet, carrier's option, except where lower rates are provided in tariff, as amended.

This rate will be governed in its application by Item 9 of classification and tariff No. 17, showing extra charges on pieces and packages weighing over 4,000 pounds each.

Freight from New York consigned to the commissary of the Panama Railroad Company, Colon, R. P., and carried under refrigeration, will be subject to rate of \$5 per ton of 40 cubic feet for space occupied.

**Application of Rates.**

Class rates are to be charged per cubic foot or per 100 pounds, at the option of carrier, except where otherwise specified. Commodity rates take precedence over class rates.

In all cases where articles are described as "common," acceptance of the rate thus provided shall be equivalent to the releasing of such freight to a valuation of \$200 per ton, unless otherwise specified.

**Packages Containing Articles of More than One Class.**

In the event of different articles being shipped in the same package, the rate for the highest rated article will be charged upon the whole.

**Storage Charges.**

The Panama Railroad Steamship Line will collect from shippers storage charges at the rate of 10 cents per day per bill of lading ton or fraction thereof, on all packages for which shipping documents (bills of lading, custom house declarations and, when required, consular

papers) are not presented at this office in time to be forwarded by the steamer carrying the cargo. The charge will be counted from the date of departure of steamer carrying the cargo up to and including the date of departure of the subsequent steamer upon which the bills of lading are actually forwarded.

**Export Declarations.**

All bills of lading presented to this company for signature must be accompanied by duplicate copy of "Shipper's Export Declaration," which has been duly certified at the custom house.

**Panama Canal Supplies.**

The rates from New York applying on supplies consigned to The Panama Canal, Colon, R. P., will be as provided in this issue (freight classification and tariff No. 17), as amended, less 25 per cent, except as noted in Item 18.\*

\*Items 17 and 18 cover class and commodity rates.

**Changes in Tariff from New York to Pacific Ports in Colombia, Ecuador, Peru, and Chile.**

A supplement No. 3 to the freight classification and tariff No. 10, covering shipments over the Panama Railroad Steamship Line and connecting carriers to south Pacific ports in Colombia, Ecuador, Peru, and Chile, was issued April 11 and becomes effective May 11. Its principal changes are the cancellation of all class and commodity rates to Lebu, Corral, Ancud, and Puerto Montt, Chile, and Lobitos, Peru, leaving no rates in effect to these ports; making the minimum bill-of-lading charge from New York to Los Vilos and Punta Arenas \$12.50, and the minimum to all other ports embraced under the tariff \$7.50; and making all rates as per freight classification and tariff No. 10, as amended, subject to increase of 50 per cent, effective May 11.

**Changes in Tariff from New York to Central American and Mexican Ports.**

Amendments to the freight classification and tariff governing shipments over the Panama Railroad Steamship Line and connecting carriers from New York to Central American and Mexican ports are contained in supplement No. 1 to freight classification and tariff No. 16. The supplement was issued April 11 and becomes effective on May 11. The changes embody an advance of the minimum charge on any single shipment covered by bill of lading to the ports covered by the tariff to \$7.50, from the former minimum charge of \$5; and all other rates in the tariff are to be subject to an increase of 30 per cent.

**OFFICIAL CIRCULARS.****Appointment.**

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., April 27, 1916.

**CIRCULAR NO. 661-27:**

By virtue of the authority vested in me, I hereby appoint Walter F. Van Dame Assistant Prosecuting Attorney of the Canal Zone, under the direction of the District Attorney, and in conformity with the Canal Zone laws.

Geo. W. GOETHALS,  
Governor.

**Equipment from Pacific Terminals Available for Transfer.**

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., April 29, 1916.  
HEADS OF DEPARTMENTS AND DIVISIONS:  
The Pacific terminals subdivision of the Division of Terminal Construction having been abolished as per circular of the Engineer of Terminal Construction, approved by me April 24, there will be available for transfer to other parts of the work, a considerable amount of equipment, tools, and material, which I desire transferred to other divisions where it can be used to advantage in its present condition, or put in usable condition at a nominal charge.

I desire you to go into this matter as quickly as possible, and arrange to accept transfer of all items

for which you will have any use, making report to this office as to items taken over by you.

Geo. W. GOETHALS,  
Governor, The Panama Canal,  
President, Panama Railroad Company.

**In Charge of Dredging Division.**

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., April 15, 1916.

To all concerned—Effective April 16, 1916, Mr. James Macfarlane, Superintendent of Dredging, will be in charge of the Dredging Division during the absence on leave of Mr. W. G. Comber.

Geo. W. GOETHALS,  
Governor.

**Acting Captain of the Port at Balboa.**

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,  
BALBOA HEIGHTS, C. Z., May 1, 1916.

To all concerned—Effective May 4, 1916, and until the return from leave of Lieut. A. B. Reed, U. S. Navy, Mr. Charles Svensson will be Acting Captain of the Port, Balboa.

H. I. CONE,  
Marine Superintendent.  
Approved:  
Geo. W. GOETHALS,  
Governor.

**Reduced Rates on United Fruit Company Ships to Continue.**

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., April 27, 1916.  
To all concerned—Please note that circular issued "To all concerned" under date of April 24, advising of the withdrawal by the United Fruit Company of special steamship fares granted to Panama Canal employees, and their families, and officers and enlisted men of the United States Army and Navy stationed on the isthmus of Panama, and their families, is hereby cancelled.

The special fares now granted by the United Fruit Company will remain in effect until further notice.

W. P. COPELAND,  
Acting Executive Secretary.

**Passage on the "Ancon."**

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., April 29, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:  
The steamer *Ancon* will sail from Cristobal on or about May 9. Applications for this sailing may be submitted, but preference in assignment will be given to employees who have been discharged on account of reduction of force, and to their families.

W. P. COPELAND,  
Acting Executive Secretary.

**To Accountable Officials.**

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 1, 1916.

To accountable officials—It is requested that special effort be made to accomplish all invoices covering material and property transferred from Mr. H. D. Hinman, Pacific terminals, Balboa. Also that invoices be prepared to cover any material or property shipped to that official but not invoiced. It is desired to check out this accountability at an early date.

H. A. SMITH,  
Auditor, The Panama Canal.

**Cripples Who Were Injured in the Service.**

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 1, 1916.  
HEADS OF DEPARTMENTS AND DIVISIONS:  
Please furnish this office, at the earliest practicable date, a list of all cripples, on the silver roll, in your department or division, who sustained injuries in the service of the Isthmian Canal Commission, The Panama Canal, or the Panama Railroad Company.

W. P. COPELAND,  
Acting Executive Secretary.

**Abolishing Pacific Terminals Subdivision.**

THE PANAMA CANAL,  
DEPT. OF OPERATION AND MAINTENANCE,  
BALBOA HEIGHTS, C. Z., April 24, 1916.  
To all concerned—Owing to the practical completion of construction work, effective at the close of this month, the Pacific Terminals subdivision of the Division of Terminal Construction will be abolished. Any items of construction work remaining uncompleted on April 30 will be transferred to other divisions, and the necessary work requests will be issued therefor.

The inspection of uncompleted contract work at

Balboa will be transferred to this office effective May 1.

H. H. ROUSSEAU,  
Engineer of Terminal Construction.  
Approved:  
GEO. W. GOETHALS,  
Governor.

### JOINT LAND COMMISSION.

#### Awards.

In the matter of the claim of Bonifacio Segura, for property located in the valley of the Chagres River, rule of dismissal No. 243, confirming the Commission's award No. 102 of November 10, 1915, dockets Nos. 936 and 1746, April 20, 1916—The claim of Bonifacio Segura, dockets Nos. 936 and 1746, came on for hearing on November 9, 1915, and on November 16, 1915, the Commission handed down its decision in the case, awarding to the claimant herein the sum of \$1,000 United States currency, with the proviso that unless payment or tender of payment of said award were made to the claimant on or before December 16, 1915, said award would thereafter bear interest at the rate of six per cent per annum until paid.

Subsequently, on November 19, 1915, counsel for the United States filed a motion setting up that "said award is excessive and inequitable to the United States," and asked that it be set aside and the case reconsidered.

Shortly after the motion was filed, Commissioner L. M. Kugy resigned and severed his connection with the Commission, and, pending the appointment and arrival of his successor, Commissioner C. L. Bouve, no action could be taken in the matter. The motion was finally set down for argument on April 20, 1916, which was had.

After due consideration, the Commission is of the opinion that the motion of counsel for the United States should be, and same is hereby, denied, and the Commission hereby confirms its award No. 102, with interest from the date therein specified.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO, CLEMENT L. BOUVE, Commissioners.

In the matter of the claim of Francisco Castillo, for property located near Bohio, award No. 105, docket No. 1024, April 24, 1916—An award is hereby made against the United States in favor of the person hereinafter named, in the sum of \$150 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 24th day of May, 1916, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per cent per annum until paid.

Francisco Castillo, docket No. 1024—For all right, title, and interest which the said Francisco Castillo may possess or may have possessed in and to houses, crops, fruit trees, and any other improvements at Bohio, the sum of \$150 United States currency.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, Commissioners.

#### Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 241, docket numbers as noted, April 20, 1916—At a public session of the Joint Commission held on Thursday afternoon, April 20, 1916, Stevens Ganson, Esq., of Hinkley, Ganson, and Teran, attorneys for the claimants in the cases hereinbelow set out, which cases appear on the docket set for Monday, May 1, moved that said claims be dismissed on account of settlement therein having been effected with the United States:

Docket No. 1249..... Fernando Garay  
1252..... Julio Torres  
1253..... Marcelino Melendez

In view of this motion of attorneys for the claimants, the claims above noted are accordingly hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO, CLEMENT L. BOUVE, Commissioners.

In the matter of the claim of Theodore J. de Saba, for property designated as Hacienda Bernardino, rule of dismissal No. 242, docket No. 1245, April 20, 1916—At a public session of the Joint Commission held on Thursday afternoon, April 20, 1916, Stevens Ganson, Esq., of Hinkley, Ganson, and Teran, attorneys for claimant Theodore J. de Saba, docket No. 1245, moved that said claim be dismissed on account of the fact that the claim was filed in error, the property covered thereby being outside the Canal Zone.

In view of this motion of attorney for the claimant, the claim of Theodore J. de Saba, docket No. 1245, is hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, R. J. ALFARO, Commissioners.

In the matter of sundry claims, rule of dismissal No. 244, docket numbers as noted, April 22, 1916—With

reference to the following claims, the evidence before the Commission is that settlement thereof has been made by the United States:

Docket No.	Claimant.	Tax.	Date of Payment.
1259	Robert Simpson.....	12	—15
1293	Augustus Williams.....	1	—16
1353	Victorino Batista.....	1	—16
1348	John A. Baxter.....	1	—15
1405	Eliseo Semanca (Simancas).....	6	—15
1693	Eleuterio Brown (Born).....	8	—14
1694	Santiago Sang.....	1	—16
1766	Santiago Sang.....	1	—16
1767	Santiago Sang.....	1	—16
1182	Trinidad de Gracia.....	2	—16
2653	James Aldridge.....	12	—15
2654	James Aldridge.....	12	—15
2695	Mrs. William (Ellen) Lawrence.....	487	1—16
2708	Hannah Herbert.....	269	2—16
2712	Fred Clue.....	362	1—16
2717	Frederick Hill.....	262	1—16
2737	Robert Harris.....	335	1—16
2783	James Henry.....	1	—16
2787	John Roberts.....	12	—15
2917	Victorino Batista.....	1	—16
2919	Elaudia Mudarra (Mudurra).....	313	2—16
2936	Marcelino Anaya.....	12	—15
2990	Patrick Robinson.....	12	—15
2990	Stephen Dais.....	548	1—16
3008	Nicasio Bedes.....	1	—16
3040	Augustus Geo. Evans.....	487	3—16
3053	William Young.....	2	—16
3071	Edward Clark.....	1	—16
3084	John Skeete.....	829	1—16
3101	Sebastian Galastica (A).....	6	—5
3228	Eleuterio Brown (Born).....	8	—14
3229	Eleuterio Brown.....	1	—16
3293	Simons Johnson.....	1	—16
3299	William Barnett.....	2	—16
3300	Hugh Hall.....	2	—16
3301	Hugh Hall.....	344	1—16
3301	Austin D. Brathwaite.....	415	2—16
3302	Archibald Earle.....	414	2—16
3305	Simoon Hall.....	1	—16
3346	Henry Belmont.....	1	—16
3314	David Brown.....	1	—16
3423	Crescencio Moran.....	1	—16
3485	John Bingham (Bingham).....	2	—16
3550	Ceciliano B. Perez and Julio Poylo.....	1	—16
3551	Rafaela y Gertrudis Plazarte.....	3	—16
3553	Ernestina Gallol.....	2	—16
3554	Leona Delgado.....	2	—16

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO, CLEMENT L. BOUVE, Commissioners.

In the matter of sundry claims, rule of dismissal No. 245, docket numbers as noted, April 29, 1916—With reference to the following claims, the evidence before the Commission is that settlement thereof has been made by the United States:

Docket No.	Claimant.	Tax.	Date of Payment.
1399	Alfred Horton.....	10	—16
1475	Ramos Ortega.....	7	—14
1494	Ponciano Fonseca.....	6	—14
1558	Manuel de Jesus Ortega.....	57	3—13
1571	James Harris (J. N. Harris).....	92	10—13
1523	(Jose) Felix Komero.....	610	1—15
1773	Jose Brigido Gordon.....	1	—25
1774	Jose Brigido Gordon.....	1	—25
1775	Cecilio Ballester (Valiente).....	1	—25
1807	Jose Dolores Gomez.....	86	10—13
1882	John McFerson.....	2	—16
1993	Rufino Bocanegra (o).....	4	—4
2301	Juan Aleman.....	272	5—14
2351	Juan Charles (Juan Carlos).....	911	10—14
2375	Manuel Quintero.....	2	—16
2606	Brigido Aldeano (Aldiano).....	4	—13
2610	Julio Boudreau.....	92	10—13
2627	Froilan Quintero.....	917	9—13
2672	Francis (Frances) E. Nelson.....	541	12—15
2674	Ellen (Helen) Montague.....	476	3—16
2713	Samuel Aschmann.....	314	3—16
2709	Bernarda G. de Salazar.....	314	3—16
2803	David Lilly.....	12	—15
2911	Sarah Jacobs.....	3	—16
2911	Willford Brown.....	477	2—16
2931	Francisco Ciera (Sierra).....	2	—16
3126	Mrs. Frances (Frances R.) Nelson.....	541	12—15
3128	Dorothea Benoit (Dorothea).....	4	—16
3129	Joaquin Sallamaria.....	616	617
3185	Luis de Hoyos.....	3	—16
3287	Chas. P. Harvey.....	420	3—16
3407	James Barnett.....	7	—13
3423	Felton Montague.....	476	3—16
3411	Pio Fiott.....	10	—15
3449	Robert (Robert) Joseph.....	847	2—15
3458	Cyril (Sirilo) Herrero.....	1	—13
3461	Martin Nolo.....	1880	a
3469	Manres Barriente (Marco Barriente).....	1	—14
3471	Juana Barrios (Juanita).....	2071	1—14
3475	Raimundo Guzman.....	1	—14
3502	Francisco Gonzalez.....	2061	5—16
3505	Ricardo Sivaréz (Sivera).....	2	—16
3567	W. E. Weicle.....	541	2—16
3573	Acosta Crox (McDonald Costa).....	991	3—16
3591	William Graham.....	1	—15

In view of the above settlements, no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, Commissioners.

### COMMISSARY DEPARTMENT.

#### Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective April 22:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Baskets, fruit, ea.....	\$0.47	\$0.50
Bells, call, ea.....	.17	.21
Bowls, sauce, ea.....	1.80	1.95
Bowls, sugar, ea.....	2.60	2.75
Bowls, ea.....	1.50	.51
Bowls, sugar, ea.....	2.75	3.05
Buckets, ea.....	.25	.29
Clocks, ea.....	1.30	1.50
Decanters, ea.....	.17	.20
Cups, ea.....	.11	.08
Cups, ea.....	.70	.85
Cups and saucers, set.....	1.60	1.75
Cups and saucers, set.....	1.50	.35
Cups and saucers, set.....	1.65	1.75
Cups and saucers, set.....	1.85	2.00
Cups and saucers, set.....	1.80	1.95
Decanters, ea.....	2.90	4.65
Dishes, ea.....	.40	.45
Dishes, ea.....	1.05	1.15
Dishes, ea.....	1.45	1.50
Dishes, ea.....	.18	.15
Dishes, ea.....	2.80	3.00
Dishes, ea.....	3.10	3.45
Dishes, ea.....	5.20	5.60
Dishes, ea.....	3.10	3.15
Dishes, ea.....	3.15	3.75
Dishes, ea.....	.11	.14
Dishes, ea.....	.12	.15
Dishes, ea.....	.20	.15
Glasses, ea.....	.70	.85
Glasses, ea.....	.66	.80
Glasses, ea.....	.70	.85
Glasses, water, ea.....	.09	.08
Glasses, ea.....	.48	.60
Jugs, ea.....	1.10	1.25
Jugs, ea.....	.62	.82
Jugs, cream, ea.....	1.70	1.80
Jugs, cream, ea.....	1.45	1.60
Jugs, ea.....	.23	.28
Knives, ea.....	.72	.77
Knives, ea.....	.11	.14
Knives, ea.....	.67	.73
Matting, yd.....	.19	.26
Opener, can, ea.....	.06	.07
Pans, muffin, ea.....	.36	.33
Pans, dust, ea.....	.13	.16
Plates, ea.....	1.55	1.75
Plates, ea.....	1.60	1.80
Plates, ea.....	1.85	2.00
Plates, ea.....	1.85	2.00
Plates, ea.....	1.15	1.20
Plates, ea.....	.35	.40
Plates, ea.....	.13	.10
Plates, ea.....	.97	1.00
Plates, ea.....	.31	.35
Plates, ea.....	1.05	1.20
Plates, ea.....	1.12	1.25
Plates, ea.....	1.40	1.55
Plates, ea.....	1.85	2.00
Plates, ea.....	.12	.14
Plates, ea.....	.10	.12
Plates, ea.....	1.24	1.40
Plates, ea.....	1.55	1.65
Plates, ea.....	1.05	1.20
Plates, ea.....	1.95	2.10
Plates, ea.....	1.82	1.99
Platters, ea.....	2.20	2.35
Platters, ea.....	3.15	3.30
Platters, ea.....	6.70	7.25
Platters, ea.....	5.85	6.30
Platters, ea.....	5.65	6.25
Platters, ea.....	8.15	9.00
Platters, ea.....	1.10	1.20
Platters, ea.....	1.15	1.20
Platters, ea.....	1.65	1.80
Platters, ea.....	2.50	2.75
Platters, ea.....	3.50	4.00
Platters, ea.....	2.75	3.05
Platters, ea.....	3.85	4.10
Platters, ea.....	5.85	6.25
Pots, coffee, ea.....	.53	.63
Pots, coffee, ea.....	.82	.99
Pots, tea, ea.....	4.25	4.50
Pots, flower, ea.....	.03	.04
Pots, azuleja, ea.....	.07	.05
Pots, azuleja, ea.....	.18	.20
Pots, tea, ea.....	1.55	1.70
Razors, ea.....	2.00	2.50
Screwdrivers, ea.....	.16	.20
Spoons, jam, ea.....	.25	.39
Spoons, ea.....	.05	.06
Spoons, ea.....	.14	.16
Tacks, pkg.....	.03	.04
Tacks, ea.....	.14	.16
Trunks, ea.....	7.70	8.25
Serge, yd.....	2.25	2.40
Hose, men's, doz.....	1.25	.37
Belts, ea.....	.41	.55
Belts, ea.....	.39	.43
Belts, ea.....	.44	.43
Belts, ea.....	.61	.74
Belts, ea.....	.85	.75

\*Reduced to close out, will not be stocked again.

#### Additions to Stock.

Cigars, Cremas Jamaica, ea..... \$0.09  
Tobacco, Dill's Best, 14-oz, tin..... .18



## OIL STOVES.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., April 22, 1916.

## BULLETIN NO. 606:

To commissary managers—You are advised by bulletin no. 606 that efforts were being made to obtain a cut of the New Perfection oil stove No. 7. This stove is now carried as No. 37.

There is being forwarded to you under separate cover a booklet issued by the Standard Oil Company describing this stove in detail.

Please arrange to display this cut with your bulletin as directed in the original circular.

BENJ. L. JACOBSON,  
Depot Commissary.

## Ice Cream Schedule.

## No. 1.

MAY 3 TO JUNE 4, 1916 (INCLUSIVE).

Wednesday, May 3	Pineapple.
Thursday, May 4	Caramel.
Friday, May 5	Strawberry.
Saturday, May 6	Peach.
Sunday, May 7	Chocolate.
Monday, May 8	Coffee.
Tuesday, May 9	Peach.
Wednesday, May 10	Chocolate.
Thursday, May 11	Strawberry.
Friday, May 12	Bisque.
Saturday, May 13	Pineapple.
Sunday, May 14	Caramel.
Monday, May 15	Bisque.
Tuesday, May 16	Strawberry.
Wednesday, May 17	Chocolate.
Thursday, May 18	Pineapple.
Friday, May 19	Coffee.
Saturday, May 20	Banana.
Sunday, May 21	Peach.
Monday, May 22	Chocolate.
Tuesday, May 23	Pineapple.
Wednesday, May 24	Coffee.
Thursday, May 25	Caramel.
Friday, May 26	Peach.
Saturday, May 27	Bisque.
Sunday, May 28	Strawberry.
Monday, May 29	Caramel.
Tuesday, May 30	Peach.
Wednesday, May 31	Bisque.
Thursday, June 1	Strawberry.
Friday, June 2	Coffee.
Saturday, June 3	Chocolate.
Sunday, June 4	Pineapple.

## No. 2.

MAY 3 TO JUNE 4, 1916 (INCLUSIVE).

Wednesday, May 3	Orange.
Thursday, May 4	Strawberry.
Friday, May 5	Chocolate.
Saturday, May 6	Pineapple.
Sunday, May 7	Chocolate.
Monday, May 8	Strawberry.
Tuesday, May 9	Orange.
Wednesday, May 10	Chocolate.
Thursday, May 11	Coffee.
Friday, May 12	Bisque.
Saturday, May 13	Chocolate.
Sunday, May 14	Pineapple.
Monday, May 15	Orange.
Tuesday, May 16	Chocolate.
Wednesday, May 17	Bisque.
Thursday, May 18	Pineapple.
Friday, May 19	Coffee.
Saturday, May 20	Strawberry.
Sunday, May 21	Bisque.
Monday, May 22	Chocolate.
Tuesday, May 23	Pineapple.
Wednesday, May 24	Coffee.
Thursday, May 25	Bisque.
Friday, May 26	Strawberry.
Saturday, May 27	Chocolate.
Sunday, May 28	Orange.
Monday, May 29	Bisque.
Tuesday, May 30	Chocolate.
Wednesday, May 31	Orange.
Thursday, June 1	Pineapple.
Friday, June 2	Chocolate.
Saturday, June 3	Coffee.
Sunday, June 4	Strawberry.

In addition to the above schedule, vanilla ice cream may be ordered daily.

BENJ. L. JACOBSON,  
Depot Commissary.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culabra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.50 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

The Pedro Miguel store is open from 8 a. m. to 12.30 p. m., and from 3 to 6 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store are open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## SHIPPING INFORMATION.

## Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions for the next five weeks are given in this table:

## MAY.

DATE.	Time and height of high and low water.			
Wed., May 3	4:26 14.6	10:33 1.0	16:34 15.2	22:53 0.2
Thurs., May 4	5:05 14.4	11:10 1.3	17:12 14.8	23:28 0.6
Fri., May 5	5:42 14.0	11:46 1.9	17:49 14.3	.....
Sat., May 6	0:05 1.2	6:19 13.6	12:24 2.6	18:27 13.7
Sun., May 7	0:43 2.0	6:57 13.0	13:04 3.4	19:05 13.0
Mon., May 8	1:26 2.8	7:37 12.4	13:51 4.2	19:46 12.2
Tues., May 9	2:14 3.6	8:22 11.9	14:48 4.8	20:34 11.6
Wed., May 10	3:10 4.2	9:16 11.5	15:51 5.0	21:34 11.1
Thurs., May 11	4:11 4.4	10:22 11.5	17:07 4.9	22:49 11.1
Fri., May 12	5:12 4.4	11:20 11.9	18:09 4.2	23:59 11.5
Sat., May 13	6:12 4.0	12:27 12.7	18:54 3.3	.....
Sun., May 14	0:55 12.3	7:07 3.3	13:15 13.6	19:45 2.2
Mon., May 15	1:44 13.2	7:59 2.4	13:59 14.6	20:33 1.0
Tues., May 16	2:29 14.2	8:46 1.5	14:43 15.3	21:17 0.0
Wed., May 17	3:15 15.0	9:31 0.6	15:27 16.2	22:00 -0.8
Thurs., May 18	4:01 15.6	10:16 0.1	16:14 16.5	22:44 -1.3
Fri., May 19	4:49 15.9	11:01 -0.1	17:02 16.6	23:28 -1.3
Sat., May 20	5:39 16.0	11:46 0.0	17:52 16.3	.....
Sun., May 21	0:15 -0.9	6:30 15.8	12:36 12.6	18:44 15.7
Mon., May 22	1:05 -0.3	7:21 15.4	13:30 1.3	19:37 14.9
Tues., May 23	2:00 0.6	8:16 14.8	14:31 2.0	20:35 13.9
Wed., May 24	3:00 1.5	9:15 14.2	15:38 2.6	21:40 13.1
Thurs., May 25	4:04 2.2	10:21 13.8	16:45 2.8	22:54 12.6
Fri., May 26	5:08 2.7	11:28 13.7	17:49 2.8	.....
Sat., May 27	0:07 12.5	6:11 2.9	12:32 13.7	18:50 2.5
Sun., May 28	1:10 12.8	7:10 2.9	13:25 14.0	19:45 2.0
Mon., May 29	2:01 13.1	8:03 2.6	14:12 14.2	20:33 1.5
Thurs., May 30	2:46 13.5	8:51 2.3	14:54 14.4	21:16 1.1
Wed., May 31	3:27 13.7	9:33 2.0	15:33 14.4	21:56 0.9

## JUNE.

DATE.	Time and height of high and low water.			
Thurs., June 1	4:07 13.8	10:13 1.9	16:12 14.9	22:33 0.8
Fri., June 2	4:46 13.8	10:50 1.9	16:50 14.3	23:09 0.9
Sat., June 3	5:24 13.8	11:27 2.2	17:28 14.1	23:46 1.2
Sun., June 4	6:01 13.6	12:04 2.6	18:05 13.7	.....
Mon., June 5	0:22 1.6	6:33 15.3	12:43 3.0	18:42 13.3

## DATE.

Time and height of high and low water.

Tues., June 6	1:00 2.2	7:15 13.1	13:24 3.5	19:21 12.8
Wed., June 7	1:40 2.8	7:52 12.8	14:12 4.0	20:00 12.0

The times are placed in the order of occurrence, with their dates on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3.47 p. m.

## Sailings of vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Stails.	Arrives.
Zacapa	U. F. C.	April 26	May 3
Allianca	P. R. R.	April 27	May 4
Calamares	U. F. C.	April 29	May 7
Corriolo	U. F. C.	May 3	May 10
Cristobal	P. R. R.	May 4	May 11
Tenadores	U. F. C.	May 6	May 14

## CRISTOBAL-COLON TO NEW YORK.

Panama	P. R. R.	May 4	May 10
Almirante	U. F. C.	May 4	May 11
Pastores	U. F. C.	May 8	May 15
Allianca	P. R. R.	May 11	May 17
Zacapa	U. F. C.	May 11	May 18
Calamares	U. F. C.	May 15	May 22
Cristobal	P. R. R.	May 18	May 24

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba	U. F. C.	April 29	May 6
Parimino	U. F. C.	May 2	May 8
Atenas	U. F. C.	May 6	May 13
Carlago	U. F. C.	May 10	May 15

## CRISTOBAL-COLON TO NEW ORLEANS.

Heredia	U. F. C.	May 7	May 12
Turrialba	U. F. C.	May 7	May 15
Parimino	U. F. C.	May 14	May 19
Atenas	U. F. C.	May 14	May 22

## Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, April 29, 1916.

DAY AND DATE.		STATIONS.				
	Vigia	Alhajuela	Gatun	Gatun Lake	Miraflores Lake	
Sun., April 23	125.10	91.32	86.04	86.01	54.14	14
Mon., April 24	125.55	91.31	86.05	86.00	54.15	14
Tues., April 25	126.60	92.11	86.08	86.01	54.15	14
Wed., April 26	126.55	92.03	86.06	86.02	54.15	14
Thurs., April 27	125.60	91.86	09.60	04.54	34.14	14
Fri., April 28	125.50	91.77	86.04	86.03	54.09	14
Sat., April 29	126.55	93.15	86.07	86.03	54.20	14

Heights of low water to nearest foot.

125.0 91.0

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., May 2, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be procured upon request of the addressees. Requests may be made by telephone, calling No. 182, Balboa:

Alexander, Mrs.	Martin, Harry F.
*Blake, Dr. L. C.	Miller, Henry
*Brent, Mrs. S. E.	O'Brien, John J.
Clardia, Mrs. Basset	Paulsen, Henry
Coster, Miss Una	Praino, Leonardo
Frazier, James	Rockwell, Jas. V.
Fulton, J. M.	Scott, James
Hannon, F. S.	Skinner, A. H.
*Harris, Lewis H.	Uphser, Dr. A. P.
Heberling, Charles	Weitz, H. C.
Herse, Henry	Whittingham, Wilfred
*Hurley, J. J.	Wenner, Thomas F.
Lindsay, C. M.	Woodward, W.
McAleenan Bros.	
*Payer	



## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., April 30, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
April 24...	Ormiston	British	Orm Steamship Company, Ltd.	Cardiff	Santa Rosalia	Coke	4,850	5,663	4,102
April 24...	Centra	Chilean	United States Steel Products Co.	New York	Couquimb	General	7,229	5,597	4,253
April 25...	Limar	British	South American S. S. Co.	Cristobal	Valparaiso	General	1,507	3,631	2,421
April 26...	Guatemala	British	Pacific Steam Nav. Co.	Cristobal	Guayaquil	General	1,807	4,249	2,772
April 27...	Urubamba	Peruvian	Peruvian Steamship Line	Cristobal	Callao	General	1,369	4,937	3,118
April 28...	Lord Derby	British	Occidental & Oriental S. N. Co.	Baltimore	Guayaquil	Coal	5,900	4,439	3,588
April 29...	Siraga	American	New York & Oriental S. S. Co.	New York	Adelaide	General	9,000	5,133	3,812
April 29...	Ranella	British	Anglo-Saxon Petroleum Co.	Port Arthur	Nagasaki	Oil	6,854	5,955	4,258
April 29...	Burlington	American	Alaska Steamship Company	Norfolk	Caldera	Coal and coke	2,128	2,409	1,806
April 29...	Harewood	British	Century Shipping Company	Kingston	Balboa	Coal	5,580	4,653	3,470
April 30...	Orari	British	Norton Lilly & Company	New York	Auckland	General	11,000	9,827	6,395

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

April 23...	Cushing	American	Standard Oil Company	Callao	New York	Crude naphtha	7,500	6,978	4,869
April 24...	Spihead	British	Clyde Shipping Company	Mejillones	Colon (orders)	Nitrates	6,920	5,769	3,691
April 24...	Celia	British	New York & Pacific S. S. Co.	Valparaiso	New York	Nitrates, wool	7,671	5,853	4,377
April 25...	Strathfillan	British	Strathfillan S. S. Co.	Calita Coloso	Colon	Nitrates of soda	6,702	4,639	3,382
April 25...	Terriv	Norwegian	Peruvian Steamship Line	Callao	New York	Nitrates	5,203	5,455	4,042
April 26...	Martaro	British	West Hartlepool Steam Nav. Co.	Callao	Cristobal	Sugar, wool, hides	2,123	4,631	2,673
April 26...	Clumberhall	British	Northern Steamship Co.	Iquique	Colon (orders)	Nitrates	5,800	3,989	2,911
April 26...	British Empire	British	Northern Steamship Co.	San Francisco	London	Salmon	457	579	250
April 27...	Sahara	British	Glasgow Navigation Co.	Taltal	New York	Nitrates	6,000	4,357	3,330
April 27...	Tennessee	American	United States Navy	Callao	New York	Nitrates	1,500*	00,000	
April 27...	Manavi	British	Pacific Steam Navigation Co.	Guayaquil	New York	Hides, coffee, cocoa	603	1,205	745
April 27...	S. O. Barge No. 93	American	Standard Oil Company	San Francisco	Colon	Fuel oil	3,714	2,653	2,195
April 28...	Chuscha	American	New York and Pacific S. S. Co.	Tocopilla	New York	Nitrates	8,891	6,429	4,624

\* Displacement.

## ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

April 29...	Towa Maru	Gomei Kaisha Towa Koshi	Port Arthur	May 3...	Notica	Anglo-Saxon Pet. Co.	
May 1...	Ferrara	British & Chilean S. S. Co.	New York	May 4...	Hagensack		
May 1...	Gosan Maru	Hashimoto K. K. Kaisha	New York	May 5...	Florentina	Polzeath Steamship Co.	
May 1...	Wakadane	Norton Lilly & Co.	New York	May 6...	Skpton Castle	New York	
May 2...	Wakasa Maru	Nippon Yusen Kaisha	New York	May 6...	Pacific	New York	
May 1...	Cassisi	Anglo-Saxon Pet. Co.	New York	May 6...	Westmeath	Norton Lilly & Co.	New York
May 1...	Strathesk	Strathesk Steamship Co.	St. Vincent				

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
April 26...	Haiti	French Line	Bordeaux	April 25...	Sylvanian	Leyland Line	Galveston.
April 28...	Kilpatrick	U. S. Army	New York	April 26...	Siena	La Veloce Line	Genoa, Port Limon.
April 30...	Neptune	U. S. Navy	Norfolk	April 27...	Selandia	East Asiatic Co.	Kirkwall.
				April 30...	Haiti	French Line	Bordeaux.

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

				May 3...	Kilpatrick	U. S. Army	New York.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

ARRIVALS.				DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
April 25...	Clapet No. 2	National Navigation Co.	Panama.	April 25...	Clapet No. 2	National Navigation Co.	Panama.
April 26...	San Francisco	Columbian Maritime Co.	San Francisco.	April 27...	Alcira	Amazona Transport Co.	Taboga.
April 27...	J. A. Moffatt	Standard Oil Company	San Francisco.	April 28...	Wisdam (yacht)	Dr. E. A. Salisbury	Taboga.
April 27...	Wisdom (yacht)	Dr. E. A. Salisbury	Panama.	April 28...	Urubamba	Peruvian Steamship Line	Panama.
April 28...	Kiyo Maru	Toyo Kisen Kaisha	Colonel	April 29...	Jamaica	Pacific Steam Nav. Co.	Tunaco.
April 29...	Baja California	A. O. Lindvig	Antofagasta.	April 29...	Kiyo Maru	Toyo Kisen Kaisha	Moja.
				April 29...	Baja California	Baja California S. S. Co.	San Francisco.
				April 30...	Balboa	Columbian Maritime Co.	Buenaventura.

## EXPECTED ARRIVALS.

## EXPECTED DEPARTURES.

April 30...	Alaskan	American-Hawaiian Line	Tocopilla.	May 1...	J. A. Moffatt	Standard Oil Company	San Francisco.
May 1...	San Francisco	Johnson Line	Moja.				
May 1...	Ikoma Maru	J. Nakamura	Tocopilla.				
May 2...	Bradford	Standard Oil Company	Tocopilla.				
May 3...	Huasco	South American S. S. Co.	Chile.				
May 5...	Peru	Pacific Steam Nav. Co.	Valparaiso.				
May 5...	Hagensack	Brown, Jenkins & Co.	South Pacific ports				
May 7...	River Forth	River Forth Steamship Co.	South Pacific ports				

† Indicates vessel for passage through the Canal.



## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

For delivery in other countries, to which the paper must be forwarded under foreign postal rates, a charge of 50 cents is added for postage, making the subscription \$1.50 per year.

Yearly subscriptions are entered as beginning at the first of the quarter of the year in which received, and expire at the beginning of the corresponding quarter of the following year. When subscriptions are received after the beginning of a quarter the back numbers which have been issued during that quarter will be forwarded when available.

The paper is furnished free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

Bound volumes of The Canal Record, 1 to VIII, inclusive, are for sale at \$2.50 each.

Remittances for subscriptions or for bound volumes may be forwarded to The Panama Canal, Washington, D. C., U. S. A., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,

Isthmus of Panama.

### NOTES OF PROGRESS.

#### West Coast Embargo Lifted.

Effective May 9, the Panama Railroad Company has lifted the embargo on goods consigned to ports south of Callao, which has been in effect since March 20. The conditions leading to the declaration of the embargo were explained in THE CANAL RECORD of March 22 and March 29. The substance of them was that disrupted services had led to an accumulation on the Isthmus of goods destined to Chile, and the embargo was laid in order to give opportunity for the Pacific carriers serving the Chilean ports to clear away the accumulation of cargo, some of which had been delayed several months. This has been accomplished and the embargo is accordingly removed. The company has now no embargo on shipments to any ports.

#### New Ice Plant Beginning Operations.

It is expected that the making of ice in the new ice plant at Balboa will be begun in the night of Wednesday, May 10, or during the following day. The plant will not be counted on for regular service for two weeks, however, as the Building Division will operate it independently for such a period to see that it is in satisfactory order before it is turned over to the Supply Department for operation.

The new plant will be of immediate value in meeting the needs of ice on the Isthmus, which have frequently been in excess of the capacity of the plant at Cristobal since the opening of the Canal. The necessity of forcing the output of the Cristobal plant has re-

sulted lately in a considerable output of "snow ice", opaque white ice due primarily to the accidental entrance of slight quantities of calcium chloride, from the brine in which the cans are immersed. The use of snow ice in drinking water causes an unpleasant taste, and the Supply Department suggests to its patrons that they instruct their servants to use only clear ice, when any is available, for cooling water, or else chill the water without allowing the ice to come into contact with it.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, May 8, amounted to 264,130 cubic yards. In addition, 6,521 cubic yards of spoil were removed from the Cut in miscellaneous maintenance work, and 42,010 cubic yards were rehandled.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	65,860
Gambou.....	15-yard dipper.....	70,010
Paraiso.....	15-yard dipper.....	67,725
Corozal.....	Ladder.....	41,100
No. 83.....	Pipeline suction.....	950
Culebra.....	Seagoing suction.....	11,844
No. 86.....	Pipeline suction.....	41,490
No. 5.....	Belgian ladder.....	5,915

The aggregate of primary excavation from the bases of Culebra slides since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the close of work on May 8, 1916, has amounted to 13,455,303 cubic yards. This has been an average of 716,048 cubic yards per month.

In the current fiscal year, beginning with July 1, the total primary excavation from the Cut has amounted to 9,316,085 cubic yards up to midnight of May 8.

#### West Coast Connections from the Isthmus.

The New York office of the Panama Railroad Steamship Line has issued under date of April 19, the following notice concerning the routing of cargo to west coast ports:

Shippers of cargo to ports on the west coast of Mexico, Central and South America have heretofore refrained from indicating on bills of lading the name of the carrier beyond Panama, assuming that such cargo, because of not being definitely "routed," would be delivered to the first connecting steamer sailing from Panama, and thus insure the earliest possible arrival at destination.

This result is being nullified because, due to the present heavy movement of traffic, preference is extended by the Pacific carriers to cargo "routed" by their respective lines, and unrouted cargo is accepted only when they have room for it.

Below is shown a list of regular ports of call on the west coast served by the various steamship lines, according to latest advices, and shippers are urged to designate hereafter on their bills of lading, the name of the carrier

on the Pacific Ocean, to prevent delay on the Isthmus and thus insure early delivery of their freight to consignees.

#### PORTS OF CALL NORTH OF PANAMA.

*Pacific Mail Steamship Company* and *California South Sea Navigation Company*—Acajutla, Amapala, Champerico, Corinto, La Libertad, La Union, Manzanillo, Huastlan, Puntarenas, Salina Cruz, San Blas, San Juan del Sur, San Jose de Guatemala.

*Pacific Steam Navigation Company*—Acajutla, Amapala, Champerico, Corinto, La Libertad, La Union, Ocos, Puntarenas, Salina Cruz, San Jose de Guatemala.

#### PORTS OF CALL SOUTH OF PANAMA.

*Peruvian Steamship Company*—Callao, Casma, Cerro Azul, Chala, Chimbote, Eten, Guayaquil, Huacho, Huanchaco, Huarmey, Ilo, Lomas, Mollendo, Pacasmayo, Payta, Pimentel, Pisco, Salaverry, Samanco, Santa, Supe, Tambo de Mora.

*South American Steamship Company*—Antofagasta, Ancud, Arica, Caldera, Caleta Buena, Callao, Casma, Cerro Azul, Chala, Chanaral, Chimbote, Coquimbo, Corral, Eten, Gatico, Huacho, Huanchaco, Huarmey, Huasco, Ilo, Iquique, Lebu, Lomas, Los Vilos, Lota, Mejillones, Mollendo, Pacasmayo, Payta, Penco, Pisagua, Pisco, Puerto Montt, Salaverry, Samanco, Supe, Talcahuano, Taltal, Tambo de Mora, Tocopilla, Tome, Valparaiso.

*Pacific Steam Navigation Company*—Antofagasta, Arica, Bahia de Caraquez, Ballenita, Buenaventura, Caldera, Callao, Casma, Cayo, Cerro Azul, Chala, Chanaral, Chimbote, Coquimbo, Coronel, Esmeraldas, Eten, Gatico, Guayaquil, Huacho, Huanchaco, Huasco, Ilo, Iquique, Lomas, Los Vilos, Lota, Machalilla, Manglar Alto, Manta, Mejillones, Mollendo, Pacasmayo, Payta, Pisagua, Pisco, Puerto Bolivar, Puntarenas, Salaverry, Samanco, Supe, Taltal, Tambo de Mora, Tocopilla, Tuuaco, Valparaiso.

#### New Tanker Expected with Large Cargo for Sale at Balboa.

The new oil tank steamship *Los Angeles*, added to the fleet of the Union Oil Company of California in March, is expected to arrive at Balboa in the afternoon of May 10, carrying 62,000 barrels of crude oil and 9,000 barrels of Diesel oil for delivery to the storage tanks of the company at the Pacific terminus of the Canal.

The *Los Angeles* is a sister ship of the *La Brea*, which was described in THE CANAL RECORD of December 29, 1915, and went into service about a month before the *Los Angeles*. Both ships were built at San Francisco. They are the largest vessels owned by the Union Oil Company.

#### The "Charleston" Assigned to Canal Waters.

The cruiser *Charleston* of the United States Navy arrived at Balboa on May 5, from Bremerton, Wash., via San Francisco on

her way to Cristobal to be attached to the submarine flotilla as tender, replacing the *Severn*, which is without motive power. The *Charleston* is a protected cruiser of the first class, which went into commission in 1905. She is a sister of the *Milwaukee* and the *St. Louis*, having a length of 424 feet, beam of 66 feet, and mean draft of 22 feet six inches, with displacement of 9,700 tons. On her trial trip the *Charleston* made a speed of 22.94 knots.

As a tender the *Charleston* will have advantage of mobility and size. The *Severn* is only 175 feet long by 37 feet beam, with a mean draft of 16½ feet, and is badly crowded when in use as a tender, away from port, for the five submarines of the flotilla. The *Severn* has accommodations for 60 men, while the complement of the *Charleston* when fully manned for cruiser service is 29 officers and 698 men.

#### No Shipments to Central Powers.

The Red Cross has sent out an announcement from Washington to the effect that the blockade of the Allied Powers against the Central Powers of Europe has been so strict that for months past the Red Cross has been unable to secure permits for the shipment of supplies to the blockaded nations, and that in consequence there is a congestion of goods, designated for the Central Powers, in the terminal warehouse of the Red Cross in Brooklyn. In view of this situation and the lack of further storage room in the warehouse, the Red Cross has found it necessary to request its chapters and other relief organizations not to send any more such supplies to the warehouse for shipment until further notice.

The organization, however, is anxious to have its chapters supervise the collection of supplies for use in its work of making adequate preparation for assisting the Army and Navy medical corps, in accordance with the orders of Congress and the President. Such goods are to be stored in the locality where they are prepared.

#### Launch Service to Taboga.

Effective May 15, the following will be the schedule of the launch service between Balboa and Taboga Island:

The launch *Taboga* sails from Balboa dredge landing to Taboga daily, including Sundays, at 9.40 a. m.

On Saturdays, Sundays, and holidays an additional trip is made at 5.30 p. m.

From Taboga Island to Balboa—Daily, including Sundays, at 10.45 a. m.; Saturdays, Sundays, and holidays, an additional trip at 7 p. m.

The rates at the Hotel Aspinwall are as follows:

	Per day.
Employees.....	\$2.00
Nonemployees.....	2.50
Children under 12 years of age.....	1.00
(Babies under 18 months free of charge.)	
Servants.....	1.00
Employees' rate for stay of 14 days or over.....	1.75
Launch rates for one way between Balboa and Taboga are as follows:	
Employees.....	\$0.30
Employees' children.....	.20
Nonemployees.....	.60
Nonemployees' children.....	.40

THE CANAL RECORD acknowledges, with thanks, the receipt of a copy of the second edition of a handbook of the navigation laws of the United States, compiled by Walter Macarthur.

## QUARANTINE ACTIVITIES.

### Emigration and Immigration Almost Even in April.—Consolidated Report.

Emigration from the Isthmus to foreign ports in April exceeded immigration from foreign ports during the month by 40 persons. The number of persons landing at the ports of Cristobal-Colon and Balboa-Panama from foreign ports (that is, exclusive of those arriving from coast towns on launches and sailing craft) was 2,890, and the number embarking for foreign ports was 2,930. The latter exceeded the former by 1.38 per cent.

The total numbers of passengers and crews examined at the ports were 3,577 and 10,490 respectively. This is a total of 14,067, as compared with 13,613 in March, 12,063 in February, and 11,641 in January. The number examined in April of last year was 14,637. The highest number for any month was 18,169, in March, 1915. The next highest was 18,120, in September, 1915, the month in which the Canal closed to navigation. With the reopening of the Canal the numbers have been increasing.

A summary of the quarantine activities on the Isthmus during April is given in this consolidated report for the ports of Balboa-Panama and Cristobal-Colon:

Number of vessels inspected and passed.....	146
Number of vessels held in quarantine.....	10
Total.....	156
Number of special inspections made to enforce compliance with anti-plague and mosquito breeding regulations.....	116
Number of vessels fumigated on arrival.....	11
Number of vessels fumigated on departure.....	3
Total.....	14
Number of crew examined.....	10,490
Number of passengers examined.....	3,577
Total.....	14,067
Number of supplementary inspections.....	1,047
Number of stowaways inspected.....	5
Number of persons vaccinated at port of arrival because of compulsory vaccination law.....	270
Number of persons vaccinated at port of departure or en route because of compulsory vaccination law.....	1,361
Total.....	1,631
Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever and baculent plague.....	391
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague.....	1,306
Total.....	1,697
Number of persons landed from foreign ports:	
Cabin.....	1,523
Steerage.....	1,367
Total.....	2,890
Number of persons embarked for foreign ports:	
Cabin.....	1,753
Steerage.....	1,177
Total.....	2,930
Number of persons arriving from coast towns on small launches and sailing craft.....	2,163
Number of persons sailing for coast towns on small launches and sailing craft.....	1,559
Apparent increase for month from coast towns.....	604
Apparent decrease for month from foreign ports:	
Cabin (decrease).....	230
Steerage (increase).....	190
Net decrease for month.....	40
Number of persons rejected and deported.....	22
Number of bills of health issued or revised.....	159
Number of inspections of docks.....	23
Number of inspections of vessels at docks.....	101

Number of persons landed.....	5,053
Less number for Pacific ports.....	196
Total.....	4,857
Total number persons sailing.....	4,489

Total apparent increase for month..... 368

The immigration report of Colon, which is the port receiving the majority of passengers, classifies the immigrants during April by places of origin, as follows:

From.....	Cabin.....	Steerage.....
Europe.....	11	7
United States.....	506	585
Jamaica and West Indies.....	96	337
Venezuela.....	15	6
Colombia.....	111	58
Cuba.....	53	22
Costa Rica.....	191	20
Bocas del Toro.....	59	134
Coast towns.....		163
Total.....	1,042	1,331

Grand total..... 2,373

Of the 2,373, the men numbered 875; women, 538; children, 229; United States troops, 569; and 162 were not classified.

#### Planning Extensive Fourth of July Celebrations.

The members of the finance committee of the official celebration of the Fourth of July have all been provided with subscription blanks, payroll deduction slips, and free transportation tickets for subscribers to the fund. Transportation to Balboa from any station of the Panama Railroad, and return, will be furnished without charge to every subscriber to the fund and to the members of his family. The free transportation tickets are given out by the men who are circulating the subscription lists and if any contributor fails to receive his tickets he should take the matter up immediately with the member of the finance committee to whom he made his contribution.

The finance committee state that as no funds have been left over from previous celebrations liberal contributions will be required to make up a sufficient fund. Efforts are being made to give every American Canal and railroad employe and officers of the military services, and business people in Panama and Canal opportunity to subscribe to the fund.

Notwithstanding the lack of left-over funds, it is the endeavor of the executive committee to provide one of the largest and most interesting celebrations which have been held on the Isthmus. The entertainment committee has been busy in planning the various features, and those outlined up to this time include an all-star baseball game between picked teams representing the Army and the civilians, an automobile and motorcycle parade, various athletic and aquatic contests, a trap-shooting meet, and military parades and demonstrations of considerable extent. The plans will be extended and developed according to the extent of the contributions to the cause.

#### Changes at the Hotel Washington Swimming Pool.

The Governor has appointed a committee, consisting of the Resident Engineer of the Building Division, the Acting Chief Health Officer, and the Municipal Engineer, to investigate and make recommendations for changing the swimming pool at the Washington Hotel, so that it will conform with the conditions required by recent ordinances of the Health Department governing swimming pools and bathing beaches in the Canal Zone.



## ALTERING THE "BIRDENA".

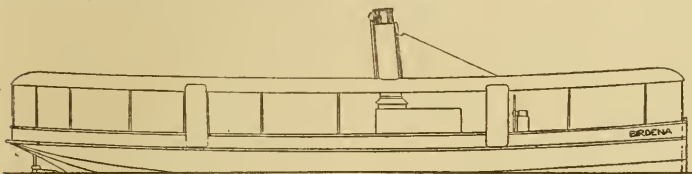
Old French Passenger Launch Made into Towboat for Light Service.

The old French steam launch *Birdena* has been transformed from a passenger boat into a modern towboat for the Paraiso shops forces. She left the wharf at Paraiso for her new service on May 2, after undergoing the necessary alterations in the short time of eight days from the date she was taken out of commission.

The *Birdena* has a length of 57 feet nine inches over all, beam of 12 feet, and depth of five feet 9½ inches. Her engines and boilers were found to be in first-class condition. The awnings and high rail with which the boat was formerly equipped were removed, and a

equipment actually built in France, as the most of the equipment used by the French was built at Renfrew, Scotland, and some of the dredges were built in Belgium. The *Birdena* was built in 1887, and the French intended to use her in the vicinity of Pedro Miguel for handling dredges and equipment. They brought her alongside the canal by rail and left her high and dry. In the operations that followed the boat was found to be in the way, so they cut her into four pieces and transported the pieces into Culebra Cut, between Culebra and Empire. Here the forces of the old Material and Supply Division found her.

"The sections were loaded on cars and hauled to the La Boca shipways, then oper-



THE "BIRDENA" AS A PASSENGER LAUNCH.

wheelhouse and deckhouse were installed, along with new bulwarks and a towing outfit. The changes are shown in the accompanying elevations of the boat before and after the transformation. The *Birdena* is now being used as an "inside towboat", to work in company with the recently reconstructed *DeLesseps* in handling 350-yard barges in Gaillard Cut, to and from the towing station. The French

ated by the Material and Supply Division, and the boat was rebuilt and refitted with condensing compound engines, with cylinders nine and 14 inches in diameter and a 12-inch stroke, and a dry-back boiler was installed. This was in 1905. Since that time the boat has been in continuous service, as an observation boat for the chief engineers and division and resident engineers, and for transferring



THE "BIRDENA" CHANGED INTO A SMALL TOWBOAT.

launch No. 26 will shortly undergo a similar reconstruction at Paraiso shops in order that she may be adapted to light towing.

Commenting on the changes to the *Birdena*, the Superintendent of Dredging stated:

"Of all the equipment on the Isthmus that was left by the French, the *Birdena* has had, perhaps, the most romantic history. This boat was one of the few pieces of floating

men and equipment. She has probably carried, first and last, more of the different officials of the various Canal régimes than any other piece of equipment in the service. Shortly after she was placed in commission her name was changed by order of the chief engineer of that time, from *Balboa*, the name the Material and Supply Division had given her, to *Birdena*."

## CIVIL SERVICE EXAMINATIONS.

Physical Metallurgist; Specialist in Insects; Preparator in Entomology; Cheesemaker; Medical Interne; Assistant Shop Superintendent.

The United States Civil Service Commission announces an open competitive examination for physical metallurgist, for men only, about June 11, 1916 (date to be left blank in application), at Balboa Heights, C. Z. From the register of eligibles resulting from this examination, certification will be made to fill a vacancy in this position in the Navy Yard, Boston, Mass., at a salary ranging from \$6 to \$8 per diem, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. Physical metallurgy .....	40
2. Education .....	40
3. Experience .....	20

Total..... 100

Persons who meet the requirements and desire this examination should at once apply for form 1312, stating the title of the examination for which the form is desired, to the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z. Applications should be properly executed, excluding the medical certificate, and filed with the Secretary, Board of Civil Service Examiners, Balboa Heights, C. Z., in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form.

The following civil service examinations will be held on the dates indicated below. Information concerning them is posted at clubhouses and post-offices, as per number of announcement indicated:

Specialist in insects as carriers of plant diseases (male); \$1,600 a year; examination about June 11, 1916; No. 606.

Preparator in entomology (male and female): \$1,000 a year; examination about June 11-12, 1916; No. 605.

Cheesemaker (male); \$1,200 to \$1,440 a year; examination about June 11, 1916; No. 624.

Medical interne, Government hospital for the insane (male and female); \$900 a year; examination about June 11, 1916; No. 623.

Assistant shop superintendent (male); \$5.04 per diem; examination about June 11, 1916; No. 634.

## Displaying the Flag in the Presence of a Man-of-War.

The offices of the Port Captains are distributing to American steamship masters the notice contained in the following letter from the Secretary of Commerce to collectors of customs:

"You will please bring to the attention of the masters and owners of seagoing merchant vessels of the United States that the general custom of the sea prescribes that merchant ships generally, and especially in time of war, show their national colors in the presence of a man-of-war. Compliance with the custom is in the interest of the merchant shipping and commerce of the United States."

## Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Handel Scott.....	110888	Jamaica.....	Camp Bierd....	Colon agency....	May 2, 1916.

The estate of the abovenamed deceased employee of The Panama Canal or the Panama Railroad Company is now in process of settlement, and any claims against the estate or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to it, should be presented at once to the Acting Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## INSURANCE IN CANAL ZONE.

### Report of Business Transacted during Calendar Year 1915.

The following is a report of insurance business transacted in the Canal Zone during the period from January 1 to December 31, 1915.

All insurance laws of the Canal Zone are contained in the following Executive Orders:

#### Executive Order of March 12, 1907.

By direction of the President, it is ordered:

That no life, fire, accident, industrial, or indemnity insurance company shall be permitted to do business within the Canal Zone until it shall have complied with the following requirements:

1. It shall file with the Collector of Revenues:
  - (a). A certified copy of its articles of incorporation.
  - (b). A certificate of the Insurance Commissioner of the State of its incorporation showing that it is authorized to do business in the home jurisdiction.
  - (c). A resolution of its Board of Directors designating an agent within the Canal Zone upon whom legal process may be served.
  - (d). A certified copy of its last annual statement to the Insurance Commissioner of the State or country in which it may be incorporated; and from time to time thereafter copies of such additional reports as it shall make to the home Commissioner.
  - (e). A sworn statement, showing the amount of its capital stock paid in, its surplus, the amount of insurance it has outstanding, and the number of unsettled or uncontested claims pending against it.
2. It shall deposit with the Collector of Revenues \$10,000 in cash or securities, which shall be available to satisfy any judgment that may be rendered against it under any insurance policy that it may issue.
3. Upon complying with these conditions and the payment of an annual fee of \$53, the Collector of Revenues will issue to such company a certificate authorizing it to do business within the Canal Zone. Such certificate, however, shall be terminable by the direction of the chief civil authorities of the Canal Zone; but if terminated without fault upon the part of the insurance company, a proportionate rebate of the license fee will be made to the insurance company.
4. Each company, as a condition of continuing to do business within the Canal Zone, shall file with the Collector of Revenues, between January 1 and March 1 of each year, a sworn statement showing the business done by it within the Canal Zone during the previous calendar year, and shall pay, on or before March 1, to the Collector of Revenues, in lieu of all other taxes save taxes upon real estate and the annual fee provided for in Section 3 hereof, a license tax equal to one and one-half per centum of its premium receipts for the calendar year preceding.
5. The agent of any unlicensed insurance company doing business within the Canal Zone shall be subject to a fine not exceeding \$25 for the first offense, and not exceeding \$100 for the second offense.

Effective July 1, 1907.

WM. H. TAFT,  
Secretary of War.

#### Executive Order of October 15, 1909.

By direction of the President it is ordered;

That the Executive Order of March 12, 1907, effective July 1, 1907, be and the same is hereby amended by the addition of the following:

"Provided, that indemnity insurance companies whose business within the Canal Zone consists solely of furnishing indemnity bonds of employees of the United States, which are required by the laws of the Canal Zone, or regulations of the Isthmian Canal Commission, shall hereafter be exempt from liability to pay the annual fee of \$50 and the license tax of one and one-half per centum of their premium receipts.

ROBERT SHAW OLIVER,  
Acting Secretary of War.

Effective April 1, 1914, the office of Collector of Revenues was abolished and, under the provisions of the Executive Order of January 27, 1914, the Executive Secretary of The Panama Canal is charged with the duties of the Collector of Revenues outlined above.

The following insurance companies, having complied with the above laws, were authorized to transact business and did transact business in the Canal Zone during the year 1915: American Surety Company of New York, New York, N. Y.

Home Life Insurance Company, New York, N. Y.

Illinois Surety Company, Chicago, Ill.

Manufacturers Life Insurance Co., Toronto, Ont.

Maryland Casualty Company, Baltimore, Md.

Pan-American Life Insurance Co., New Orleans, La.

United States Fidelity & Guaranty Co., Baltimore, Md.

A statement of insurance transacted in the Canal Zone in 1915, as taken from the annual reports of the above companies, follows:

	Gross premiums	Gross losses paid
<i>Illinois Surety Co.</i>		
Fidelity.....	\$1,014.65	\$2,000.00
<i>Maryland Casualty Co.</i>		
Accident.....	12,171.99	3,524.64
Health.....	1,441.69	507.11
Workmen's compensation.....	108.35	.....
Fidelity.....	1,302.68	.....
Totals.....	15,024.71	4,031.75
<i>American Surety Co.</i>		
Fidelity.....	384.44	.....
Surety.....	45.17	.....
Total.....	429.61	.....
<i>U. S. Fidelity &amp; Guaranty Co.</i>		
Liability.....	70.34	.....
Fidelity.....	237.77	733.59
Surety.....	268.21	.....
Totals.....	576.32	733.59

Statistics of life insurance business in the Canal Zone in 1915, follow:

	No.	Amount
<i>Home Life Insurance Co.</i>		
Policies in force Dec. 31, 1914.....	160	\$247,426.00
Policies issued during 1915.....	41	74,343.00
Total.....	201	321,769.00
Policies lapsed during 1915.....	16	44,811.00
Policies in force Dec. 31, 1915.....	185	276,958.00
Losses and claims incurred, settled, or remaining unpaid during 1915.....	.....	.....
Premiums collected in 1915.....	.....	10,697.57
<i>Pan-American Life Insurance Co.</i>		
Policies in force Dec. 31, 1914.....	85	\$130,000.00
Policies issued during 1915.....	161	296,000.00
Total.....	246	426,000.00
Policies lapsed during 1915.....	56	109,000.00
Policies in force Dec. 31, 1915.....	190	317,000.00
Losses and claims incurred, settled, or remaining unpaid during 1915.....	.....	.....
Premiums collected in 1915.....	.....	12,734.59
<i>Manufacturers Life Insurance Co.</i>		
Policies in force Dec. 31, 1914.....	1	\$1,500.00
Policies issued during 1915.....	.....	.....
Policies lapsed during 1915.....	.....	.....
Policies in force Dec. 31, 1915.....	1	1,500.00
Losses and claims incurred, settled, or remaining unpaid during 1915.....	.....	.....
Premiums collected in 1915.....	.....	93.15

#### Recapitulation.

Miscellaneous Companies,  
Premiums received in 1915.

	Losses	Premiums.
Accident.....	\$3,524.64	\$12,171.99
Fidelity.....	2,733.59	2,939.54
Health.....	507.11	1,441.69
Liability.....	.....	70.34
Surety.....	.....	313.38
Workmen's compensation.....	.....	103.35
Totals.....	\$6,765.34	\$17,045.29
<i>Life Insurance Companies.</i>		
	No.	Amount.
Policies in force Dec. 31, 1914.....	246	\$378,926.00
Policies issued during 1915.....	202	370,343.00
Policies lapsed during 1915.....	72	153,811.00
Policies in force Dec. 31, 1915.....	376	595,458.00
Losses and claims incurred, settled, or remaining unpaid during 1915.....	.....	.....
Premiums collected in 1915.....	.....	23,525.31

No fire, marine, or tornado insurance companies did business in the Canal Zone in 1915.

The absence of fire insurance companies is due to the fact that practically all property in the Canal Zone is owned by the Government of the United States, which does not insure its property. The fire losses have been kept down to a remarkably low figure by the Canal Zone fire department.

It might be of interest to note herein that the population of the Canal Zone has steadily decreased since the issuance of the President's Executive Order of December 5, 1912, that the Canal Zone be as nearly as possible depopulated of all but employes and their families. According to the figures of the last police census of the Canal Zone, taken on July 10, 1915, the total population was approximately 30,000, divided roughly as follows:

- 3,500 male Americans, mostly employes.
- 6,000 soldiers and officers of military organizations.
- 9,600 male aliens, mostly employes.
- 3,500 American women and children, consisting of female employes and families of employes and military men.
- 7,400 alien women and children, consisting largely of families of employes.

#### Shortage of Tropical Oranges.

The quantity of so-called "tropical oranges" which the buyers of the commissary branch of the Supply Department have been able to secure has not been equal to the demand during the current season. This has been due to an unusually poor season. In Panama heavy rains fell during the time the orange trees were in bloom, destroying many of the blossoms, and an early beginning of the rainy season has completed the crop failure. Similar conditions are reported from Jamaica, but small quantities of oranges are available in the Jamaican market and the commissary branch expects to have some of them within a short time. The supply of Costa Rican tropical oranges, which has been tiding the demand over for several months, is about exhausted for the season; the stock is becoming poor and a large proportion of the last shipment had to be condemned. As a result, the increased demand for American oranges quickly exhausted the stock on hand. Cable orders were immediately despatched and it is expected that the situation will be relieved with the arrival of the United Fruit Company's ship from New York on May 10.

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., May 10, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be procured upon request of the addressees. Requests may be made by telephone, calling

No. 182, Balboa:	
Alexander, John	KopaId, Charles
Bauerath, Adolph A.	Lamothe, Wilfrid
Benjamin, C. A.	Linton, N. K.
Birkett, Joseph	Little, Joe
Carter, Miss Sue	Long, Mrs. Christina
Chong, Hop	MacCain, O. E.
Clark, T. P.	*McCoy, Ross
Darnell, Jesse	McDonald, J. M.
David, Juan	McDonald, James F.
Fallan, Eddie Lee	O'Neil, James
Gaskin, Harcourt	Pennar, George M.
*Gason, Arthur	Robins, Alonzo
Geltz, E.	Rowe, Wesson R.
Grose, Earl	Sebt, Mrs. J. F.
Humphrey, Mrs. C. B.	Simon, Johnnie
Inley, John F.	Toil, Lawrence
Jacobs, Lt. W. C.	Turner, H. W.
*Jones, Whit Stanley	Uris, Mrs. S.

\*Paper.



## WEATHER CONDITIONS.

In the Canal Zone during the Month of April, 1916.

The rainfall for the month was about normal at 12 stations, and deficient at six stations, there being a slight deficiency on the Pacific coast and for Gatun Lake proper. Considered by sections, the rainfall was above normal throughout the Zone. At Miraflores, Pedro Miguel, Juan Mina, and Vigia, the rainfall exceeded anything on record at these stations for the month of April.

Dry season conditions were broken by a general rain over the Isthmus on the 11th, and rainy season conditions prevailed during the last 10 days of the month. Totals ranged from 2.84 inches at Balboa Heights, to 9.82 inches at Pedro Miguel. The greatest amount of rainfall on any one day was 2.79 inches, at Monte Lirio on April 11. The April rainfall for three years has been as follows:

April Rainfall for Three Years.

STATIONS.	1914	1915	1916	Station average.	Years of record.	Rainy days, 1916.
<i>Pacific Section—</i>						
Balboa .....	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
Balboa Heights .....	4.80	5.37	2.84	2.87	18	15
Miraflores .....	2.69	2.88	8.27	3.72	8	14
Pedro Miguel .....	3.00	2.39	9.82	3.82	9	15
Rio Grande .....	.83	3.41	5.23	3.23	12	12
<i>Central Section—</i>						
Culebra .....	.62	3.81	5.66	3.63	26	13
Camacho .....	.49	4.52	4.02	3.27	10	14
Empire .....	.50	4.96	4.05	3.24	12	15
Gatun .....	1.38	7.09	6.68	3.60	35	14
Juan Mina .....	1.01	7.74	8.12	3.47	6	12
Alhajuela .....	1.68	8.94	5.84	3.47	17	9
Vigia .....	2.05	6.77	8.17	3.30	6	7
Frijoles .....	2.93	11.56	3.57	4.34	9	10
Trinidad .....	3.16	9.27	4.9	5.10	9	15
Monte Lirio .....	4.44	12.19	4.73	5.48	9	13
<i>Atlantic Section—</i>						
Gatun .....	3.26	15.90	4.77	5.14	12	15
Brazos Brook .....	7.33	12.17	4.9	4.87	10	13
Colon .....	4.12	10.42	6.2	4.23	46	12
Bocas del Toro .....	10.71	10.09	3.1	9.65	8	10

The estimated rainfall over the Gatun Lake watershed was 29 per cent above the average, and over the Chagres River basin above Alhajuela, 63 per cent above the average.

The air temperature was slightly below normal on the Pacific coast, and one degree Fahrenheit above the average on the Atlantic. Atmospheric pressure was approximately normal, while the relative humidity, daytime cloudiness, and temperature of the sea water were above the average on both coasts. There was a deficiency in both the wind movement and evaporation.

Elevations of Gatun Lake in feet above mean sealevel, were as follows: Maximum, on the 13th, 86.25; minimum, on the 10th, 85.91; mean for the month, 86.06.

Evaporation from the lake surface amounted to 6.391 inches during the month.

The following is a summary of the climatological conditions recorded at the Atlantic and Pacific coast stations:

STATIONS.	Pressure (reduced to mean of 24 hours).	Temperature.						Precipitation.						Wind.			
		Mean.		Maximum.	Date.	Minimum.	Date.	Total inches.	Station average.	Days of 01 inch or more.	Total movement (miles).	Prevailing direction.	Max. velocity in miles.	Direction.	Date.		
Colon .....	29.86	81.8	89	Apr. 27	73	April 1	84	6.25	4.23	12	8,424	N.	31	N.E.	April 12		
*Balboa Heights ...	29.85	81.2	92	April 5	69	April 1	83	2.84	2.87	14	5,432	N.W.	27	N.	April 10		

\*Formerly Ancon.

## OFFICIAL CIRCULARS.

Commutation of Subsistence for Employees of Corozal Hospital.

THE PANAMA CANAL, EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., April 25, 1916. CIRCULAR No. 625-3:

Paragraph 27 of circular No. 625-2, dated September 15, is hereby amended to read as follows:

Employees having families dependent upon them shall be allowed commutation of subsistence at the rate of 27 cents gold per day for colored men and 40 cents gold per day for white men for each day they are on duty or sick with a doctor's certificate covering the period of their sickness, and shall be allowed the same commutation for Sundays and holidays, providing they shall have worked the day preceding and the day following, or providing absence on these days was due to their illness.

GEO. W. GOETHALS, Governor.

Acting Magistrate for the District of Cristobal.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT, BALBOA HEIGHTS, C. Z., May 3, 1916.

To all concerned—Effective May 4, 1916, and during the absence of Judge John W. Thompson on leave, Mr. F. G. Swanson will act as magistrate for the district of Cristobal.

GEO. W. GOETHALS, Governor.

Acting Officials at Gatun Locks.

THE PANAMA CANAL, DEPT. OF OPERATION AND MAINTENANCE, BALBOA HEIGHTS, C. Z., May 2, 1916.

To all concerned—During the absence of Capt. T. H. Dillon, Corps of Engineers, on leave, effective May 4, 1916, the duties of superintendent, Gatun Locks, will be performed by Capt. E. J. Atkinson, Corps of Engineers, and those of assistant superintendent by Mr. E. D. Stillwell.

JAY J. MORROW,

Assistant to Engineer of Maintenance.

Approved: CHESTER HARDING, Engineer of Maintenance.

Acting Superintendent of Southern District of Division of Municipal Engineering.

THE PANAMA CANAL, DIVISION OF MUNICIPAL ENGINEERING, BALBOA HEIGHTS, C. Z., May 3, 1916.

To whom concerned—Mr. W. E. Maxon is designated acting superintendent, southern district, Division of Municipal Engineering, during the absence of Mr. W. J. Spalding on leave, effective May 4, 1916.

D. E. WRIGHT, Municipal Engineer.

Accountable Official.

THE PANAMA CANAL, ACCOUNTING DEPARTMENT, BALBOA HEIGHTS, C. Z., May 2, 1916.

CIRCULAR No. 120:

Effective this date, Mr. A. H. Jones is designated an accountable official of The Panama Canal, vice Mr. H. D. Hinman, and as such will account for all non-expendable property now in the custody of Mr. Hinman.

H. A. A. SMITH, Auditor, The Panama Canal.

Approved: GEO. W. GOETHALS, Governor.

Abolishing Panama Canal Yard Office at Balboa.

PANAMA RAILROAD COMPANY, OFFICE OF MASTER OF TRANSPORTATION, BALBOA HEIGHTS, C. Z., April 29, 1916.

CIRCULAR No. 360:

To all concerned—Effective May 1 the Panama Canal yard office at Balboa, known as "Chell's Tower," phone 537, will be abolished. All departments desiring work done at the Balboa terminal will send switching requests

direct to the Panama Railroad yard office, Balboa, phone 392.

Approved: C. H. MOTSETT, Superintendent.

S. W. HEALD, Master of Transportation.

Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 303, on Wednesday, May 17, 1916, beginning promptly at 9 a. m. for persons desiring the following classes of licenses: Pilot, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights; on Wednesday, the day of the regular examination, for out-of-town applicants, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give a demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, May 19, 1916, beginning at 9 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

GEO. J. VAN DERSLICE, Recorder, Board of Local Inspectors.

Rainfall from April 1 to 30, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>			
Balboa .....	Ins.	Ins.	Ins.
Balboa Heights .....	.89	11	3.06
Miraflores .....	.83	11	2.84
Pedro Miguel .....	1.66	24	8.27
Rio Grande .....	1.79	24	9.82
<i>Central Section—</i>			
Culebra .....	1.72	21	5.66
Camacho .....	1.00	11	4.02
Empire .....	1.43	21	4.05
Gatun .....	1.90	25	6.68
Juan Mina .....	1.69	25	8.12
Alhajuela .....	2.10	25	5.4
Vigia .....	2.70	27	8.17
Frijoles .....	3.35	11	3.85
Trinidad .....	2.62	11	4.93
*Monte Lirio .....	2.79	11	4.73
<i>Atlantic Section—</i>			
Gatun .....	2.45	11	4.72
*Brazos Brook .....	1.84	11	4.99
Colon .....	2.48	24	6.25
Bocas del Toro .....	1.18	29	3.14

Rainfall from May 1 to 6, 1916, Inclusive.

STATIONS.	Ins.	Date.	Ins.
<i>Pacific Section—</i>			
Balboa .....	1.40	5	1.75
Balboa Heights .....	1.04	5	1.43
Miraflores .....	1.14	5	1.13
Pedro Miguel .....	1.30	5	1.32
Rio Grande .....	.99	5	1.06
<i>Central Section—</i>			
Culebra .....	.52	5	.87
*Camacho .....	.41	5	.84
Empire .....	.74	5	.75
Gatun .....	1.38	5	1.52
*Juan Mina .....	.57	5	1.13
Alhajuela .....	.05	5	.05
*Vigia .....	.15	5	.18
Frijoles .....	.37	5	.73
*Monte Lirio .....	.14	5	.25
<i>Atlantic Section—</i>			
Gatun .....	.25	3	.83
*Brazos Brook .....	.40	4	.70
Colon .....	1.0	18	.30
Bocas del Toro .....	.69	5	.89

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values, midnight to midnight.



## COMMISSARY DEPARTMENT.

## Sales of Flour Sacks.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., May 8, 1916.

MEMO. TO ACCOMPANY BULLETIN NO. 618:

To commissary managers—Owing to the fact that the demand for the Osnaburg flour sacks at 10 cents is far greater than the supply, it has resulted in considerable dissatisfaction on the part of our customers and some charges of favoritism, it has been decided to accept deposits in this office for them in the same manner in which deposits are accepted for Royal Doulton china ware, as outlined in the above numbered bulletin. Orders will not be filled for more than 10 sacks from any one person at any one time.

Please advise your trade accordingly.

BENJ. L. JACOBSON,  
Depot Commissary.

## Cold Storage Prices.

The following list of retail prices of cold storage provisions will be effective May 11, 1916.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.	
Beef, suet, special, per lb.	\$.03
Beef suet, native, per lb.	.03
Soup beef, special, per lb.	.02
Soup beef, native, per lb.	.02
Soup bone, special, per lb.	.02
Soup bone, native, per lb.	.02
Stew beef, native, per lb.	.08
Plate beef, native, per lb.	.08
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (3 1/2 lbs. up), special, per lb.	.16
Rib roast, 2d cut (3 1/2 lbs. up), native, per lb.	.09
Rib roast, 1st cut (3 1/2 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 1/2 lbs. up), native, per lb.	.11
Pot roast, special, per lb.	.20
Pot roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse roast, choice, per lb.	.31
Porterhouse roast, special, per lb.	.22
Porterhouse roast, native, per lb.	.16
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.12
Porterhouse steak (14 lbs. up), choice, per lb.	.23
Porterhouse steak (14 lbs. up), special, per lb.	.23
Porterhouse steak (14 lbs. up), native, per lb.	.17
Porterhouse steak, short, choice, per lb.	.28
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25
Tenderloin steak, western, special, per lb.	.23
Rib steak, native, per lb.	.11
FRESH MEATS.	
Lamb, chops, per lb.	.29
Lamb, chops, shoulder, per lb.	.20
Lamb, legs, 5 to 8 lbs., per lb.	.24
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.15
Lamb, stewing, per lb.	.12
Mutton, chops, short cut, per lb.	.23
Mutton, chops, shoulder, per lb.	.17
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.12
Mutton, stewing, per lb.	.09
Pork, hams, fresh (see footnote), per lb.	.25
Pork, loins, chops, or roast, per lb.	.19
Pork, shoulders, fresh (see footnote), per lb.	.20
Veal, chops, per lb.	.24
Veal, chops, shoulder, per lb.	.36
Veal, cutlets, per lb.	.41
Veal, loin for roasting, per lb.	.36
Veal, shoulder for roasting not under 10 lbs., per lb.	.18
Veal, stewing, per lb.	.15
MISCELLANEOUS.	
Beef heart, fresh, per lb.	.12
Brains, calves', per lb.	.10
Calves' heads, ea.	.78
Kidneys, beef, per lb.	.13
Livers, beef, per lb.	.09
Livers, calves', per lb.	.27
Pate de foie gras, jar.	.55
Pigs' heads, fresh, whole, ea.	.83
Pigs heads, fresh, 1/2 head, half.	.42
Sausage, bologna, per lb.	.18
Sausage, frankfurter, per lb.	.18
Sausage, liverwurst, per lb.	.16
Sausage, pork, per lb.	.30
Sausage, Salami, per lb.	.17
Spare ribs, pork, per lb.	.17
Seak, hamburger, pkg.	.17

Steak, hamburger, 20-pound container, per lb.	.14
Sweetbread, beef, per lb.	.21
Tails, ox, per lb.	.06
Tongue, beef, native, whole, per lb.	.26
Tripe, per lb.	.26
Yeast, per lb.	.31
Yeast, cake.	.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.31
Bacon, breakfast, sliced, per lb.	.32
Bacon, sliced, jar.	.32
Bacon, sliced, tin.	.30
Bacon, strips, whole strip.	.25
Beef, corned.	.12
Beef, salt, per lb.	.02
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.16
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	.19
1. Ham, sugar cured (whole) per lb.	.26
2. Ham, sugar cured (half) per lb.	.29
3. Ham, sugar cured (sliced) per lb.	.34
1. Ham, sugar cured, hunk (whole) per lb.	.35
2. Ham, sugar cured, boiled (half).	.38
3. Ham, sugar cured, boiled (sliced).	.41
Ham, special, per lb.	.40
Pigs' feet, pickled, per lb.	.08
Pork, bellies, per lb.	.18
Pork, clear, per lb.	.14
Pork, standard mess, per lb.	.15
2. Tongue, beef, corned native, whole, per lb.	.20
Tongue, pigs', per lb.	.22

## POULTRY AND GAME.

Broilers, corn fed, per lb.	.32
Broilers, milk fed, per lb.	.32
Chickens, fancy, per lb.	.30
Chickens, fancy roasting, corn fed, per lb.	.32
Chickens, fancy roasting, milk fed, per lb.	.33
Ducklings, per lb.	.31
Ducks, light, per lb.	.25
Fowls, western, dry pickled, per lb.	.27
Geese, per lb.	.31
Grouse, ea.	.60
Squabs, per lb.	.47
Turkeys, per lb.	.47
DAIRY PRODUCTS.	
Butter, creamery special, per lb.	.52
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.51
Butter, Sheffield farms, extra fancy, per lb.	.51
Cheese, Edam, ea.	1.50
Cheese, Edam, tin.	.43
Cheese, Gouda, per lb.	.36
Cheese, Parmesan, per lb.	.47
Cheese, Philadelphia cream, cake, ea.	.75
Cheese, Roquefort, per lb.	.75
Cheese, snappy, cake.	.49
Cheese, Swiss, per lb.	.43
Cheese, Young America, per lb.	.24
Cream, 30 per cent, 4 pt.	.17
Cream, 30 per cent, pt.	.29
Cream, 30 per cent, qt.	.29
Eggs, fresh, per doz.	.35
Eggs, fresh, 1/2 doz. only.	.18
Fer-mil-lac, bottle.	.25
Ice cream, (see footnote) 1 gal.	.25
Milk, Sheffield farms, qt.	.15
Oleomargarine, per lb. cto.	.29

## FISH.

Bluefish, fresh, per lb.	.27
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.12
Halibut, fresh, per lb.	.14
Herring, smoked, per lb.	.13
Oysters, fresh, per qt.	.44
Salmon, fresh, per lb.	.16
Whitefish, smoked, per lb.	.32

## VEGETABLES.

Beans, string, per lb.	.10
Beets, per lb.	.09
Cabbage, per lb.	.09
Carrots, per lb.	.02
Celery, per head.	.17
Peas, green, per lb.	.04
Onions, per lb.	.04
Palmitos, ea.	.21
Parsley, per bunch.	.08
Peas, per lb.	.04
Plantains, per doz.	.12
Potatoes, white, per lb.	.03
Peas, per bunch.	.08
Squash, per lb.	.03
Tomatoes, per lb.	.03
Turnips, per lb.	.02
Yams, per lb.	.03

## FRUITS, DRIED.

Apples, evaporated, per lb.	.09
Apricots, evaporated, per lb.	.15
Currants, cleaned, pkg.	.16
Figs, 2-lb. box.	.35
Peaches, per doz.	.09
Pears, evaporated, per lb.	.18
Pel, citron, per lb.	.20
Pel, lemon, per lb.	.16
Pel, orange, per lb.	.16
Prunes, stewing, per lb.	.11
Raisins, seeded, pkg.	.10
Raisins, table cluster, per lb.	.17

## FRUITS, FRESH.

Apples, per lb.	.05
Apples, select, per lb.	.09
Bananas, 8 bunch and over, per bunch.	.40
Bananas, 6 and 7 hands, per bunch.	.28

Bananas, ea.	Per ct.
Cranberries, per lb.	.00
Grapefruit, select, ea.	.06
Grenadillas (maypos), per doz.	.08
Lemons, per doz.	.75
Limes, per 100	.08
Oranges, select, ea.	.02
Oranges, tropical, doz.	.10
Pineapples, ea.	.10
Alligator pears, each.	.05
Mangoes, each.	.02
Squash, per lb.	.03

\* Indicates advance from preceding list.

\*\* Indicates five cents allowed for return of bottle.

† Indicates reduction from preceding list.

‡ Sold only from commissaries, no orders taken for delivery.  
§ Not less than 1/4 ham or 1/4 shoulder of fresh pork will be sold.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective April 28:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Cases, suit, ea.	\$4.40	\$4.75
Shoes, men's, pr.	3.70	4.00

## EFFECTIVE APRIL 29, 1916.

Beaters, egg, ea.	.05	.06
Beds, iron, ea.	2.15	2.30
Biggins, coffee, ea.	.39	.40
Bugs, wash, ea.	.61	.79
Bowls, sugar, ea.	.09	.14
Dishes, butter, ea.	.14	.19
Clocks, Bingo, ea.	1.40	1.60
Griddles, ea.	.49	.44
Griddles, ea.	.50	.46
Irons, sad, set.	.88	.95
Lines, clothes, hank.	.43	.49
Rugs, machine, ea.	7.05	7.45
Pans, pudding, ea.	.13	.15
Pans, pudding, ea.	.11	.13
Pans, dish, ea.	.40	.46
Pudding, 1/2 doz.	.45	.50
Picks, ice, ea.	.08	.06
Pipes, Briar, ea.	.16	.18
Rugs, Crox, ea.	5.45	5.70
Rugs, Crox, ea.	.75	.95
Rugs, Crox, ea.	.75	.95
Rugs, Crox, ea.	5.45	5.70
Rugs, Crox, ea.	5.45	5.70
Rugs, Crox, ea.	7.15	7.45
Rugs, Crox, ea.	7.15	7.45
Rugs, Crox, ea.	7.15	7.45
Sifters, flour, ea.	.08	.09
Wringers, ea.	2.45	2.85

## EFFECTIVE MAY 3, 1916.

Albums, post card, ea.	1.65	1.90
Bedspreads, ea.	1.00	1.20
Book, score, cricket, ea.	.50	.72
Brushes, tooth, ea.	.19	.24
Cases, pillow, ea.	.18	.21
Comfortables, ea.	1.40	1.50
Drawers, pr.	.60	.67
Drill, yd.	.27	.31
Drill, yd.	.28	.36
Gloves, pr.	.59	.65
Hooks, crochet, ea.	.04	.05
Ink, indelible, bot.	.16	.22
Kimonas, ea.	.96	1.05
Knickerbockers, pr.	2.35	2.70
Laces, corset, ea.	.09	.12
Shoes, costume, yd.	.09	.12
Needles, case.	.09	.12
Nightgowns, ea.	.82	.95
Pants, P. B., pr.	2.35	2.70
Paper, writing, box.	.19	.24
Paper, library, jar.	.03	.04
Percale, yd.	.09	.12
Pins, safety, card.	.04	.05
Shoes, racquet, ea.	.19	.24
Ribbon, yd.	.03	.04
Ribbon, yd.	.10	.13
Ribbon, yd.	.03	.04
Ribbon, pc.	.09	.12
Ribbon, yd.	.11	.17
Ribbon, yd.	.09	.13
Ribbon, yd.	.10	.14
Sheeting, rubber, yd.	.63	.68
Sheets, 54 x 90, ea.	.57	.61
Shirts, Boy Scout, ea.	1.05	1.20
Shirts, sport, ea.	1.25	1.40
Ties, ladies, string, ea.	.39	.37
Ties, ladies, string, ea.	.19	.21
Undershirts, ea.	.65	.72
Voile, yd.	.14	.18
Waist, yd.	.21	.23
Suits, bathing, suit.	3.65	4.20
Matches, pkg.	.05	.06

## Additions to Stock.

Bird seed, mixed, pkg.	\$0.01
Bird manna, pkg.	.09
Pans, dish, enamelled, 14-qt.	.81
Stoves, alcohol, Rockburn, ea.	.42

## SHIPPING INFORMATION.

## June Weather Probabilities.

The weather conditions which may be expected at the Canal entrances during the month of June, 1916, are as here set forth; the predictions are based on the records at Colon and Ancon for the past eight and 10 years, respectively:

**Winds**—Light, variable winds will prevail over the Atlantic coast, southeast predominating. The average hourly velocity will be about seven miles an hour, although during rain or thunder squalls a velocity of from 25 to 30 miles an hour may be reasonably expected.

Light, northwest winds will prevail over the interior and the Pacific coast, with a considerable percentage of variable winds, and an average hourly velocity of about six miles an hour. Here, too, during occasional rain squalls, the maximum wind velocity may be as high as 39 miles an hour, but these storms are invariably of short duration.

**Rains**—Rainy season conditions will prevail over the Canal Zone during the month of June, and heavy showers can be expected on both coasts and over the interior. The average monthly rainfall at the Atlantic entrance to the Canal is 13.44 inches, and at the Pacific entrance, 7.81 inches, averages being for periods of 45 and 18 years, respectively. The average numbers of days on which .01 inch or more of rain occurs, are 24 on the Atlantic coast and 20 on the Pacific side, while the average numbers of days on which the rainfall equals or exceeds one inch, are five and two, respectively.

**Fogs**—Night and early morning fogs will be numerous over the interior, but are not likely to occur over either coast. The average number of nights with fog over the Gaillard Cut is 21. All fogs may be expected to lift or become dissipated by 8.30 a. m.

**Temperature**—The average shade air temperature will be approximately 80° Fahrenheit over both coasts. The maximum temperature is not likely to be above 95° F., or the minimum below 70° F. The mean daily range in temperature will be about 14° F. over the Pacific coast and 9° F. over the Atlantic.

**Barometric pressure**—The Isthmus being without the regions affected by violent atmospheric disturbances, the atmospheric pressure over it is remarkably constant and uniform, except for the well marked diurnal fluctuation, caused by the daily changes in temperature, which have little value as indicators of future weather conditions. The average sea level pressure for the month will be about 29.84 inches, while the maximum pressure is not likely to exceed 29.94 inches, or the minimum to be lower than 29.71 inches, at either Canal entrance.

**Relative humidity**—There will be no appreciable increase of the percentage of moisture in the air, as compared with May conditions, and the humidity may be expected to average about 85 per cent over both coasts, although there will be a greater range on the Pacific coast, the percentage being higher during the night and lower during the day than on the Atlantic coast, owing to the greater range of the temperature.

**Storms**—Local rain and thunder storms may be expected very frequently during the month of June. The average number of days on which thunderstorms have occurred is 18 on

the Pacific coast, and the average on the Atlantic coast is 17. During these storms, comparatively high wind velocities may be attained, but these storms are invariably of too short duration to cause a rough sea. Generally cloudy weather, with smooth to moderate seas, can be expected at both Canal entrances.

**Tides**—The average tidal fluctuation at Colon is less than one foot and no consideration need be given to the tides in navigating the Atlantic entrance to the Canal.

Panama (Balboa) tide predictions for the period until July 1 are given below:

## Tide Predictions, Port of Balboa.

MAY.					
DATE.	Time and height of high and low water.				
Wed., May 10.....	3:10 4.2	9:16 11.5	15:51 5.0	21:34 11.1	
Thurs., May 11.....	4:11 4.4	10:22 11.5	17:07 4.9	22:49 11.1	
Fri., May 12.....	5:12 4.4	11:29 11.9	18:09 4.2	23:59 11.5	
Sat., May 13.....	6:12 4.0	12:27 12.7	18:54 3.3	.....	
Sun., May 14.....	0:55 12.3	7:07 3.3	13:15 13.6	19:45 2.2	
Mon., May 15.....	1:44 13.2	7:59 2.4	13:59 14.6	20:33 1.0	
Tues., May 16.....	2:29 14.2	8:46 1.5	14:43 15.5	21:17 0.0	
Wed., May 17.....	3:15 15.0	9:31 0.6	15:27 16.2	22:00 -0.8	
Thurs., May 18.....	4:01 15.6	10:16 0.1	16:14 16.5	22:44 -1.3	
Fri., May 19.....	4:49 15.9	11:01 -0.1	17:02 16.6	23:28 -1.3	
Sat., May 20.....	5:39 16.0	11:46 0.0	17:52 16.3	.....	
Sun., May 21.....	0:15 -0.9	6:30 15.8	12:36 18.5	18:44 15.7	
Mon., May 22.....	1:05 -0.3	7:21 15.4	13:30 1.3	19:37 14.9	
Tues., May 23.....	2:00 0.6	8:16 14.8	14:31 2.0	20:35 13.9	
Wed., May 24.....	3:00 1.5	9:15 14.2	15:38 2.6	21:30 13.1	
Thurs., May 25.....	4:04 2.2	10:21 13.8	16:45 2.8	22:54 12.6	
Fri., May 26.....	5:08 2.7	11:28 13.7	17:49 2.8	.....	
Sat., May 27.....	0:07 12.5	6:11 2.9	12:32 13.7	18:50 2.5	
Sun., May 28.....	1:10 12.8	7:10 2.9	13:25 14.0	19:45 2.0	
Mon., May 29.....	2:01 13.1	8:03 2.6	14:12 14.2	20:33 1.5	
Thurs., May 30.....	2:46 13.5	8:51 2.3	14:54 14.4	21:16 1.1	
Wed., May 31.....	3:27 13.7	9:33 2.0	15:33 14.4	21:56 0.9	

JUNE.

DATE.	Time and height of high and low water.				
Thurs., June 1.....	4:07 13.8	10:13 1.9	16:12 14.4	22:33 0.8	
Fri., June 2.....	4:46 13.8	10:50 1.9	16:50 15.0	23:09 0.9	
Sat., June 3.....	5:24 13.8	11:27 2.2	17:28 14.1	23:46 1.2	
Sun., June 4.....	6:01 13.6	12:04 2.6	18:05 13.7	.....	
Mon., June 5.....	0:22 1.6	6:33 13.3	12:43 3.0	18:42 13.3	
Tues., June 6.....	1:00 2.2	7:15 13.1	13:24 3.5	19:21 12.8	

DATE.	Time and height of high and low water.			
Wed., June 7.....	1:40 2.8	7:52 12.8	14:12 4.0	20:00 12.0
Thurs., June 8.....	2:26 3.4	8:34 12.5	15:06 4.2	20:48 11.8
Fri., June 9.....	3:17 3.8	9:23 12.4	16:05 4.2	21:47 11.5
Sat., June 10.....	4:15 4.1	10:22 12.5	17:06 3.9	22:58 11.6
Sun., June 11.....	5:16 4.0	11:25 12.9	18:07 3.3	.....
Mon., June 12.....	0:06 12.0	6:19 3.6	12:29 13.5	19:05 2.5
Tues., June 13.....	1:07 12.8	7:20 2.9	13:24 14.4	20:07 1.4
Wed., June 14.....	2:00 13.8	8:17 2.0	14:15 15.2	20:55 0.2
Thurs., June 15.....	2:53 14.7	9:10 1.0	15:06 16.0	21:43 -0.7
Fri., June 16.....	3:44 15.5	9:59 0.2	15:58 16.5	22:29 -1.4
Sat., June 17.....	4:36 16.1	10:46 -0.3	16:50 16.7	23:15 -1.7
Sun., June 18.....	5:27 16.5	11:32 -0.4	17:43 16.6	.....
Mon., June 19.....	0:01 -1.5	6:19 16.6	12:24 -0.1	18:34 16.1
Tues., June 20.....	0:50 -1.0	7:09 16.3	13:16 0.4	19:25 15.2
Wed., June 21.....	1:40 -1.0	8:00 15.7	14:12 1.2	20:17 14.5
Thurs., June 22.....	2:35 1.0	8:50 15.0	15:10 1.9	21:13 13.3
Fri., June 23.....	3:33 2.1	9:46 14.1	16:12 2.6	22:18 12.8
Sat., June 24.....	4:33 3.0	10:49 13.4	17:13 3.0	23:29 12.0
Sun., June 25.....	5:35 3.6	11:55 13.1	18:15 3.1	.....
Mon., June 26.....	0:39 12.0	6:42 3.8	12:55 13.0	19:16 3.0
Tues., June 27.....	1:33 12.1	7:37 3.7	13:48 13.1	20:10 2.6
Wed., June 28.....	2:28 12.5	8:29 3.4	14:34 13.4	20:57 2.1
Thurs., June 29.....	3:12 12.9	9:14 2.9	15:17 13.6	21:39 1.6
Fri., June 30.....	3:53 13.2	9:56 2.5	15:56 13.9	22:17 1.2

The times are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height, to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Maximum Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

STATIONS.					
DAY AND DATE.	Vigia	Alhajuela	Gambon.	Gatun Lake.	Miraflores Lake.
Sun., April 30.....	126.30	93.15	85.99	86.03	54.15
Mon., May 1.....	125.15	91.72	86.06	86.03	54.14
Tues., May 2.....	125.60	92.38	86.03	86.03	53.95
Wed., May 3.....	125.20	91.78	86.11	86.04	54.00
Thurs., May 4.....	125.53	91.88	86.04	85.99	53.92
Fri., May 5.....	125.45	92.00	86.03	85.97	54.22
Sat., May 6.....	128.00	93.87	86.08	86.02	54.20
Heights of low water to nearest foot.....	125.0	91.0	.....	.....	.....

## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., May 7, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
May 1	Towa Maru	Japanese	Gomei Kaisha Towa Kaisha	Port Arthur	Manila	Case oil		2,857	2,012
May 1	J. L. Luckenbach	American	Luckenbach Line	New York	Seattle	Case oil	5,480	5,114	3,258
May 1	Somerst	American	Standard Oil Company	Tampico	Pisagua	Crude oil	6,800	5,181	3,934
May 1	Barge No. 93	American	Standard Oil Company	Cristobal	San Francisco	Ballast		2,635	2,195
May 1	Cassis	British	Anglo-Saxon Petroleum Co.	New Orleans	Sydney	Petroleum	6,260	5,162	3,622
May 1	Strathesk	British	Strathesk Steamship Co., Ltd.	St. Vincent	Pisagua	Ballast		4,773	3,565
May 2	Natica	British	Anglo-Saxon Petroleum Co.	New Orleans	Shanghai	Petroleum	6,829	5,957	4,348
May 3	Gocan Maru	Japanese	Hashimoto Kisen Kabushiki Kaisha	Cadiz	Mollendo	Patent briquette	4,448	3,488	2,889
May 3	Alfanta	Peruvian	Peruvian Steamship Co.	Cristobal	Callao	General	1,300	4,639	2,673
May 3	Mors (collier)	American	United States Navy	Norfolk	San Diego	Coal	7,025		
May 5	Ignitos (transport)	Peruvian	Peruvian Government	Swansea	Mollendo	Coal	3,124	3,485	2,311
May 5	Monari	British	Pacific Steam Navigation Co.	Cristobal	Guayaquil	General	572	1,205	745
May 5	Wabana	British	British & Chilean S. S. Co.	Norfolk	Mejillones	Ballast		5,257	3,387
May 5	Veendijk	Dutch	Holland-America Line	New York	Batavia	General and oil	7,500	6,992	4,961
May 5	Thode Faehlund	Norwegian	Wilhelmsens Dampsk. Akties.	New Orleans	Tocopilla	Ballast		4,758	3,886
May 7	Westmeath	British	Norton Lilly & Company	New Zealand	New Zealand	General		9,438	6,834
May 7	Kioto	British	Norton Lilly & Company	New York	Shanghai	General and oil	12,000	7,292	5,576

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

May 1	Alaskan	American	American-Hawaiian Line	Tocopilla	Colon (orders)	Nitrates	11,500	9,223	6,703
May 1	San Francisco	Swedish	Johnson Line	San Francisco	Christiana	General	5,477	5,298	4,001
May 2	Bradford	American	Standard Oil Company	Tampico	Colon	Ballast		7,236	5,398
May 2	Ulasco	Chilean	South American S. S. Co.	Valparaiso	Colon	General	1,766	4,363	3,121
May 3	Urayali	Peruvian	Peruvian Steamship Co.	Callao	Colon	Hides, coffee, etc.	2,670	4,278	2,206
May 5	Cyrus W. Field	American	United States Navy	Balboa	Gatun and return				
May 5	No. 1 (launch)	American	United States Navy	Balboa	Gatun and return				
May 5	Peru	British	Pacific Steam Navigation Co.	Valparaiso	Colon	General	1,800	4,038	2,626
May 5	Charleston	American	United States Navy	Bremerton	Colon				
May 6	Cauca	British	Pacific Steam Navigation Co.	Guayaquil	Colon	General	977	1,557	998

## ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

May 8	Nissei Maru	Okazaki Kisen Kaisha	New York	May 8	Wakasa Maru	Nippon Yusen Kaisha	New York
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## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
May 3	Engineer	Harrison Line	Liverpool
May 6	Coronado	Elders & Fyfe	Port Limon.

## \*DEPARTURES.

Date	Vessel	Line	For
May 4	Kilpatrick	United States Army	New York
May 6	Neptune	United States Navy	Guantanamo, Cuba.

## \*EXPECTED ARRIVALS.

May 8	Conway	Royal Mail Steam Pack. Co.	London.
May 8	Peron	French Line	Saint Nazaire.
May 9	Buenos Aires	Spanish Line	Barcelona.

## \*EXPECTED DEPARTURES.

May 8	Engineer	Harrison Line	Galveston-Belize.
May 12	Buenos Aires	Spanish Line	Barcelona-Limon.
May 13	Conway	French Line	Saint Nazaire.
		Royal Mail Steam Pack. Co.	London via way pts.

\*Other than United Fruit Company's vessels in regular service with United States.

## PORT OF BALBOA.

## EXPECTED ARRIVALS FROM PACIFIC.

May 8	Chipona	New York & Pacific S. S. Co.	May 13	California	Sudden & Christensen	Chilean ports.
May 9	Hachensack	Brown, Jenkins & Co.	May 13	General Hubbard	Sudden & Christensen	
May 9	Airtson	American-Hawaiian Line	May 10	Tanyo Maru	Taylor Kisen Kabushiki K'a.	
May 9	Ikoma Maru	Nakanura Shokai	May 14	Roonook	Cal. South Sea Nav. Co.	
May 12	River Earth S. S.	South Pacific ports.	May 14	Perot	Gladstone & Company	New Zealand.
May 10	Imperial	South American S. S. Line	May 15	Tricolor	W. Wilhelmsens.	Iquique.
May 10	Los Angeles	Standard Oil Company	May 25	Wm. H. Murphy	P. L. Transportation Co.	
			May 20	La Primera	Standard Oil Company	San Francisco.

† Indicates vessel for passage through the Canal.

## Sailings of Vessels In Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.			
Vessel	Line	Sails	Arrives
Carrillo	U. F. C.	May 3	May 10
Cristobal	P. R. R.	May 4	May 11
Tenadores	U. F. C.	May 6	May 14
Santa Marta	U. F. C.	May 10	May 17
Alfonso	P. R. R.	May 11	May 18
Almirante	U. F. C.	May 13	May 22
Alfonso	U. F. C.	May 17	May 24
Panama	P. R. R.	May 18	May 24
Pastores	U. F. C.	May 20	May 28
Zacapa	U. F. C.	May 24	May 31
Allianca	P. R. R.	May 25	May 31
CRISTOBAL-COLON TO NEW YORK.			
Allianca	P. R. R.	May 11	May 17
Zacapa	U. F. C.	May 11	May 18
Calamares	U. F. C.	May 15	May 22

Cristobal	P. R. R.	May 18	May 25
Carrillo	U. F. C.	May 18	May 25
Tenadores	U. F. C.	May 22	May 29
Alfonso	P. R. R.	May 25	June 1
Santa Marta	U. F. C.	May 25	June 1
Panama	P. R. R.	May 29	June 6

## NEW ORLEANS TO CRISTOBAL-COLON.

Atenas	U. F. C.	May 6	May 13
Carito	U. F. C.	May 10	May 15
Hercida	U. F. C.	May 13	May 20
Abangarez	U. F. C.	May 17	May 22
Turrialba	U. F. C.	May 20	May 27
Parismina	U. F. C.	May 24	May 29
Atenas	U. F. C.	May 27	June 3
Carito	U. F. C.	May 31	June 7

## CRISTOBAL-COLON TO NEW ORLEANS.

Parismina	U. F. C.	May 14	May 19
Atenas	U. F. C.	May 14	May 22

**Fuel.**  
Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bulk, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.65 at Cristobal and \$1.40 at Balboa. Prices from the corporations may be obtained on application to them.





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

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Address all Communications.

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Delayed Sailing of the "Cristobal."

The steamship *Cristobal* of the Panama Railroad Steamship Line, which is being operated in the place of the *Colon* while the latter is undergoing a general overhauling in dry dock at New York, was due to sail from New York on May 4, and to arrive at Cristobal on May 11; but on account of delays in loading, caused by a strike of stevedores and by other labor troubles in New York harbor, the *Cristobal* did not clear until 7 a. m., May 10. She arrived at Cristobal in the morning of Wednesday, May 17.

It is expected, weather conditions permitting an uninterrupted discharge and loading of cargo, to have the *Cristobal* sail for New York on Thursday, May 25.

#### The "Advance" to Sail Sunday, May 21.

The scheduled sailing of the steamship *Cristobal* of the Panama Railroad Steamship Line from Cristobal for New York on Thursday, May 18, has of necessity been cancelled on account of the arrival of the ship from New York six days late. In order to catch up with the schedule, this procedure will be followed:

The steamship *Advance*, scheduled originally to sail from Cristobal on Thursday, May 25, will clear at 6 p. m., Sunday, May 21. This will place the ship in New York in time to allow her to sail from that port on June 1, so that there will be no break in the sailings from the United States. The *Cristobal* will

sail from Cristobal on Thursday, May 25, in the place originally assigned to the *Advance*, and thereafter she and the *Advance* will have exchanged places on the schedule, as printed.

All the reservations on the *Cristobal* having been taken for her next sailing from Cristobal, it will be impossible to transfer passengers to her from the *Advance*. Employees going on vacation who had planned to sail on the *Advance* on May 25 should have their leave changed to allow them to go on May 21.

#### Ready for the Transfer of Chagres People to Lagarto.

In preparation for the removal of the village of Chagres, situated at the mouth of the Chagres River, and the transfer of its inhabitants and their effects to a townsite at the mouth of the Lagarto River, eight miles beyond Chagres in the opposite direction from the Canal, in accordance with the plan outlined in a note in THE CANAL RECORD of February 2, 1916, forces attached to the office of the district quartermaster at Cristobal have erected temporary houses at Lagarto to quarter the people during the time necessary for them to erect their own houses on the lots to be assigned to them.

The claims of the people for their improvements at Chagres have been paid by The Panama Canal and arrangements have been made to provide transportation to the new town as soon as the inhabitants shall have assembled their effects for hauling. The governor of the province of Colon has been notified of the readiness of the Canal to do the moving at any time, and word has been sent also to several of the leading citizens. Their goods will be loaded on barges and towed by tugs, as was done in the transfer of people from the vicinity of Gorgona and Matachin to New Gorgona, 40 miles down the Bay of Panama, in September, 1913.

The temporary houses consist of two structures which are 60 by 25 feet in plan and one 50 by 18 feet in plan. They have been roofed over but walls have not been provided, as it is deemed the division into rooms can best be accomplished by the families which are to occupy them, according to their several needs. The covering for the quarters is the regular thatched roof of jungle houses. Native laborers were employed to build the roofs, under the supervision of American foremen from the office of the district quartermaster at Cristobal.

#### Hearings on Claim for Lani near Balboa Hotel.

The Joint Commission has concluded hearings on what is known as the Duque-Ayala claim, after devoting three weeks to the case. The property in question is the estate of "San Lazaro," a tract across the road from the Canal hotel at Balboa, embracing some 129,400 square meters (12.94 hectares, or about 32 acres) according to the Government maps, while the claimants claim an area of 152,242 square meters. The value claimed is \$600,000.

### CANAL TRAFFIC IN APRIL.

Statistics of Traffic in Half-Month Following Reopening of Canal.

Following the reopening of the Canal to traffic on April 15, the number of oceangoing vessels passing through in the half-month period to May 1 was 80. Launches and tugs in the Canal service are not included in the totals.

Five of the ships were vessels of the military service of the United States Government. Not counting these; the aggregate net tonnage of the 75 commercial ships was 190,127 tons, according to measurement for United States registry. The aggregate net tonnage according to the Panama Canal rules of measurement was 233,890 tons. The total cargo carried through the Canal was 356,139 tons.

The commercial ships making the transit from the Atlantic to the Pacific numbered 29; their United States net tonnage aggregated 79,657 tons; their Panama Canal net tonnage amounted to 98,642; and they carried a total of 132,245 tons of cargo.

The commercial ships moving from the Pacific to the Atlantic were 46 in number. Their aggregate United States and Panama Canal net tonnages were 110,470 and 135,248, respectively; and they carried a total of 223,794 tons of cargo.

The nature and distribution of the cargo carried through the Canal in April are shown in the tabulation on the following page. The cargo declarations listed 106 different commodities. Of these, eight were carried through the Canal in both directions.

Comparison of the traffic (75 ships, carrying 356,139 tons of cargo) with the months prior to the closing of the Canal is afforded by this table:

Month.	Atlantic-Pacific		Pacific-Atlantic		Total.	
	Vessels	Cargo tons.	Vessels	Cargo tons.	Vessels	Cargo tons.
Aug., '14	13	49,106	11	62,171	24	111,284
Sept. ....	27	141,762	30	110,271	57	322,038
Oct. ....	44	168,069	40	253,281	84	421,357
Nov. ....	54	206,510	38	242,291	92	448,801
Dec. ....	43	179,235	57	271,211	100	450,454
Jan. 1915	48	08,082	54	240,925	98	449,007
Feb. ....	39	150,987	53	276,077	92	427,065
March ....	57	217,447	40	417,610	137	635,057
April ....	59	237,384	60	285,457	119	522,841
May ....	67	246,534	75	332,174	142	578,708
June ....	83	320,619	60	282,561	143	603,180
July ....	93	316,773	77	338,696	170	705,469
August ..	89	249,119	72	326,218	161	575,337
Sept. ....	49	181,380	51	274,937	100	456,317
Total	761	2,873,007	758	3,833,901	1,519	6,706,915

It is seen that the traffic for the half-month of April was nearly half as great as that for the month of July, 1915, the month of greatest activity since the Canal has been open.

According to nationality, the British ships were greatest in number, 30 having passed through the Canal in April. The American ships numbered 26. Other nationalities were: Norwegian, five; Japanese, four; Danish and

Peruvian, three each; Chilean and Dutch, two each.

The tolls earned amounted to \$235,618.44. Comparison with earnings in the other months since the opening of the Canal to commercial traffic, on August 15, 1914, is afforded here-with:

Month.	Tolls earned.
August 15-31, 1914.....	\$88,401.80
September.....	265,600.80
October.....	366,786.48
November.....	369,161.28
December.....	407,914.80
January, 1915.....	398,601.12
February.....	383,904.96
March.....	551,092.56
April.....	442,415.49
May.....	522,676.95
June.....	539,229.05
July.....	573,365.67
August.....	496,792.03
September.....	349,498.30
October.....	496,792.03
November.....	349,498.30
December.....	10,826.00
January, 1916.....	654.39
February.....	834.00
March.....	418.80
April.....	235,618.44
Total.....	\$6,003,792.92

A classification of the cargo carried through the Canal in the month is given in the adjoining columns.

#### Customs Exemption Allowed Residents of the United States Returning from Abroad.

Passengers on ships bound for ports of the continental United States are required to make declarations of personal baggage, on blanks furnished for the purpose. Each passenger receives with the blank a printed "Notice to Passengers" which explains conditions governing the making out of declarations. This notice was reprinted in full in THE CANAL RECORD of February 11, 1914. It contains this section from the free list of the present tariff act:

642. Wearing apparel, articles of personal adornment, toilet articles, and similar personal effects of persons arriving in the United States; but this exemption shall include only such articles as were actually owned by them and in their possession abroad at the time of or prior to their departure from a foreign country, and as are necessary and appropriate for the wear and use of such persons and are intended for such wear and use and shall not be held to apply to merchandise or articles intended for other persons or for sale. *Provided*, That in case of residents of the United States returning from abroad all wearing apparel, personal and household effects taken by them out of the United States to foreign countries shall be admitted free of duty, without regard to their value, upon their identity being established under appropriate rules and regulations to be prescribed by the Secretary of the Treasury: *Provided further*, That up to but not exceeding \$100 in value of articles acquired abroad by such residents of the United States for personal or household use or as souvenirs or curios, but not bought on commission or intended for sale, shall be admitted free of duty.

On account of the numerous inquiries as to whether the above permits exemption up to \$100 for each member of a family, when several members of a family are returning to the United States at the same time, the Chief of the Division of Customs of the Treasury Department was requested for a ruling on the subject. He has advised that:

"Under the provisions of paragraph 642 of the tariff act, each member of a family is entitled to the \$100 exemption allowed residents of the United States returning from abroad. In the case of a husband and wife and minor or dependent children traveling together, the articles included within the exemption may be grouped and allowed free entry without regard or inquiry as to which member of the family has the legal title to the article at that time."

#### Commodities Shipped through the Panama Canal in April, 1916.

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Animal charcoal.....		52	52	San Francisco to New York.
Automobiles.....	6,854		6,854	From New York—1,720 to Wellington, 2,050 to Sydney; 2,050 to Melbourne; 1,034 to Brisbane.
Bark.....		94	94	Valparaiso to New York.
Barley.....		5,425	5,425	San Francisco to Europe.
Beans.....		92	92	Valparaiso to New York, 83; San Francisco to New York, 9.
Benrine.....	200		200	New York to Valparaiso.
Borate of Lime.....		20	20	Chilean ports to United States ports.
Borax.....		209	209	Antofagasta to Copenhagen.
Boric acid.....		15	15	San Francisco to New York.
Cacao.....		1,084	1,084	Guayaquil to New York, 384; Guayaquil to Europe, 300.
Cakes, cotton seed.....		65	65	Valparaiso to Denmark.
Canned goods:				
Fish.....		1,139	1,139	San Francisco to London, 457; San Francisco to Liverpool, 682.
Fruit.....		160	160	San Francisco to Liverpool.
Vegetables.....		4	4	San Francisco to New York.
Casings.....		59	59	San Francisco to New York.
Cement.....	20		20	New York to Valparaiso.
Cereals.....	29		29	New York to Los Angeles.
Coal.....	18,315		18,315	St. Thomas to Seattle, 2,923; Norfolk to Arica, 2,881; Baltimore to Guayaquil, 5,900; Norfolk to Caldera, 1,031; Kingston to Pacific, 5,580.
Cocoa leaves.....		5	5	Callao to Europe.
Coffee.....	1,200		1,200	Cristobal to Corinto.
Coke.....	10,699		10,699	Baltimore to Valparaiso, 3,913; New York to Coquimbó, 839; Norfolk to Caldera, 1,097; Cardiff to Santa Rosalia, 4,850.
Copper.....		2,100	2,100	Coquimbó to New York, 811; Callao to New York, 789; Chile to Europe, 500.
Copper ore.....		88	88	Callao to Europe.
Cotton.....		40	40	Peru to Europe.
Damiana bark.....		9	9	San Francisco to New York.
Earthenware.....	26		26	New York to Los Angeles and San Francisco.
Explosives.....	2,822		2,822	New York to Vladivostok.
Gasoline.....	92		92	New York to Los Angeles and San Francisco.
General cargo.....	32,905	17,105	50,010	From New York, 28,222—to San Francisco and Los Angeles, 1,628; to Adelaide, 6,700; to Auckland, 11,000; to Vladivostok, 4,473; to Yokohama, 11,000; to Chile, 3,421. From Cristobal, by transfer, 4,683—to Callao, 1,369; to Valparaiso, 1,507; to Guayaquil, 1,807. From Pacific ports—Victoria to United Kingdom, 2,550; San Francisco to Colon, 1,600; Callao to Cristobal, 1,811; San Francisco to London, 8,700; San Francisco to New York, 2,444.
Glassware.....	26		26	New York to Los Angeles and San Francisco.
Glass, rough wire.....	150		150	New York to Talcahuano, 50 tons; New York to Valparaiso, 100 tons.
Glue.....		5	5	Valparaiso to New York.
Gold.....		1	1	South America to Cristobal.
Grease, lubricating.....	125		125	New York to Antofagasta, 50 tons; New York to Valparaiso, 25 tons.
Gums and copal.....	5		5	New York to Los Angeles and San Francisco.
Hardware.....	236		236	New York to San Francisco and Los Angeles.
Hay.....		3	3	Chilean ports to Cristobal.
Honey.....		16	16	Chilean ports to Cristobal, 3; San Francisco to New York, 13.
Iodine.....	21		21	Iquique to New York, 13; Chile to Cristobal, 8.
Iron.....	160		160	New York to Manila.
Ivory nuts.....		340	340	Manta and Manglar Alto to New York.
Lead.....		15	15	Chilean and Peruvian ports to Cristobal.
Liquors.....		216	216	San Francisco to New York.
Livestock.....				Eight horses, Valparaiso to New York.
Lumber.....	60	8,700	8,760	New York to Valparaiso, 60; Victoria to United Kingdom, 2,550; Columbia River to England, 6,000; San Francisco to New York, 150.
Malt.....	17		17	New York to Los Angeles and San Francisco.
Manufactured goods:				
Iron and steel.....	5,642	33	5,675	New York to Los Angeles and San Francisco, 1,615; New York to Chile, 1,000; New York to Acony and Foochow, 20; New York to Vladivostok, 1,970; New York to Manila, 1,136. San Francisco to New York, 33.
Machinery.....	318		318	From New York to Los Angeles and San Francisco, 20; to Vladivostok, 140; to Manila, 158.
Railroad material.....	6,063		6,063	From New York—to Antofagasta, 20; to Coronel, 34; to Iquique, 2,663; to Talcahuano, 50; to Valparaiso, 274; to Wellington, 459; to Sydney, 1,181; to Melbourne, 1,924.
Miscellaneous.....	3,315		3,315	From New York—to Los Angeles and San Francisco, 95; to Manila, 2,000; to Vladivostok, 90; to Valparaiso, 530; to Talcahuano, 350; to Iquique, 250.
Textiles.....	150		150	New York to Valparaiso.
Marble.....	19		19	New York to San Francisco and Los Angeles.
Minerals.....	19	404	404	Chile to Cristobal.
Nails, wire.....	185		185	New York to Sydney, 85; New York to Manila, 100.
Naphtha.....	25	7,450	7,475	New York to Antofagasta, 25; Callao to New York, 7,450.
Nitrates.....		164,107	164,107	From Chilean ports—to United States ports, 121,784; to European ports, 42,173; to Cristobal, 150.
Nuts.....		12	12	San Francisco to New York.
Oakum.....	5		5	New York to San Francisco and Los Angeles.
Oats.....	50		50	New York to Valparaiso.
Oil, crude.....	6,262	3,714	9,976	Tuxpan to Pisagua, for orders, 5,900; Baltimore to Valparaiso, 272; San Francisco to Cristobal (storage), 374.
Oil, lubricating.....	600		600	New York to Japan.
Oil, mineral.....	930		930	From New York—to Valparaiso, 130; to Antofagasta, 600; to Iquique, 200.
Oils, vegetable.....	53		53	New York to Valparaiso, 50; New York to Manila, 3.
Ores.....		2,500	2,500	Mejillones to Boston.
Paint.....	152		152	New York to San Francisco and Los Angeles, 122; New York to Vladivostok, 30.



Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Panama hats.....		19	19	Guayaquil to Cristobal, 9; Guayaquil to New York, 10.
Paper.....	646		646	From New York—to Los Angeles and San Francisco, 287; to Valparaiso, 300; to Talcahuano, 50; to Manila, 9.
Peas.....		56	56	San Francisco to New York.
Petroleum, refined.....	25,695		25,695	Philadelphia to Shanghai, 7,930; Port Arthur to Nagasaki, 6,854; from New York—to Los Angeles and San Francisco, 125; to Japan 3,246; to Valparaiso, 679; to Amoy and Foochow, 5,390; to Manila, 1,500.
Pipes, iron.....	400		400	New York to Vladivostok.
Rags.....		2	2	San Francisco to New York.
Rice.....		1,027	1,027	San Francisco to New York.
Rosin.....	290		290	New York to Vladivostok.
Rubber.....	6	204	210	New York to Manila; Ecuador to New York, 190; Chile to Cristobal, 5.
Rubber, old.....		25	25	San Francisco to New York.
Scrap metal.....		961	961	Chile to Cristobal, 40; San Francisco to New York, 921.
Seed, canary.....	32		32	New York to Los Angeles and San Francisco.
Shells.....	23		23	San Francisco to New York.
Shingles.....		150	150	San Francisco to New York.
Silver sulphides.....		1	1	Chile to Cristobal.
Skins and hides.....		1,735	1,735	Ecuador to New York, 500; Callao to Cristobal, 725; Guayaquil to Cristobal, 5; Chile to Cristobal, 500; San Francisco to New York, 5.
Soap.....	55		55	New York to Los Angeles and San Francisco.
Straw matting.....	10		10	New York to Los Angeles and San Francisco.
Sugar.....		3,000	3,000	Callao to Cristobal.
Table relishes.....		37	37	San Francisco to New York.
Tallow.....		108	108	San Francisco to New York.
Textiles, miscellaneous.....		150	150	New York to Valparaiso.
Tin.....	3,500		3,500	New York to San Francisco.
Tin plate.....	120		120	New York to Valparaiso.
Tobacco.....	11		11	New York to Valparaiso and Los Angeles.
Turpentine.....	25		25	New York to Antofagasta.
Wax.....	1,019	1	1,020	New York to Valparaiso, 225; New York to Japan, 454; New York to Vladivostok, 340; Callao to Cristobal, 1.
Wire.....	16		16	New York to Manila.
Wire fencing.....	1,600		1,600	New York to Vladivostok.
Wool.....	520	1,131	1,651	New York to Vladivostok, 520; Callao to Cristobal, 752; Valparaiso to New York, 241; San Francisco to New York, 63.
Zinc.....		12	12	San Francisco to New York.
Total.....	132,345	223,794	356,139	

One hundred and six commodities; eight commodities going in both directions.

#### NOTICE TO STEAMSHIP LINES.

##### Limitations on Supplying Coal to Vessels at Established Rates.

The Governor issued the following notice to steamship lines under date of May 4:

1. Until further notice, The Panama Canal will not engage to supply coal at the established rates to other than the following classes of vessels:

(a) Those transiting the Canal.

(b) Those using either terminal port as a terminus of their established route.

(c) Those using either terminal port as a port of call on their regularly established route. In this case vessels will be supplied with sufficient bunker coal at the established rate to make the next port of call on their established route where commercial coaling stations are available.

2. It is the policy of the Canal to retain the price of coal at as low a figure as possible, and also to stabilize the price of bunker coal at the Canal during the present unsettled condition of the world's shipping, but, owing to the scarcity of bottoms available to deliver coal at the Canal, it will be necessary to supply bunker coal only to those vessels that are using the Canal and its facilities.

##### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, May 15, amounted to 229,386 cubic yards. In addition, 6,882 cubic yards of spoil were removed from the Cut in miscellaneous maintenance work. Spoil amounting to 48,934 cubic yards was rehandled by dredges in the course of disposing of it, but this excavation is not included in the reports. The

figures given are for primary excavation, and represent the decrease of material in the prism; rehandling is part of the work of disposing of this material.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	65,215
Gumbo.....	15-yard dipper.....	62,615
Paraiso.....	15-yard dipper.....	59,710
Coroal.....	Ladder.....	31,870
No. 83.....	Pipeline suction.....	5,752
Culebra.....	Seagoing suction.....	3,651
No. 86.....	Pipeline suction.....	45,284
No. 5.....	Belgian ladder.....	6,700
No. 84.....	Pipeline suction.....	6,250

The aggregate of primary excavation from the bases of the Culebra slides since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the close of work on May 15, 1916, has amounted to 13,684,689 cubic yards. This has been an average of 719,451 cubic yards per month.

In the current fiscal year, beginning with July 1, 1915, the total primary excavation from the Cut has amounted to 9,554,153 cubic yards up to midnight of May 15.

The American tank steamer *Cushing*, arriving at Balboa on April 23 for transit through the Canal, is the *Cushing* which became the grounds of international discussion as the result of having been attacked by an aviator of a belligerent country during the early part of the European war. Three bombs were dropped toward the ship, one of which struck but did not sink her. On her voyage through the Canal the *Cushing* was carrying a cargo of crude naphtha from Callao, via Talara, to New York.

#### HANDLING EXPLOSIVE LIQUIDS.

Attention Called to the Need of Caution, with Increasing Use of Gasoline on the Isthmus.

The General Storekeeper of the Supply Department has suggested the publication in THE CANAL RECORD of a paper, "Hazards in Handling Gasoline," by George A. Burrell of the Bureau of Mines. In submitting the article, the General Storekeeper stated:

"The Panama Canal is now using about 45,000 gallons of gasoline per month and about 37,000 gallons of kerosene. Twenty-five thousand gallons of the latter commodity per month is issued to the commissary department and is used in small quantities in Government quarters.

"Within the last year The Panama Canal has been selling gasoline in increasing quantities to employes and such sales will probably continue to increase in the future."

The following are the principal parts of Mr. Burrell's paper:

##### MISCELLANEOUS HAZARDS IN THE USE OF GASOLINE.

In gasoline-lighting systems, there are many hazards that can be introduced by faulty design and construction of apparatus. Among these are corrodible material, improperly made joints, and valves of poor design.

Many fires originate from the cleaning of silks with gasoline, the violent rubbing of the silk generating static electricity which produces a spark that ignites the vapor.

Many jobbing tailors cause fires by using gasoline in an open vessel and smoking a cigarette or cigar at the same time.

A dangerous practice, common in many garages, is the cleaning of automobile parts with gasoline from an open can. Employes find it easy to clean grease and oil from the motor and other parts with a brush saturated with gasoline, and the gasoline is readily ignited by a spark. Such a spark may be caused by striking two pieces of metal together, by the ignition system on the automobile when the starting crank is turned, and in other ways. In one instance a nut that stuck, was struck, with a wrench, causing a spark. The car was instantly enveloped in flame.

Oil waste should at all times be placed in a safe receptacle to avoid the danger of spontaneous combustion. Oil waste will decay, smolder, and in time burst into flame. Sawdust when soaked with oil drippings will do the same thing, and its use should be forbidden. Sand is a safe material to use as an absorbent of oil.

Another source of fires is the use of kerosene in lighting fires in the ordinary cooking or heating stove. Kerosene should never be poured in a stove in which there is a spark of fire; neither should it be used in a stove in which the fire is out, but in which parts of the stove are still warm. Neither should kerosene lamps be filled while lighted, a practice that is widely prevalent in country districts. Kerosene lamps with metal oil wells are safer than and are preferable to lamps with glass fonts.

##### DETAILED PRECAUTIONS CONCERNING THE HANDLING OF GASOLINE.

In establishments where benzene, gasoline, naphtha, and other inflammable liquids are used, care should be taken to see that the smallest practicable quantities are used, and that the liquids are handled in an approved



manner. No open light or flame of any kind, nor any machine or belt capable of producing a spark should be allowed in the room where the gasoline is being used. All shafting and machines with belts that are liable to cause a static electric spark should be well grounded.

Only incandescent electric lights should be used, and these should be provided with guards to prevent their being smashed.

All electric switches, fuses, etc., should be outside the room.

Danger signs should be posted on all doors opening into the room, warning against the carrying of open lights of any kind inside.

When large quantities of the inflammable liquids mentioned are used the main supply should be stored in a metal tank buried underground and a safe distance from buildings. The working supply should be pumped into the buildings as needed, and the system so arranged that when the pump is stopped all liquid in the pipes will flow back into the supply tank. When it is not possible to use a pump and a buried tank, the main supply should be stored outside and well away from other buildings, under lock and key. Only small quantities of working supplies should be taken into the building, closed metal cans, preferably safety cans, being used as containers.

When the use of an open can is necessary the opening should be as small as possible and a cover should be provided. The cover should be put on whenever the can is not in use.

Signs should be posted prohibiting an open flame near the place of storage or near a pump or other handling apparatus. The signs should explain the danger involved and give instructions for safe methods of operation.

Empty gasoline barrels should be stored with bungholes down, in safe places in the open air.

Rooms in which explosives or dangerous gases or vapors are used or generated should be safely inclosed, and should be provided with an improved system of ventilation.

Gasoline vapor is heavier than air, and a suction fan should be used to insure proper ventilation.

Joints in tanks, pipes, conveyors, etc., used for storage of explosive liquids, gases, or vapors should be kept tight.

Before work is done on vessels, pipes, etc., sufficient time should be given to allow gas to escape.

Special care should be exercised before work requiring the use of heat or flame is done. Apparatus that has contained explosive gas should be filled with water or steam to force out the gas.

#### A FEW TERSE DIRECTIONS.

Don't spill gasoline.

Don't fill the tank of the liquid-fuel stove full.

Don't use a liquid fuel stove that leaks.

Don't fill a gasoline stove in a closed room. Have plenty of ventilation to carry the vapor out of the room.

Don't use gasoline or naphtha for washing the hands.

#### EXTINGUISHING BURNING LIQUIDS.

There are two principal methods of extinguishing burning liquids, as follows:

1. To form a blanket of gas or solid material over the burning liquid and cut off the air (oxygen) supply.

2. To dilute the burning liquid with a non-

inflammable extinguishing agent that will mix with it.

Water may be used for extinguishing burning liquids, such as denatured alcohol, wood alcohol, and acetone, that are miscible with it. If such a liquid as gasoline, which is not miscible with water, catches fire, the application of water produces little or no effect except to spread the burning liquid, and thus scatter the fire over a larger area. However, the application of a large quantity of water to a small quantity of burning oil, by its cooling effect, may aid in extinguishing the fire.

Of materials used to form a blanket of gas or solid material over burning liquid, thus cutting off the oxygen supply, several are in common use. These include sawdust, sand, carbon tetrachloride, and the so-called foam or frothy mixtures.

The efficiency of sawdust is due to its floating for a time on the liquid and excluding the oxygen of the air. Sawdust itself is not easily ignitable, and when it does ignite burns without flame. The character of the sawdust and its moisture content is of little or no importance. It may be well handled for extinguishing small fires, when just started, by means of long-handled wooden shovels.

Sand probably serves about as well as sawdust for extinguishing fires on the ground, but is heavier and more awkward to handle. When thrown on a burning tank it sinks, whereas sawdust floats.

Carbon tetrachloride, the basis of various chemical fire extinguishers, if thrown on a fire forms a heavy noninflammable vapor over the liquid, and mixes readily with oils, waxes, japan, etc. The vapor is about five times as heavy as air. Much of the carbon tetrachloride contains impurities that give it a bad odor, but when pure its specific gravity is 1.632 at 32° F. When thrown on a fire, it produces black smoke, the hue of which is caused by unconsumed particles of carbon. Pungent gases are also produced, probably hydrochloric acid gas and small volumes of chlorine gas. Although the fumes are pungent, brief exposure to them does not cause permanent injury.

The efficacy of carbon tetrachloride depends largely on the skill of the user. If liquid in a tank is on fire, the height of the liquid is important. When the liquid is low, the sides of the tank form a wall which retains the vapor, but when a tank is nearly full of a highly volatile liquid like gasoline, only the most skilled operator can extinguish the fire.

For smothering some small fires of burning gasoline an ordinary blanket may be used.

#### USE OF FOAM OR A FROTHY LIQUID MIXTURE AS AN EXTINGUISHER.

Installations embracing the use of foam or frothy liquid mixtures to extinguish fires in large gasoline storage tanks originated in Germany. For such an extinguisher two liquids are caused to mix in a tank, whereupon foam is produced. The tank is made air-tight and sufficiently strong to permit the foam to be forced out under pressure of a gas (carbon dioxide) simultaneously generated. The frothy mixture owes its efficacy to its blanketing action in excluding air (oxygen) from the fire. It is stiff and shrinks only slightly in volume even after half an hour. In one installation used, bicarbonate of soda, and soap bark are used in one tank, and an acid in another tank. A fusible link, which will melt at 212° F., releases a hammer, which

breaks the glass tank containing the acid. The released acid is led through two perforated pipes into the solution, producing a violent ebullition of foam, which finds its way into the tank of burning oil.

The National Fire Protection Association has experimented with this and other methods of extinguishing fire. These experiments show the method to be promising.

In some large plants gasoline is continually stored under the pressure of noninflammable gas, as nitrogen or carbon dioxide. In other plants it is stored in a tank, which is always kept filled, no air being admitted at any time. The tank may be filled with all gasoline or part gasoline and part water, water being pumped into the tank to force out the gasoline, when desired. The water may be drained off when more gasoline is to be added to the tank.

#### Relation of Properties of Gasoline and Gasoline Vapor to Inflammability.

##### SOURCE OF GASOLINE.

Gasoline is a product obtained by distilling crude petroleum, and the different grades used for various purposes differ somewhat in chemical and physical properties. Some grades of gasoline, particularly the better grades used to drive automobiles, are much more hazardous to handle than are others. They mix with air in larger proportions and pass into the vapor form (evaporate) more rapidly, and hence more quickly render a given volume of air explosive than do the heavier grades, such as are used for cleaning purposes and for fuel in the engines of some motor trucks and other large internal-combustion engines.

##### ACTION OF GASOLINE VAPOR IN AIR.

Gasoline vapor mingles with air in the same manner that water vapor does. At any particular temperature a definite proportion of water vapor will be found in the atmosphere if it has become completely saturated, a condition that seldom exists. Usually a limited supply of water has been given off into the air, and the atmosphere is spoken of as having a certain relative humidity, meaning that the saturation is incomplete or that more water vapor could exist in the air were a source of moisture available. In a similar manner gasoline vapor mixes with air. The amount of vapor carried will depend on the temperature of the air and the readiness with which the vapor can be obtained.

If gasoline is exposed to the air of a room and for a long enough time, the air will contain at a certain temperature a fixed proportion of gasoline vapor, differing for different grades of gasoline, that can not be exceeded. The author has worked out the values for four different grades. The results for a temperature of 17.5° C. (63.5° F.) are shown in the following table:

Proportions of different grades of gasoline vapor that air will carry at a temperature of 17.5° C.	
Grade of gasoline.	Proportion of gasoline vapor (per cent.)
Cleaner s naphtha.....	5.0
64° B. gasoline.....	11.0
69° B. gasoline.....	15.0
73° B. gasoline.....	28.0

It will be noticed that air will hold almost six times as much vapor from the lighter gasoline as from the heavier cleaner's naphtha. If the lighter and better grades of gasoline are heated, their vapors, when a light is applied, also flash and burn at lower temperatures than do the heavier grades. This difference does not mean that some gasoline is a dangerous

inflammable liquid and some is not. All grades are classed as highly inflammable and dangerous liquids.

#### COMPARISON OF INFLAMMABILITY OF GASOLINE AND OF GASOLINE VAPOR.

If one takes the cover off a full pail of tightly inclosed gasoline and applies a match to the surface, the gasoline will flare up and burn as long as the gasoline lasts. On the other hand, if one puts a few drops of gasoline in a small tightly inclosed pail, waits a few minutes, and then introduces a flame or an electrical spark a violent explosion will most likely result. In the first case the vapor burns as fast as it comes from the gasoline, and mixes with the oxygen of the air. In the second case the oil vaporizes in the pail and mixes uniformly with the air therein to form an explosive mixture and upon ignition explodes. Consequently, when one hears of a disastrous gasoline explosion one may be sure that the explosion resulted from the mixing of the vapor from the gasoline with air in the proportions necessary to form an explosive mixture.

One gallon of gasoline when entirely vaporized produces about 32 cubic feet of vapor. If a lighted match could be applied to pure gasoline vapor in the absence of air no fire or explosion would result. Gasoline liquid or vapor, like any other combustible material, needs the oxygen of the air in order to burn.

#### EXPLOSIVE RANGE OF MIXTURES OF GASOLINE VAPOR AND AIR.

It is fortunate that gasoline vapor, like other gases and vapors, needs a certain proportion of air before an explosion can take place. The author found that in 100 parts by volume of air and gasoline, an explosion will not take place if there is less than 1.4 parts of gasoline vapor or more than six parts. In other words, the explosive range is between 1.4 and about six per cent of vapor. Flashes of flame will appear in mixtures containing considerably smaller and larger proportions of vapor, and considerable pressure will be developed, but propagation through the mixture will not take place.

Although the range of explosibility mentioned is narrow as compared to that of many other mixtures of combustible gases and air, yet the proportion of gasoline vapor representing the lower limit is small, and indicates the great importance of not allowing even a little gasoline to be exposed in a room, because of the small quantity of vapor needed to make an explosive mixture with all the air in the room. If one gallon of gasoline is allowed to change completely into vapor simply by exposing it to the room air, and if the room is gas-tight, the one gallon can render explosive 2,100 cubic feet of air, the amount contained in a room measuring 21 by 10 by 10 feet.

In the actual use of gasoline such conditions seldom exist. However, an assumed case may be that of a person filling an open pail from a larger tank or using gasoline for cleaning. When the pail is first filled with the gasoline, a small volume of pure gasoline vapor forms over the surface of the gasoline. Just above this layer of pure gasoline vapor is a mixture of vapor and air; at some point there will be an explosive proportion, and farther away from the pail there will be a small proportion of vapor, and finally still farther away no vapor at all, but pure air. However, all the time the user of the gasoline is at work the vapor keeps forming, from both the gasoline in the

pail and that applied to the object being cleaned, rendering more and more air inflammable or explosive, until finally there will exist a dangerous atmosphere that may completely surround him, so that a chance ignition will envelope him in flames and perhaps cause great damage to property. Ignition of the gasoline vapor may take place even some distance from the gasoline in a room adjoining the room in which the person works. As the gasoline evaporates, and more and more vapor is given off, it mixes with air farther and farther from the gasoline and, if the evaporation lasts long enough, may travel to an adjoining room, where it may be ignited. On ignition a sharp flash will travel back through the adjoining room to the room where the gasoline is.

During the five years ending with 1915 the Canal Zone fire departments attended 53 fires caused by explosives liquids. Of these, 13 were caused by gasoline, five by alcohol, 14 by kerosene stoves, 19 by kerosene lamps, and two from fumes in the fuel oil compartments of floating equipment. Six persons died as the result of burns received from those fires, and four were seriously injured.

Commenting on the above, the Acting Fire Inspector stated:

"While most buildings on the Canal Zone are so constructed that fumes from gasoline, alcohol, etc., are quickly carried away, still accidents are frequent enough to show that there is great danger in careless handling of them. The kerosene oil stoves sold by the Supply Department are safe and if directions in regard to keeping burners clean and operating them are followed, and if care is used in storing the oil, there should not be any accidents in connection with their use.

"Inflammable liquids should never be kept in open or leaky containers, nor should they be kept where children can have ready access to them."

#### Red Cross Finances.

The following is a statement of the receipts and expenditures of the Canal Zone chapter of the Red Cross, for the period from February 1 to April 30, 1916:

RECEIPTS.	
Balance on hand, January 31, 1916	\$5,222.72
Repayment of loan	10.00
Max Englander, for relief of Jews	2.00
Christmas seals	445.87
Proceeds from "Pirates of Pezance"	313.10
Membership dues	4.00
Refund from Singer Sewing Machine Company	5.00
Interest on checking balance	16.50
From Dr. Hearne, balance from amount advanced	15.00
Total receipts	\$6,034.19
DISBURSEMENTS.	
Individuals assisted	\$274.25
Tuberculosis Society	44.51
W. H. Baldwin, 1,000 buttons, Christmas seals	3.50
Commissary bill, Dr. Hearne's relief work	2.68
Collections for war sufferers, remitted	2.00
Star & Herald Company, notice, February 22 to 24	10.00
United Fruit Company, transportation	15.00
Printing	15.10
Bill 3695, pouch lost, Colon fire	1.65
Postage	3.66
Balance on hand, May 1, 1916	\$5,661.84
Total	\$6,034.19
R. W. GLAW, Acting Treasurer.	
Approved: FRANK FEUILLE, Chairman.	

#### DRY SEASON WATER SUPPLY.

Normal Yield from Watershed of Gatun Lake In Season of 1916.

Gatun Lake watershed practically yielded a normal amount of water during the recent dry season months of January to April, inclusive. In the period 1911-16, the era of Gatun Lake, the 1916 total was two per cent in excess of the average of this 6-year period, or 2,200 cubic feet per second against an expected 2,160 cubic feet per second.

In January it was necessary to waste slightly over two billion cubic feet; after January, inflow was exceeded by water usage and evaporation so that from January 1 to May 1 the lake was lowered from 86.45 to 86.02, with a loss of 1.95 billion cubic feet of storage. It is seen, therefore, that the yield was slightly over the dry season needs, if no water had been wasted by spilling. The number of lockages was low, owing to the Canal being closed to commercial shipping up to April 15.

The two billion cubic feet which were wasted over the spillway of Gatun Dam, after all the regular demands for water had been met, would have been sufficient to provide for approximately 330 double lockages, above those which actually were made during the period. A "double lockage" is the term used to denote the consumption of water in locking a vessel upward from one entrance channel and then downward to the other ocean. It is the water which must be drained out of the lake for the complete transit of a vessel (or for several vessels, in case two or more are handled through the chambers together) through the Canal. The amount of water actually used in lockages varies, but the estimated average consumption in a double lockage is approximately 6,000,000 cubic feet.

The principal section of Gatun Lake watershed dry season water production is the Chagres River above Alhajuela. In 1916 this section produced 28 per cent below its average yield, or 1,002 cubic feet per second against a 15-year dry season normal of 1,387 cubic feet per second.

#### Monument to Firemen Killed by Powder Magazine Explosion.

A monument commemorating the death of six members of the corps of firemen of Panama in the explosion of a powder magazine on May 5, 1914, was unveiled in the plaza on which the Panama Railroad station at Panama fronts, on Friday, May 5, the second anniversary of the explosion.

The monument is a triangular shaft, on a pedestal approached by short flights of six steps from three sides, and ornamented, at the base of the shaft, with figures representing a fireman, history, and fame, each facing outward at the points of the triangle. In the three spaces between the figures are a dedicatory tablet, a reproduction of the coat of arms of the firemen's brigade, and a list of the members who lost their lives as a result of the explosion. The shaft rises to a height of about 30 feet above the ground, and adds considerably to the appearance of the little park in which it stands. An account of the explosion was published in THE CANAL RECORD of May 6, 1914.

#### Civil Service Examination.

Information concerning the following examination has been posted at clubhouses and post-offices:

Superintendent of acid plants (male); \$6 per diem; examination June 21, 1916; No. 667.



## OFFICIAL CIRCULARS.

## Detail of Pilots for Duty as Lock Pilots.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., May 9, 1916.

## CIRCULAR No. 712:

1. Pilots will be detailed as found necessary for duty on all the locks of the Canal. They will report to the lock superintendents for duty and, while detailed as lock pilots, will constitute a part of the lock operating force.

2. The detail of lock pilots will be changed from time to time, as experience indicates to be to the best interests of the Canal, but in no case will more than one lock pilot at each lock be relieved at the same time.

3. The channel pilot on approaching a lock will comply with the signals as to the disposition of the vessel under his control and will be responsible for securing the ship alongside the approach wall, where the lock pilot will formally relieve him of the responsibilities of the ship. In case the lock force desires the ship to enter the first chamber without securing to the approach wall, it shall be the duty of the lock pilot to meet and formally relieve the channel pilot of the responsibilities of the ship before she comes abreast of the approach wall. In case the lock pilot finds conditions such that he does not deem it safe to relieve, the channel pilot will secure the ship to the approach wall.

4. After passing through a lock, the lock pilot will maneuver the ship until she is clear of the last gate and free of damage by the approach walls. If for any reason the channel pilot does not deem it safe to relieve, the lock pilot will make such disposition as is satisfactory to the channel pilot, who will then relieve.

5. In all cases not specifically covered by these instructions, the lock pilot's judgment will govern in taking over a vessel approaching the lock, and the channel pilot's judgment will govern in taking over a vessel after clearing the last gate.

Geo. W. Goethals,  
Governor.

## Terminal Construction Division Abolished.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., May 12, 1916.

## CIRCULAR No. 667-29:

On account of the practical completion of the work under it, the Terminal Construction Division will be abolished effective May 31, 1916. After that date the remaining construction forces and the inspection forces of contract work, at present under the supervision of the Engineer of Terminal Construction, will report to the Engineer of Maintenance.

Geo. W. Goethals,  
Governor.

## Commissary Books for Americans on Silver Roll.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., May 10, 1916.

## CIRCULAR No. 663-3:

Paragraph 17 of Circular No. 663-1 is hereby amended so as to give to American citizens on the silver roll the same privileges in the purchase of commissary books as are enjoyed by gold roll employees. That is, the restriction on amount of purchases for cash is removed, and it will not be necessary to present authorization card, P. C. 478, when making purchases.

Geo. W. Goethals,  
Governor.

## Regulations for Printing Official Publications.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 9, 1916.

## HEADS OF DEPARTMENTS AND DIVISIONS:

In order to insure uniformity in the style, size, etc., of Panama Canal and Panama Railroad publications and remedy the duplication of orders for same, all requisitions for printing such publications will be handled by the Executive Office.

The surplus stock of Panama Canal and Panama Railroad publications on the isthmus not required for immediate use will be kept in the document room of the Administration Building at Balboa Heights.

Geo. W. Goethals,  
Governor, The Panama Canal,  
President, the Panama Railroad Company.

## Sailings of Panama Railroad Vessels.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 16, 1916.

To all concerned—On account of the delayed departure from New York of the steamship *Cristobal*, the weekly sailing schedule of Panama Railroad boats has been interrupted. In order to reestablish and maintain the weekly schedule, which is of the utmost

importance, it has been decided to despatch the steamship *Advance* from Cristobal at 3 p. m., May 21, instead of May 25, as per printed schedule, and the steamship *Cristobal* will sail on the *Advance*'s schedule at 3 p. m., May 25. From thence on the *Advance* will take the *Cristobal*'s schedule on printed sailing list and the *Cristobal* will take the *Advance*'s schedule.

Reservations already arranged on these boats must stand, as it is impracticable to switch reservations from one boat to the other at this time. The effective dates of leaves of absence arranged for the *Advance*, May 25, will be changed accordingly.

Geo. W. Goethals,  
Governor, The Panama Canal,  
President, Panama Railroad Company.

## Acting Collector.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 13, 1916.

To all concerned—Effective May 13 and during the absence on leave of Mr. T. L. Clear, Collector, Mr. E. P. Pine, deputy collector, will act as Collector of The Panama Canal.

Geo. W. Goethals,  
Governor.

## Acting Member of Board of Admeasures.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 8, 1916.

To all concerned—Effective May 4, 1916, during the absence on leave of Lieutenant A. B. Reed, U. S. Navy, Mr. Charles Svensson will be acting member, Board of Admeasures.

H. I. Cone,  
Chairman, Board of Admeasures.

Approved:  
Geo. W. Goethals,  
Governor.

## Peruvian Line Grants Canal and Railroad Employees Reduced Rates.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 8, 1916.

To all concerned—Effective this date, the employees of The Panama Canal and Panama Railroad Company will be granted a reduction of 33 1/3 per cent from the passenger tariff rates of the Compania Peruana de Vapores y Dique.

This steamship line has a sailing approximately once a week between the Isthmus, Guayaquil, Ecuador, and Peruvian ports, and is represented on the Isthmus by the Panama Agencies Company, Panama.

W. P. Copeland,  
Acting Executive Secretary.

## Sailings on "Cristobal" and "Advance" in June.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 17, 1916.

To all concerned—On account of the changes in the sailing dates of the Panama Railroad steamers *Advance* and *Cristobal* to June 15 and June 22, 1916, respectively, from Cristobal to New York, employees, who have already forwarded their applications to this office for transportation on the *Cristobal*, which was originally scheduled to sail on June 15, will be considered as desiring transportation on the *Cristobal* June 22, unless this office is advised that transportation is desired for the *Advance* sailing June 15. The effective dates of the leaves of absence will be changed accordingly.

W. P. Copeland,  
Acting Executive Secretary.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., May 16, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be procured upon request of the addressees. Requests may be made by telephone, calling No. 182, Balboa:

Adkins, William W. McCallum, C. M.  
Agosto, Manuel Mesche, J. A.  
Ammon, August Miller, John B.  
Archer, Fred Monahan, James  
Barbough, F. Morgan, Alexander  
Barloff, S. Murphy, Derry  
Barnett, Harry J. Nells, W. H.  
Benton, Mrs. S. V. Olsen, A.  
Beverly, Margaret Phillips, Major John K.  
Breth, I. W. Richards, John A.  
Deel, George Robinson, J. B.  
Fernandez, F. E. Sargent, D. C.  
Hagan, J. M. Sherrill, G. G.  
Hamilton, John Whittine, Frank J.  
Heady, Burr Watkins, William  
Johnson, Ebert Wadkins, William  
Lawson, John S. Warris, Mrs. Pauline  
Lewis, Elmer L. Wheeling, G. R.

## COMMISSARY DEPARTMENT.

## Difficulty in Obtaining Commissary Supplies.

Considerable difficulty is being experienced by the commissary branch of the Supply Department in obtaining several classes of staple articles required in the daily life of the Canal employees.

The chief difficulty encountered is to obtain articles in which dye is a factor. As an instance of this a letter recently received from the commissary purchasing agent at New York is quoted:

"To give an idea of the conditions of the stockings market, please refer to your requisition dated March 22, 1916, calling for children's socks. Although circular proposal was sent to 27 concerns handling stockings, we did not receive a bid."

Every effort is being made to maintain an adequate stock of all articles usually carried by the commissaries, but in these abnormal times this is a very difficult thing to do.

Another source of trouble in securing supplies is the embargo declared on all export shipments (with the exception of foodstuffs) by the railroads handling export freight. This difficulty is being somewhat overcome by anticipating requirements for a longer period of time.

## Price Changes.

The following changes in prices of stock at the commissary stores became effective April 28:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Bags, penknife, ea.	\$0.06	\$0.05
Coolers, water, ea.	1.05	1.20
Cups and saucers, set.	.20	.21
Bottles, vacuum, ea.	1.15	1.75
Bottles, vacuum, ea.	2.20	2.50
Dishes, olive, ea.	1.10	1.40
Hooks, cup, 1 1/2", doz.	.07	.12
Hooks, cup, 1 1/2", doz.	.14	.19
Irons, electric, ea.	2.65	2.90
Lines, clothes, ea.	.20	.24
Pans, pudding, aluminum, ea.	.42	.49
Pans, pudding, aluminum, ea.	.51	.60
Pans, sauce, ea.	1.15	1.40
Saws, ea.	1.40	1.05
Stoves, N. P., ea.	4.90	5.40
Strainers, tea, ea.	.03	.02
Wicks, ea.	.03	.04
Wicks, ea.	.15	.17

The following have become effective with retail hardware price list No. 3, i. e., May 15, 1916:

Cups and saucers, set.	2.05	2.20
Platters, meat, 14", ea.	6.40	6.40
Platters, meat, 16", ea.	9.00	9.60
Platters, meat, ea.	.03	.08
Biggins, coffee, ea.	.44	.67
Percolators, ea.	1.00	1.18

## Additions to Stock.

Alcohol, solid, for Rockburn stove, tin.	\$0.07
Boats, gravity, with fast stand, ea.	.72
Cups, egg, single, ea.	.03
Cups and saucers, after dinner, set.	.13
Cups and saucers, tea, set.	.14
Cups and saucers, breakfast, set.	.16
Dishes, bakers, 8", ea.	.16
Dishes, bakers, 10", ea.	.29
Dishes, vegetable, 7", ea.	.77
Dishes, butter, covered, ea.	.58
Dishes, oatmeal, ea.	.10
Dishes, pickle, ea.	.09
Dishes, fruit, 5", ea.	.05
Jugs, cream, 42s, ea.	.19
Bowls, sugar, 30s, ea.	.38
Plates, bread and butter, ea.	.06
Plates, dessert, ea.	.07
Plates, breakfast, ea.	.09
Plates, dinner, ea.	.10
Plates, soup, coupe, ea.	.40
Platters, meat, 12", ea.	.16
Platters, meat, 16", ea.	.48
Platters, chop, 12", ea.	.48
Pots, tea, 24s, ea.	.09
Canoes with keel, 16", ea.	39.50
Canoes with keel, 18", ea.	4.50
Canoes with keel, 18", ea.	47.60
Paddles, canoe, 5", ea.	1.00
Paddles, canoe, 5 1/2", ea.	1.00
Paddles, canoe, 6", ea.	1.00
Sails and masts, complete, for 18" canoe, set.	9.60
Leatherboards, canoe, complete, set.	6.60
Chairs, canoe, folding, ea.	2.50



Cloth, novelty wash goods, yd.	\$0.37
Cream, Woodbury's facial, tube	.20
Curtain, scrim, yd.	.49
Curtain, scrim, yd.	.49
Embroidery, stickier brand, 6-yard piece	.22
Embroidery, yd.	.04
Embroidery, yd.	.08
Embroidery, yd.	.12
Embroidery, stickier brand, 6-yard piece	.08
Hose, ladies' white, Onyx, pr.	.45
Hose, ladies' black, Onyx, pr.	.45
Nainsook, yd.	.15
Nedles, pkg.	.03
Serge, blue, yd.	1.50
Voile, marquisette, yd.	.24
Voile, seeded, yd.	.22
Voile, striped, yd.	.23
Voile, marquisette, yd.	.44
Voile, fancy, yd.	.22
Cases, card, leather, men's, ea.	.07
Pads, heel, cork, pair	.07
Shoes, children's, gun metal, buttoned, pr.	2.00
Bumps, white canvas, misses, pr.	1.05
Pats, cricket, each	4.00
Cats, rain, ea.	4.80
Crepe de chine, black, yd.	1.65
Paper, crepe, white, roll	.07
Paper, crepe, green, roll	.07
Paper, crepe, purple, roll	.10
Paper, crepe, red, roll	.10
Ribbons, fancy, yd.	.23
Bowls, sugar, cut glass, ea.	1.55

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal and Pedro Miguel stores are open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold department of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## Launch Service to Taboga.

Effective May 15, the following is the schedule of the launch service between Balboa and Taboga Island:

*From Balboa to Taboga*—The launch *Taboga* sails from Balboa dredge landing to Taboga daily, including Sundays, at 9.40 a. m. On Saturdays, Sundays, and holidays an additional trip is made at 5.30 p. m.

*From Taboga Island to Balboa*—Daily, including Sundays, at 10.45 a. m.; Saturdays, Sundays, and holidays, an additional trip at 7 p. m.

The rates at the Hotel Aspinwall are as follows:

	Per day.
Employees	\$2.00
Nonemployees	2.50
Children under 12 years of age	1.00
(Babies under 12 months free of charge.)	
Servants	1.00
Employees' rate for stay of 14 days or over	1.75
Launch tickets are sold only at the dredge landing at Balboa and at the office of the Hotel Aspinwall.	

## Sailings of Vessels in Regular Service with the United States.

Vessel.	Line.	Sails.	Arrives.
<i>Santa Maria</i>	U. F. C.	May 10	May 17
<i>Advance</i>	P. R. R.	May 11	May 18
<i>Metapan</i>	U. F. C.	May 13	May 22
<i>Almirante</i>	U. F. C.	May 17	May 24
<i>Panama</i>	P. R. R.	May 18	May 24
<i>Pastores</i>	U. F. C.	May 20	May 28
<i>Zacapa</i>	U. F. C.	May 24	May 31
<i>Alfama</i>	P. R. R.	May 25	May 31

Vessel.	Line.	Sails.	Arrives.
<i>Carrillo</i>	U. F. C.	May 18	May 25
<i>Advance</i>	P. R. R.	May 21	May 28
<i>Cristobal</i>	P. R. R.	May 25	June 1
<i>Tenadores</i>	U. F. C.	May 22	May 29
<i>Advance</i>	P. R. R.	May 25	June 1
<i>Santa Maria</i>	U. F. C.	May 25	June 1
<i>Metapan</i>	U. F. C.	May 29	June 6
<i>Panama</i>	P. R. R.	June 1	June 7

Vessel.	Line.	Sails.	Arrives.
<i>Heredia</i>	U. F. C.	May 13	May 20
<i>Abongares</i>	U. F. C.	May 17	May 22
<i>Turrialba</i>	U. F. C.	May 20	May 27
<i>Parismina</i>	U. F. C.	May 24	May 29
<i>Atenas</i>	U. F. C.	May 27	June 3
<i>Carlosgo</i>	U. F. C.	May 31	June 7
<i>Carlosgo</i>	U. F. C.	May 21	May 26
<i>Heredia</i>	U. F. C.	May 21	May 29
<i>Abongares</i>	U. F. C.	May 28	June 2
<i>Turrialba</i>	U. F. C.	May 28	June 5
<i>Parismina</i>	U. F. C.	June 4	June 9
<i>Atenas</i>	U. F. C.	June 4	June 12

## SHIPPING INFORMATION.

## Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions for the period until July 1 are given in this table:

MAY.				
DATE.	Time and height of high and low water.			
Wed., May 17	3:15	9:31	15:27	22:00
	15.0	0.6	16.2	-0.8
Thurs., May 18	4:01	10:16	16:14	22:44
	15.6	0.1	16.5	-1.3
Fri., May 19	4:49	11:01	17:02	23:28
	15.9	-0.1	16.6	-1.3
Sat., May 20	5:39	11:46	17:52	
	16.0	0.0	16.3	
Sun., May 21	6:15	6:30	12:36	18:44
	-0.9	15.8	0.5	15.7
Mon., May 22	1:05	7:21	13:30	19:37
	-0.3	15.4	1.3	14.9
Tues., May 23	2:00	8:16	14:31	20:35
	0.6	14.8	2.0	13.9
Wed., May 24	3:00	9:15	15:38	21:40
	1.5	14.2	2.6	13.1
Thurs., May 25	4:04	10:21	16:45	22:54
	2.2	13.8	2.8	12.6
Fri., May 26	5:08	11:28	17:49	
	2.7	13.7	2.8	
Sat., May 27	6:07	6:11	12:32	18:50
	12.5	2.9	13.7	2.5
Sun., May 28	1:10	7:10	13:25	19:45
	12.8	2.9	14.0	2.0
Mon., May 29	2:01	8:03	14:12	20:33
	13.1	2.6	14.2	1.5
Thurs., May 30	2:46	8:51	14:54	21:16
	13.5	2.3	14.4	1.1
Wed., May 31	3:27	9:33	15:33	21:56
	13.7	2.0	14.4	0.9

## JUNE.

DATE.	Time and height of high and low water.			
Thurs., June 1	4:07	10:13	16:12	22:33
	13.8	1.9	14.4	0.8
Fri., June 2	4:46	10:50	16:50	23:09
	13.8	1.9	14.3	0.9
Sat., June 3	5:24	11:27	17:28	23:46
	13.8	2.2	14.1	1.2
Sun., June 4	6:01	12:04	18:05	
	13.6	2.6	13.7	
Mon., June 5	6:22	6:33	12:43	18:42
	1.6	13.3	3.0	13.3
Tues., June 6	1:00	7:15	13:24	19:21
	2.2	13.1	3.5	12.8
Wed., June 7	1:40	7:52	14:12	20:00
	2.8	12.8	4.0	12.0
Thurs., June 8	2:26	8:34	15:06	20:48
	3.4	12.5	4.2	11.8
Fri., June 9	3:17	9:23	16:05	21:47
	3.8	12.4	4.2	11.5
Sat., June 10	4:15	10:22	17:06	22:58
	4.1	12.5	3.9	11.6
Sun., June 11	5:16	11:25	18:07	
	4.0	12.9	3.3	
Mon., June 12	6:06	6:19	12:29	19:05
	12.0	3.6	13.5	2.5
Tues., June 13	1:07	7:20	13:24	20:01
	12.8	2.9	14.4	1.4
Wed., June 14	2:00	8:17	14:15	20:53
	13.8	2.0	15.2	0.2
Thurs., June 15	2:53	9:10	15:06	21:43
	14.7	1.0	16.0	-0.7
Fri., June 16	3:44	9:59	15:58	22:29
	15.5	0.2	16.5	-1.4
Sat., June 17	4:36	10:46	16:50	23:15
	16.1	-0.3	16.7	-1.7
Sun., June 18	5:27	11:32	17:43	
	16.5	-0.4	16.6	
Mon., June 19	6:01	6:19	12:24	18:34
	-1.5	16.6	-0.1	16.1

DATE.	Time and height of high and low water.			
Tues., June 20	0:50	7:09	13:16	19:25
	-1.0	16.3	0.4	15.4
Wed., June 21	1:40	8:00	14:12	20:17
	-0.1	15.7	1.2	14.5
Thurs., June 22	2:35	8:50	15:10	21:13
	1.0	15.0	1.9	13.4
Fri., June 23	3:33	9:46	16:12	22:18
	2.1	14.1	2.6	12.6
Sat., June 24	4:33	10:49	17:13	23:29
	3.0	13.4	3.0	12.0
Sun., June 25	5:35	11:55	18:15	
	3.6	13.1	3.1	
Mon., June 26	6:39	6:42	12:55	19:16
	12.0	3.8	13.0	3.0
Tues., June 27	1:33	7:37	13:48	20:10
	12.1	3.7	13.1	2.6
Wed., June 28	2:28	8:29	14:34	20:57
	12.5	3.4	13.4	2.1
Thurs., June 29	3:12	9:14	15:17	21:39
	12.9	2.9	13.6	1.6
Fri., June 30	3:53	9:56	15:56	22:17
	13.2	2.5	13.9	1.2

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Rainfall from May 1 to 13, 1916, inclusive.

STATIONS		Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>				
Balboa	Inch.	1.90	9	4.06
Balboa Heights	2.13	9	4.01	
Miraflores	1.12	5	2.01	
Pedro Miguel	1.30	5	1.85	
Rio Grande	.99	5	2.16	
<i>Central Section—</i>				
Culebra	.80	13	1.91	
Camacho	1.34	13	2.53	
Empire	.91	13	2.12	
Camboa	1.60	13	3.68	
Juan Mina	.57	5	2.18	
Alhajuela	2.52	13	3.43	
Vigia	1.57	13	3.11	
Prijoles	1.27	12	3.44	
Trinidad	1.64	13	5.19	
Monte Lirio	.49	9	1.81	
<i>Atlantic Section—</i>				
Gatun	1.35	13	2.34	
Craboe Brook	2.00	12	4.18	
Colon	1.95	22	3.30	

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values, midnight to midnight.

## Maximum Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, May 13, 1916:

STATIONS.		DAY AND DATE.			
	Vigia	Alhajuela	Camboa	Gatun Lake	Miraflores Lake
Sun., May 7	125.60	92.25	86.18	86.04	54.20
Mon., May 8	125.60	91.92	86.12	86.05	53.97
Tues., May 9	130.30	95.36	86.19	86.12	54.15
Wed., May 10	128.83	95.10	86.06	86.20	53.95
Thurs., May 11	125.55	91.93	86.12	86.20	54.10
Fri., May 12	127.00	91.70	86.18	86.21	53.90
Sat., May 13	133.00	97.55	86.27	86.22	53.91

Heights of low water to nearest foot.

125.0

91.0

## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., May 14, 1916.)

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
May 8	<i>Florentino</i> .....	British	Polzeath Steamship Company...	Newport, England...	Taitai.....	Coal.....	4,606	3,859	2,833
May 8	<i>Skipion Castle</i> .....	British	Lancashire Shipping Co., Ltd....	New York.....	Manila.....	General.....	57 00	4,634	3,481
May 9	<i>Challion Hall</i> .....	American	U. S. Steel Products Co.....	New York.....	Vladivostok.....	General.....	69 00	5,593	4,217
May 9	<i>Huasco</i> .....	Chilean	South American S. S. Co.....	Cristobal.....	Valparaiso.....	General.....	2,200	4,563	3,121
May 9	<i>Ucayali</i> .....	Peruvian	Peruvian Steamship Line.....	Cristobal.....	Callao.....	General.....	1,207	4,278	2,206
May 9	<i>Wakasa Maru</i> .....	Japanese	Nippon Yusen Kabushiki Kaisha..	New York.....	Honolulu.....	General.....	5,300	6,265	4,236
May 11	<i>Nissei Maru</i> .....	Japanese	Okazaki Kisen Kabushiki K. A....	New Orleans.....	Antofagasta.....	Ballast.....	7,500	6,326	2,319
May 11	<i>City of Naples</i> .....	British	Norton Lilly & Company.....	New York.....	Vladivostok.....	General.....	5,200	6,335	4,718
May 11	<i>Ellen</i> .....	Norwegian	Acties Drak. E. C. & S. S. S. Line	New York.....	Vladivostok.....	General.....	4,000	2,673	1,788
May 12	<i>Erulus</i> (collier).....	American	United States Navy.....	Norfolk.....	San Francisco.....	Coal.....	2,068	2,176	1,405
May 13	<i>General Hubbard</i> .....	American	Hubbard Steamship Company.....	Norfolk.....	Gatico, Chile.....	Coke.....	6,700	5,004	3,746
May 13	<i>Pacific</i> .....	British	W. H. Cockleline & Company.....	Norfolk.....	Vladivostok.....	General.....	7,552	5,605	2,626
May 13	<i>Kim</i> .....	Norwegian	Norwegian.....	Norfolk.....	Iquique.....	Ballast.....	1,554	4,038	2,626
May 13	<i>Peru</i> .....	British	Pacific Steam Nav. Co.....	Cristobal.....	Valparaiso.....	General.....	1,024	1,557	998
May 13	<i>Cauca</i> .....	British	Pacific Steam Nav. Co.....	Cristobal.....	Guayaquil.....	General.....			

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

May 7	<i>Artisan</i> .....	American	American-Hawaiian S. S. Co....	Antofagasta.....	Delaware B'kw'r.	Nitrates.....	8,750	6,173	4,329
May 7	<i>Hackensack</i> .....	British	Brown, Jenkins & Co.....	Iquique.....	Norfolk.....	Nitrates.....	5,800	4,203	2,780
May 7	<i>Bellgrano</i> .....	British	Bellgrano S. S. Co.....	Iquique.....	Norfolk.....	Nitrates.....	6,922	5,102	3,587
May 8	<i>Ikamo Maru</i> .....	Japanese	Nakamura Shokai.....	Maji.....	New York.....	General.....	1,800	3,123	2,302
May 8	<i>Chipato</i> .....	British	New York & Pacific S. S. Co....	Talcahuano.....	Norfolk.....	Nitrates.....	9,340	7,067	5,236
May 8	<i>Crown</i> .....	British	Liverpool S. S. Co.....	Mejillones.....	Colon for orders.....	Nitrates.....	6,878	5,192	4,097
May 9	<i>Jaenico</i> .....	British	Pacific Steam Nav. Co.....	Tumara.....	Colon.....	General.....	379	1,170	620
May 9	<i>Imperial</i> .....	Chilean	South American S. S. Co.....	Talcahuano.....	Colon.....	General.....	1,385	3,021	2,397
May 10	<i>Challonge</i> .....	Peruvian	Peruvian Steamship Line.....	Callao.....	Colon.....	General.....	2,753	4,538	2,430
May 10	<i>Calliope</i> .....	British	Gladstone & Co.....	Wellington.....	Colon for orders.....	General.....	2,500	4,194	3,107
May 12	<i>River Forth</i> .....	British	River Forth S. S. Co.....	Mejillones.....	Colon for orders.....	Nitrates.....	6,783	4,852	3,647
May 12	<i>Kentuckia</i> .....	American	American-Hawaiian S. S. Co....	Salta Coloso.....	Baltimore.....	Nitrates.....	8,490	7,041	4,891
May 12	<i>San Ramon</i> .....	American	E. J. Dodge Company.....	Mazatlan.....	Colon.....	Tobacco, dyewood	1,025	1,140	738
May 12	<i>Bertrand</i> .....	British	Turnbull Brothers.....	Mejillones.....	Norfolk.....	Nitrates.....	5,900	4,388	3,385
May 13	<i>Good Hope</i> .....	British	Houlder, Middleton S. S. Co....	Taitai.....	Port Vendres.....	Nitrates.....	6,000	3,722	2,697
May 13	<i>California</i> .....	American	John Hooper.....	Iquique.....	Colon for orders.....	Nitrates.....	10,800	8,073	6,047

ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

May 13...	<i>John A. Hooper</i> ...	Sudden & Christensen.....	Baltimore.						
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PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
May 8	<i>Conway</i> .....	Royal Mail S. P. Co.....	London.	May 8	<i>Engineer</i> .....	Harrison Line.....	Galveston.
May 9	<i>Perou</i> .....	French Steamship Line.....	St. Nazaire.	May 12	<i>Buenos Aires</i> .....	Spanish Line.....	Barcelona.
May 10	<i>Buenos Aires</i> .....	Spanish Steamship Line.....	Barcelona.	May 13	<i>Perou</i> .....	French Line.....	St. Nazaire.
May 11	<i>Siskiyau</i> .....	E. K. Wood Lumber Co.....	New Orleans.				
May 13	<i>Scythian</i> .....	Leyland Line.....	Liverpool.				
May 14	<i>Columbia</i> .....	Adolph Halvorsen.....	Philadelphia.				

\*EXPECTED ARRIVALS.

\*EXPECTED DEPARTURES.

May 20	<i>Corina</i> .....	Elders & Fyffes.....	Port Limon.	May 20	<i>Carina</i> .....	Elders & Fyffes.....	Bristol.
					<i>Siskiyau</i> .....	E. K. Wood Lumber Co.....	
					<i>Scythian</i> .....	Leyland Line.....	

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

PORT OF BALBOA.

EXPECTED ARRIVALS FROM PACIFIC.

May 14	<i>Baron Ogilvy</i> .....	Hogarth Shipping Co.....	Newcastle.	May 17	<i>Heracles</i> .....	Bruusgaard Klosterud.....	San Francisco.
May 15	<i>Mary Parks</i> .....	Parks Steamship Co.....	So. Pacific ports.	May 18	<i>Suecia</i> .....	Johnson Line.....	San Francisco.
May 15	<i>Ayzen</i> .....	South American S. S. Co.....	Cent. Amer. ports	May 20	<i>La Primera</i> .....	Standard Oil Co.....	San Francisco.
May 15	<i>Acajula</i> .....	Pacific Steam Nav. Co.....	Cent. Amer. ports	May 20	<i>Birkhall</i> .....	West Hartlepool S. N. Co....	
May 15	<i>Tricolor</i> .....	W. Wilhelmsens.....	Mejillones.	May 20	<i>Oysteric</i> .....	Johnson Line.....	
May 15	<i>Guernsey</i> .....	W. Wilhelmsens.....	Mejillones.	May 21	<i>Crown of Toledo</i> .....	Crown Steamship Co.....	
May 15	<i>Hesperos</i> .....	Bruusgaard Klosterud.....	Chilean ports.	May 24	<i>Palena</i> .....	South American S. S. Co....	
May 15	<i>Anglo-Australian</i> .....	Nitrate Producers S. S. Co....		May 25	<i>British Yeoman</i> .....		

\*ARRIVALS.

\*DEPARTURES.

May 11	<i>Los Angeles</i> .....	Union Oil Company.....	Port San Luis.	May 13	<i>Los Angeles</i> .....	Union Oil Company.....	Port San Luis.
May 13	<i>Alicia</i> .....	Panama Trans. & Trad. Co.	Camp Sabbath.	May 13	<i>Guardian</i> .....	Cent. & So. Amer. Tel. Co....	High seas.
May 13	<i>Guardian</i> .....	Cent. & So. Amer. Tel. Co....	Callao.				
May 13	<i>Anjo Maru</i> .....	Toyo Kisen Kai, Kabushiki	Hongkong.				

\*EXPECTED DEPARTURES.

May 15	<i>Anjo Maru</i> .....	Toyo Kisen Kabushiki K....	Colonel.				
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\*Other than ships passing through the Canal.





## The Canal Record

Official publication of The Panama Canal. The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

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Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

Traffic through the Canal since Its Reopening.

In the first month following the reopening of the Canal, that is, from April 15 to May 14, inclusive, the total number of oceangoing ships which made the transit was 137. Some of these, however, had arrived prior to the opening of the Canal and were waiting at the ports. Bills for five ships from the Atlantic and for 11 ships from the Pacific were issued before April 15. If these be deducted, the number arriving and entering during the month was 122.

This was more than used the Canal during any of the seven months directly following its opening on August 15, 1914; but it is less than made the transit in any month after the seventh (February, 1915), with the exception of September, 1915, in about the middle of which traffic was cut off by the slides. The greatest number of ships making the transit in any month up to March, 1915, was 100. From March to August, inclusive, the least number for any month was 119, and the greatest was 170. The average per month for the year from September 1, 1914, to September 1, 1915, was 116½.

In the period of 22 days from May 1 to the close of business on Monday, May 22, the ships which entered the Canal for transit from the Pacific numbered 37, on which the tolls amounted to \$120,149.26. The number from the Atlantic was 51, with tolls amounting to \$157,174.97. The total traffic was 88 ships, paying \$277,324.23. This has been an aver-

age of four ships per day during the current month.

The "Tricolor" Makes First Trip through Canal.

The Norwegian steamship *Tricolor*, which has been plying up and down the west coast, between the Puget Sound ports and Valparaiso in the service of W. R. Grace & Company, made her first trip through the Canal this week. She entered from the Pacific on May 22, moored at the Paraiso station, and completed the transit on Tuesday, May 23. On this trip she is carrying a cargo of nitrates from Antofagasta to Archangel.

Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, May 22, amounted to 267,870 cubic yards. In addition, 6,153 cubic yards were removed from other parts of the Cut in miscellaneous maintenance work. Spoil amounting to 45,001 cubic yards was rehandled by dredges in the course of disposing of it, but this is not reported as primary excavation; rehandling is part of the work of disposal, like hauling in barges to the dumping grounds, but primary excavation represents so much material taken out of the prism.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	78,465
Gumbao.....	15-yard dipper.....	64,495
Paraiso.....	15-yard dipper.....	12,290
Coroal.....	Ladder.....	26,300
No. 83.....	Pipeline suction.....	6,158
Culebra.....	Seagoing suction.....	9,420
No. 86.....	Pipeline suction.....	42,251
No. 84.....	Pipeline suction.....	6,900
No. 5.....	Belgian ladder.....	2,750

The aggregate of primary excavation from the bases of the Culebra slides since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the hour of midnight on May 22, 1916, has amounted to 13,952,559 cubic yards. This has been an average of 724,771 cubic yards per month.

In the current fiscal year, beginning with July 1, 1915, the total primary excavation from the Cut has amounted to 9,828,181 cubic yards up to midnight of May 22. This has been an average of 30,053 cubic yards per day.

#### Ice from New Plant Being Used.

The new ice plant at Balboa, which was placed in operation on May 11 for a test of about two weeks, prior to its going into regular service, has been turning out about 50 tons of ice a day. This is turned over to the Supply Department for disposal. It is expected that the tests will be completed within a few days. When the plant goes into regular service the bulk of the production will be transferred to it from the Cristobal plant, which has been working above capacity for months past. The Cristobal plant has a rated capacity of 100 tons in 24 hours,

and the Balboa plant has a rated capacity of 100 tons for the same period.

Flat Rate Charges for Electrical Appliances.

The Governor has approved the Electrical Engineer's recommendation that the flat rate charges for electrical appliances be revised effective June 1, 1916, in accordance with the following schedule:

Item.	Charge per month
Chafing dish.....	\$0.25
Fans, ceiling, 52".....	.50
Fans, desk, 9" and 12".....	.25
Fans, desk, 16".....	.50
Grill, radiant (toaster stove), 550-watts.....	.35
Irons, curling.....	.25
Irons, flat, 3-lb. (small).....	.25
Irons, flat, 6-lb. (ordinary size).....	.35
Irons, soldering (ordinary).....	.25
Motors, up to and including 1-HP for use on grinders, polishers, sewing machines, vibrators, etc.....	.25
Motors, 1-HP and larger, a special rate will be made in each case, depending on conditions of use.....	.25
Percolators, coffee.....	.25
Ranges, 1,000-watts and above, meter rate.....	.25
Stoves, disc (hot plates), 550-watts.....	.25
Stoves, disc (hot plates), 1,000-watts.....	.35
Stoves, radiant, 550-watts.....	.35
Toasters, 550-watts.....	.25

Persons applying for use of such appliances must state carefully the kind of appliance, size, etc., when requesting their installation. The Electrical Division does not have these appliances for sale, but will install them in quarters upon written request of employees, making a monthly charge for current as shown. There is no charge for installation. Requests should be addressed to the Electrical Engineer, Balboa Heights.

#### New Signal Station on Sosa Hill in Use.

The new signal station on top of Sosa Hill, overlooking the Pacific entrance channel, has been placed in service. It commands an unobstructed view of the channel from Miraflores Locks to deep water and by reason of its situation on the skyline and its distinctive coloring of white with a bright red roof may be observed from a considerable distance when the air is clear. The station is connected by a special telephone line with the signal station on Perico Island, near the outer limit of the harbor, and with the office of the Captain of the Port at Balboa. It has also connection with the transisthmian telephone system of The Panama Canal.

The new station is serving as a lookout tower, in place of the old platform on top of the Panama Railroad terminal building at the steel pier. With air and wind favorable it can read the ships' signal flag designations while they are as much as an hour and a half out from the inner harbor.

The former dredge *Caribbean*, which is being converted into a cattle shed, was taken to the Cristobal dry dock on Tuesday, May 23, for the sealing of hoppers and installation of certain piping, and other machine work.



## LABOR FORCE AND QUARTERS.

## Distribution of Canal and Railroad Force, and Summary of Occupation of Quarters.

The total force for the half-month ending Wednesday, April 26, for The Panama Canal, the Panama Railroad, and contractors on the Isthmus amounted to 23,641. This is a decrease of 1,459 from the 25,100 employed on March 22, and a decrease of 725 from the 24,366 employed on February 23. It is, however, 1,726 more than the 21,915 employed on December 23, 1915, which was the least number that had been engaged on the Canal and railroad work since 1906.

The working force for the last half-month of April, 1916, was 1,174 less than the force reported for the latter part of April in the preceding year, which was 24,815. It was 8,053 less than the 31,694 employed two years ago (force report of April 29, 1914), and 20,551 less than the 44,192 employed at the end of April, 1913. The largest force ever reported

was that for March, 1913; it was 44,733.

Aside from the Panama Railroad, employing 4,163 persons on the Isthmus, the departments or divisions of The Panama Canal employing over 2,000 at the end of April were the Division of Municipal Engineering, the Division of Terminal Construction, the Dredging Division, and the Mechanical Division; while the Supply Department, operating separate commissaries, subsistence, and quartermaster branches, employed a total of 4,274, of which 1,893 were in the quartermaster branch and 1,895 in the commissary branch. Contractors employed 107 men.

A summary of the force report for the half-month ending on April 26, and of the occupation of Panama Canal and Panama Railroad quarters on the Isthmus on April 30, is given herewith. The occupants of quarters on April 30, 1913, were: Gold, 5,622 men, 1,944 women, and 1,966 children; Europeans, 4,165 men, 174 women, 285 children; West Indians, 6,979 men, 958 women, 1,341 men:

DEPARTMENT OR DIVISION.	SILVER EMPLOYES*													Total silver.	Total gold.	Grand total.
	Artisans.						Laborers.									
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Europe- an 10 cents.	13 cents.	10 cents.	7 cents.	5 cents.				
Operation and Main- tenance: locks & office	480		4	23	30	12	23	2	9	44			627	173	800	
Terminal Construc- tion Building	345	3	57	190	510	83		54	190	473	4	12	1,937	237	2,174	
Electrical	79		299	321	269	20		1	160	111	4	3	1,276	183	1,459	
Municipal Eng.	81		30	45	128	100							387	176	563	
Dredging	304		47	176	287	174	67	1	228	867	14	36	2,201	89	2,290	
Mechanical	1,888	1	12	14	155	45		5	136	28		2	2,309	340	2,649	
Marine	143	8	75	129	602	593		14	86	160	9	8	1,827	817	2,644	
Fortifications	178												178	60	238	
General Constructi- on	51		25	43	86	11	2	1	82	5	2	346	57	403		
	5				4			1	10	50	1	1	73	2	75	
Total	3,549	15	559	971	2,071	1,039	92	77	907	1,776	32	73	11,161	2,134	13,295	
Supply: main office														11	11	
Commissary	1,024		4	5	18	14	374			257	16	1	1,716	179	1,895	
Subsistence	400			3		2							467	17	486	
Quartermaster	770	34	63	64	59				157	643	1	5	1,816	77	1,893	
Accounting	21												21	206	227	
Health	396			5	1		10		25	321	9	25	807	186	993	
Executive	123		1										125	446	571	
Panama Railroad	416	199	35	145	243	438	898	38	958	394	6	10	3,760	373	4,163	
Contractors	29	1		9				2	46	6		2	69	8	167	
Grand total	6,788	180	668	1,204	2,407	1,493	1,374	118	2,093	3,497	64	116	20,002	3,639	23,641	
Month previous	6,669	177	735	1,331	2,854	2,078	1,613	178	1,980	3,366	54	116	21,691	3,409	25,100	
Changes	+119	+3	-67	-127	-447	-585	-239	-60	+113	-909	10		-1,689	+230	-1,459	

\*The wages are stated in United States currency.

## QUARTERS.

PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa	940	330	320	108	5	11	1,449	491	681
Ancon	958	44	361	9			241	16	3
Colon	28	15	6				97	18	1
Pedro Miguel	269	122	142	8			387	122	152
Paraiso	319	79	89	40	5	15	551	116	159
Culebra	22	16	12	2	1	7	421	267	332
Cambo	22	8	11				160	82	49
Gatun	229	176	218	12	2	3	555	421	719
Cristobal	943	338	405	72			1,797	198	397
Total	3,145	1,532	1,506	251	13	36	5,648	1,682	2,495

(1) Includes Taboga Island, Napa Island, and Pab Seco. (2) Includes 17 Asiatics. (3) Includes 14 American negroes, 40 Colombians and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores and Red Tank. (5) Includes Empire, Las Cascales, and Bas Obispo. (6) Includes 15 Panamanians. (7) Includes Colon Beach and Colon Hospital. (8) Includes 16 East Indians, 20 colored American citizens, and 232 Panamanians.

## Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below. Information concerning the same has been posted at clubhouses and post-offices, as per the number of announcement indicated:

Junior electrical engineer (male); \$960 to \$1,200 a year; examination about June 24 1916 (date to be left blank in application form); No. 677.

Salvage superintendent (male); \$4 to \$6 per diem; examination about June 20, 1916; No. 690.

Apprentice draftsman and photographer (male); \$600 to \$900 per annum; examination about June 21, 1916; No. 686.

Master mechanic (male); \$7.44 per diem; examination about June 24, 1916; No. 691.

Telephone engineer (male); \$1,800 a year; examination about June 24, 1916; No. 692.

## CANAL WORK IN APRIL.

## Monthly Report of the Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., May 15, 1916.

The Honorable the Secretary of War,  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of April, 1916:

## Department of Operation and Maintenance.

*Lock operation and maintenance*—In addition to the usual maintenance, operation, and repair work at the locks, the following was the status of work done at the places named:

*Pedro Miguel*—Installation of machinery for operation of regulating valves, commenced; installation of track turnouts, completed.

*Miraflores*—Installation of track turnouts, 50 per cent completed.

*Gatun*—Installation of track turnouts, completed.

On April 15 the conditions at the slides were such as to warrant the Canal being again opened to navigation, and the following commercial lockages were made:

Locks.	Lock-ages.	Percent.
Gatun	65	74
Pedro Miguel	71	76
Miraflores	72	76

*Electrical Division*—The net output of the power plants was: Gatun hydroelectric station, 3,438,300 kilowatt-hours; Miraflores steam plant (minus), 41,970 kilowatt-hours; total, 3,396,330 kilowatt-hours. The net output of the Balboa air compressor plant was 65,474,690 cubic feet of free air compressed to 105 pounds. This plant was permanently shut down on April 18 and work started on dismantling the equipment. The usual operation, maintenance, and repair work was carried on, and construction work was continued for the Army and Canal.

*Municipal Engineering Division*—In addition to the usual maintenance, operation, and repair work, the following are the principal items of construction work in progress: Fences around oil tanks and tank farm at Mount Hope; piping installation at the Pacific terminals dry dock, reloader wharf, oil line on the trestle to the oil crib, and other piping work required at the terminals; asphaltic concrete pavement on pier No. 18, and Panama Railroad stables in Panama City; construction of roads, water and sewer lines for the Army at Fort Randolph and Fort Sherman; and work on the extension of the Balboa townsite, which last item consisted of the necessary grading, laying out and construction of streets, and installation of water mains and storm and sanitary sewers.

*Division of Meteorology and Hydrography*—The rainfall for the month was above normal at 12 stations and deficient at six, and ranged from 2.84 inches at Balboa Heights to 9.82 inches at Pedro Miguel. The maximum precipitation recorded on any one day was 2.79 inches, at Monte Lirio on April 11. The estimated rainfall over the Gatun Lake watershed was 29 per cent above the six-year normal, and over the Chagres River basin above Alhajuela it was 63 per cent above the 15-year normal, and totaled 5.70 inches and 6.88 inches, respectively. The Chagres River discharge at Alhajuela was 32 per cent below the 15-year April normal, and furnished 72 per cent and 38 per cent of the net and total

Gatun Lake yields, respectively; and the Gatun Lake watershed net and total yields were 16 per cent and 10 per cent below the six-year April normal, respectively. Gatun Lake varied in elevation from 86.25 on the 13th to 85.91 on the 10th, averaging 86.06; and Miraflores Lake varied in elevation from 54.40 on the 24th to 53.43 on the 20th, averaging 53.95. Nine seismic disturbances were recorded at Balboa Heights during the month, but no damage was reported as a result of any of them.

#### Division of Terminal Construction.

##### PACIFIC TERMINALS.

**Dry dock and entrance pier**—Four hundred and eighty cubic yards of concrete were placed, of which 159 cubic yards were reinforced. The drilling of the cofferdam was completed, a total of 69,680 lineal feet being drilled, of which 11,444 lineal feet were drilled during the month, and on the 23rd instant the cofferdam was opened by a blast in which 14,000 pounds of 60 per cent dynamite were used. An opening was shot through the cofferdam approximately 150 feet wide. Before the shooting the entrance basin and the dry dock were flooded to elevation -15, and after the cofferdam was blown up, and the concrete barges floated out of the dry dock into the entrance basin, the gate was closed to its nitrated position against the sill. There was practically no leakage. The installation of the mechanical and structural parts of the pumping plant progressed satisfactorily, and about 65 per cent of the pressure piping was installed. Among the principal items of installation were the following: The motors for the four main pumps and two 20-inch pumps were placed on their bases; the shafting for the drainage pumps was assembled and aligned; the shafting for the main pumps and the two pressure pumps was assembled and partly aligned; and the accumulator and the 15-ton crane and trolleys were assembled. The operating cylinders, counterweights, sheaves, and chains for the pumping valves on the south side were assembled in position, and the four assembled counterweights were enameled.

**Coaling plant**—The remaining piers for the north run of the viaduct, and the balance of the backfill for the unloader wall, were in place; and the concrete deck slab was completed on this wharf, 651 cubic yards of concrete being placed. The anchorages behind the wharf were put in place, and the painting of the structural framing, and the galvanized corrugated covering for the operators' cabs and machinery houses of both towers, was completed. An additional 55 tons of steel were erected on that part of the viaduct which runs along the reloader wharf and on the driveway loop, and 11 tons of steel were erected on the transformer house. The riveting of the transformer house was started on April 20, and 1,026 rivets were driven during the balance of the month. The erection of the wharf bunker was completed on April 13, the total steel in the bunker amounting to 250 tons, of which 155.5 were erected in April. Riveting in the air was commenced April 1, and at the end of the month a total of 15,306 rivets had been driven, including 2,069 rivets driven during March in assembling the steel on the ground.

**Docks**—On pier No. 18, 735 square yards of brick pavement were placed on the fill, the anchors all connected and aligned, and the concrete walls of the pier shed completed. The tile roofing was finished on April 25, and

all the painting was done except that which had to be deferred on account of the erection of the Ogden steel doors. The weighing scales were installed, and the pier was turned over to the Panama Railroad for operation. The assembly of the steel frames for the doors was started and 50 per cent completed, and a trial door was erected and tested on April 15. Quay wall c-d was completed during the month.

**Excavation and filling**—The total excavation for the month amounted to 6,265 cubic yards, of which 3,354 cubic yards were rock, the major portion of which was obtained from Sost Hill. Of this total, 2,357 cubic yards were delivered to the East Breakwater, 1,319 cubic yards were placed behind Dock 19, and 1,408 cubic yards were placed behind Dock 13, as fill. The remaining amount was placed at dry dock on various miscellaneous jobs.

The Pacific terminal subdivision of the Division of Terminal Construction was abolished effective April 30, and such remaining work as was not continued under the direct charge of the Engineer of Terminal Construction, will be performed by other divisions and departments on work requests.

##### ATLANTIC TERMINALS.

**East Breakwater**—One thousand and eight cubic yards of armor, and 1,666 cubic yards of core rock were dumped in the fill, and 1,250 cubic yards of soft rock from the Mount Hope borrow pit were dumped on the extension to form a cushion for dumping concrete blocks. One thousand nine hundred and sixty-nine concrete blocks, containing 13,150.6 cubic yards, were plowed from cars, and 745 concrete blocks, containing 8,997.2 cubic yards, were placed by derrick barge.

**Concrete blocks**—Pouring of blocks for the East Breakwater continued during the month as follows:

Place.	Blocks poured.	Volume (cubic yards.)	Remaining to be poured (cubic yards.)
Walker & Torbert (contractors).....	1,647	20,258.1	51,094
Coco Solo.....	844	7,596	26,100
Cristobal coaling plant.....	1,027	5,443	13,245
Colon (P. R. R. forces).....	832	2,329.6	3,251
<b>Totals.....</b>	<b>4,350</b>	<b>35,626.7</b>	<b>92,690</b>

**Coaling plant**—The pouring of concrete floors and all concrete work to be done by Canal forces in the office tower on end wharf, was completed.

The following is the status of work under Washington order No. 40483: (a) **Stocking and reclaiming bridges**—This item was structurally, mechanically, and electrically completed, and the contractor conducted trials on bridge No. 2, preparatory to acceptance tests. (b) **Viaduct, conveying system, etc.**—Concrete walkway and apron were completed, 1,603 lineal feet having been placed in April; the hand railing was also completed. (c) **Wharf bunker and tower**—The main conveyor structure was 25 per cent completed, 14,000 pounds of steel having been placed; the feeder hopper and supports were 60 per cent completed; and 19,950 pounds of steel were erected under this trestle during the month. The wooden walkways were 10 per cent completed and 50 per cent of the hand railing was in place; and the stucco work on walls of the office building was 28 per cent completed. (d) **Conveyor cars**—The 88 conveyor cars for Cristobal plant were practically erected structurally, 64 per cent mechanically, and 61 per cent electrically.

(e) **Reloaders, etc.**—This subdivision is now completed. Repair work on the conveyor boom in tower No. 1 was finished and 2,000 pounds of miscellaneous steel were placed. Doors and windows were 90 per cent completed and 30,765 pounds of steel were placed in the machinery house, walks, etc. The delivery chutes were painted and the chute for tower No. 1 was hung in place.

Under Washington order No. 40587 (four unloader towers), the forces of the contractor were engaged during the month on adjusting engines, spotting and scraping bearings, etc., under towers Nos. 3 and 4. They have also been leveling and adjusting booms, straightening loading-out valves, placing aprons in front of car loading chutes, etc.

##### Marine Division.

The condition of the slides was such as to make it advisable to open the Canal for general traffic on April 15; however, several boats of light draft were passed through prior thereto. During the entire month 48 vessels (including two launches) passed through the Canal northbound and 34 southbound, of which 34 were of American register and 30 of British register. Three vessels were measured and 56 vessels were inspected to see whether their certificates conformed to the rules. The United States net equivalent tonnage was computed on 12 vessels. Statements showing vessels making the transit of the Canal in each direction during April are appended to this report.\*

##### Dredging Division.

The total excavation for the month, including earth, rock, and gravel, was 1,232,566 cubic yards. Of this total, 45,273 cubic yards were removed from Balboa inner harbor, 22,000 cubic yards of which was classified as maintenance work; 184,565 cubic yards of earth and 850,143 cubic yards of rock from Gaillard Cut; and 19,361 cubic yards of earth and 64,810 cubic yards of rock from the Cristobal coaling station. The excavation of sand and gravel from the Chagres River continued, and 2,472 cubic yards of sand, 874 cubic yards of No. 1 gravel, 1,714 cubic yards of No. 2 gravel, and 54,699 cubic yards of run-of-bank gravel, were excavated.

The Culebra slides continued active during the month.

The rock breaker *Vulcan* was engaged in breaking the rock shoal at station 2267 east, near the old Panama Railroad steel dock at Balboa, 1,048 holes being broken over an area of 16,728 square feet, with a total penetration of 4,986 lineal feet and a theoretical breakage of 2,960 cubic yards. All of the above breaking was within the Canal prism. The drill barge *Teredo No. 2* was engaged the greater part of the month at the base of Culebra slides, 160 holes being drilled over an area of 10,240 square feet, with a total penetration of 2,230 lineal feet and a breakage of 5,275 cubic yards. Hydraulic graders Nos. 1, 2, and 3, were engaged in sluicing on East Culebra slide. The work of destroying water hyacinths continued.

##### Mechanical Division.

Shop orders authorized during the month numbered 833, a decrease of 206 as compared with the previous month; those left over from

\*The information contained in these tables has been published in the weekly reports in THE CANAL RECORD. The statements are therefore not printed.

Five of the vessels making the transit were in the military service of the Government, two were launches, and 15 were commercial ships.



March numbered 797, and those carried forward into May numbered 717. The output of the foundry was 164,299 pounds of iron, 190,053 pounds of steel, and 17,094 pounds of brass. Hosting was done on 4,333 pieces of equipment, and shop and field repairs were made on 7,406 pieces, including 752 cars repaired in shop. The two most important jobs under way in the shops were the rebuilding of the hull of the tug *Reliance*, and refitting the batteries of submarine C-4.

At the Balboa oil plant the fences around the tank farm and gasoline storage tank have been completed, and work on the installation of the second 10-inch oil line on the trestle to the oil crib was 75 per cent finished. Oil tank No. 62 was erected for supplying oil to tank cars of the Panama Tramways Company. At the Mount Hope plant, the work of fencing the tank farms was well advanced, and the foundations and diversion walls for tank No. 9 were completed.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following is the approximate status of the Canal structures in course of construction at the places named:

Item.	Per cent completed.
Ancon—Balboa—	
Balboa refrigerating plant.....	99
Unit of Ancon Hospital group.....	99
Terminal office building.....	85
Ancon laundry.....	65
Concrete bachelor quarters, Ancon.....	92
Swimming pool, rear of Balboa clubhouse	99
Bath house at swimming pool.....	30
Concrete tower water tank, Balboa.....	100
Building 25, Balboa shops.....	92
Signal station, Sosa Hill.....	100
Balboa Yacht Club.....	100
Building 29, Balboa shops.....	30
Panama Railroad stables, Chorrillo.....	66
Brick work at Miraflores power house....	10
Gatun—Colon—	
Office building for coaling station.....	50
Storehouse, Colon Hospital.....	Commenced.
Terminal office building.....	Commenced.
Ice cream and milk bottling plant.....	10

#### Supply Department.

The force report for the period ended April 26, 1916, showed a total of 23,534 employees of The Panama Canal and the Panama Railroad Company, of whom 3,631 were white Americans and 19,903 laborers. Of the latter approximately 116 were Europeans and the remainder West Indian negroes. There was an increase of 260 Americans and a decrease of 1,683 West Indian negroes, making a net decrease of 1,423.

The occupants of Government quarters numbered 6,843 Americans, of whom 3,745 were men, 1,532 women, and 1,566 children; and 9,825 West Indians, of whom 5,643 were men, 1,682 women, and 2,495 children.

The value of material received during the month was \$662,168.16. It came forward in 28 steamers, and the total weight of cargo, exclusive of lumber and piling, was 23,780 tons. Some of the principal items were 484-, 410 feet, board measure, of lumber, 198,056 bags of cement, and 85,000 barrels of fuel oil.

The Balboa oil plant handled 144,204.21 barrels of fuel oil, and the Mount Hope plant handled 35,894.11 barrels, the greater part of which in each instance being handled for The Panama Canal.

#### Health Department.

*General*—No case of yellow fever, smallpox, or plague originated on or was brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 32,905, was 8.02 per thousand

per year, as compared with 9.28 for the preceding month and 5.71 for the corresponding month of last year. Twenty-five deaths occurred in the Canal Zone.

*Employees*—The health of employees continued good. The number of names on the payrolls for the month was 33,856. On this basis the admission to hospitals and quarters, 309, gave a rate of 109.52 per thousand, as compared with 151.25 for the preceding month, and 160.70 for the corresponding month of last year. The admission rates to hospitals and quarters for malaria were: Whites, 23.22; blacks, 5.34; and Americans, 22.47. The total number of deaths from all causes was 23. Of these, 18 died from disease or 6.38 per thousand, as compared with 5.80 per thousand for the preceding month and 1.76 for the corresponding month of last year. No Americans died from disease; two died from accidents during the month.

#### Accounting Department.

The cash balance in Canal construction appropriations on April 30, 1916, was \$8,791,503.64, and in the fortifications appropriations \$1,272,131.20. The payrolls for April, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$927,241.77, and the fortifications roll amounted to \$29,757.36. Payments by the Disbursing Clerk in Washington amounted to \$719,339.08 and by the Paymaster on the Isthmus to \$1,352,117.95. A payment of \$244,966.42 was also made to the Panama Railroad Company for commissary books. Collections on the Isthmus amounted to \$1,083,602.16, of which \$572,250.94 was repaid to appropriations, \$255,375.94 was commissary collections and other trust funds, and \$255,975.28 was miscellaneous receipts to be covered into the Treasury. Of the miscellaneous receipts, \$233,297.19 was collected on account of tolls. Collections by the Disbursing Clerk at Washington amounted to \$28,106.60, and deposits in the sum of \$170,114.20 were made with the Assistant Treasurers to be applied in payment of tolls and other charges against vessels using the Canal. Requisitions for purchases in the United States amounted to \$1,357,889.92, against \$871,261.23 for the preceding month, the total for the fiscal year being \$7,061,700.34. Canal revenue collections and miscellaneous funds received, amounted to \$188,169.88, and disbursements under the same heading amounted to \$221,434.08.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

Two hundred and thirty-three licenses of all kinds were issued. Seventeen estates were received for administration and 19 settled, the total cash received during the month amounting to \$735.90, and the total value of the estates closed was \$1,473.62. At the port of Balboa 70 vessels entered and 79 cleared and at the port of Cristobal 107 vessels entered and 106 cleared.

*Postal service*—Postmasters remitted on account of money order fees, stamp sales, second-class mail collections, postage due collections, and box rent receipts, \$7,489.19. Money orders issued during the month aggregated \$285,103.99. Of this total \$85,875 represented the value of deposit money orders issued without fee in lieu of postal savings certificates. Deposit money orders were paid to the value of \$95,825.00, and postal savings certificates to the value of \$4,191.00. The balance of postal savings deposits, represented

by unpaid certificates and deposit money orders, aggregated \$418,789.00, as compared with \$432,930.00 at the close of the previous month.

#### POLICE AND FIRE DIVISION.

Three hundred and forty-two arrests were made, of which total 326 were males. Fifty-seven convicts were confined in the penitentiary at the close of the month. Eleven persons were deported, nine of whom were convicts who had completed their sentences in the penitentiary, and two of whom were prisoners who had served their terms in jail.

Twelve fires occurred during the month, Panama Canal property suffering damage to the extent of \$15, and Panama Railroad property to the extent of \$759.95. Private property and the property of the United States Army suffered no damage.

#### COURTS.

In the District Court 65 cases were settled; seven civil, 25 probate, and 43 criminal cases were filed, and 121 cases of all kinds were pending at the close of the month. In the magistrate courts 13 civil and 329 criminal cases were disposed of.

#### DIVISION OF SCHOOLS.

The total enrollment was 1,574 for the white schools, and 1,017 for the colored schools. In the white schools the net enrollment was 1,344, the average daily attendance 1,097.45, and the average number belonging 1,128.32. In the colored schools the net enrollment was 757, the average daily attendance 470.80, and the average number belonging, 540.16.

#### Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including rehandled cargo and cargo stevedored, amounted to 229,263 tons, of which 179,245 tons were handled at the Colon agency. The following quantities of coal were bunkered in steamers: Colon agency, 17,000 tons; Balboa agency, 4,102 tons; total, 21,102 tons.

In connection with the work on pier No. 7, Cristobal, 1,365,010 pounds of structural steel were erected for the shed; 39,751 brick were laid on the floor of the pier, and 371 lineal feet of fender system were completed.

Twenty-six thousand eight hundred and seventy-nine cubic yards of soft rock from the Mount Hope borrow pit were placed in the fill in the rear of the fire station at Cristobal.

Respectfully,

GEO. W. GOETHALS,

Governor.

#### Extent of Red Cross Shipments of Supplies to Foreign Countries.

The American Red Cross has issued a bulletin regarding the quantity and value of supplies shipped by the organization to foreign countries in the period from September 7, 1914, to April 1, 1916. Two hundred and thirteen shipments were made in all, carrying 35,238 packages. Of these, \$348,340.69 worth were supplies purchased in America by the Red Cross organizations of other countries, while donated supplies were valued at \$705,621.47. The total value of supplies shipped was \$1,053,962.16, and the value of the supplies on hand on April 1 for shipment was \$96,233.07. Of the supplies shipped, all but \$15,370.59 worth went to countries at war in Europe. The others were distributed among Armenia, Haiti, Mexico, Poland, and Syria.



## NOTICE TO MARINERS.

## Changing Gas Buoy Characteristics.

1. The characteristics of the following gas buoys have been changed from flashing to fixed:

*Atlantic entrance*—Buoys Nos. 1, 2, 4, 7, and 8.

*Gatun Lake*—Buoys Nos. 6, 10, 21, 25, 26, 43, 44, 54, 55, 64, 67, 74, 76, 77, 82, 86, 87, and 91.

*Pacific entrance*—Buoys Nos. 1, 2, 5, 6, 9, 10, 13, and 14.

2. The channels and approaches are now marked by buoys with fixed lights on straight reaches and buoys with occulting lights marking the turns.

The above notice has been published as Circular No. 643-23, dated May 22, 1916.

## The Operation of Speeders.

The Panama Railroad Company has issued a pamphlet containing rules governing the operation of speeders over the tracks of the Panama Railroad. The word "speeder" as used in these rules designates any light power car that operates on the main line without train order protection.

Prefacing the rules is a general notice, as follows:

"To enter or remain in the service is an assurance of willingness to obey the rules.

"Obedience to the rules is essential to the safety of passengers and employees, and to the protection of property.

"The service demands the faithful, intelligent, and courteous discharge of duty."

The rules are as follows:

1. All men operating speeders will be required to have a copy of these rules, and pass a satisfactory examination before being allowed to run a car on the main line. Section foremen and others operating hand cars must also have a copy of these rules.

2. A speed of eight (8) miles per hour must not be exceeded around curves where a clear view of at least three transmission bridge spans can not be had.

3. On double track, speeders must operate with current of traffic and run with same precautions as on single track, expecting to meet trains running against current of traffic; also, reduce speed while passing a moving train on opposite track.

4. Speeders must not be run at night without carrying lights of some kind, and must also be equipped with horn or bell and with brakes in good condition.

5. Speeders must not follow a moving train closer than 600 feet.

6. Speeders must not follow each other closer than 500 feet.

7. Speeders should run under control over facing point switches and approach interlocking plants, expecting to find details on track, or switches being moved by signalman.

8. Speeders will flag through Miraflores tunnel and over Gamboa bridge.

9. Speeders must reduce speed while passing over road crossings.

10. Speeders approaching section gang working on track, will sound warning with bell or horn, and not

pass over track without signal from foreman unless way is known to be clear.

11. When two speeders meet on single track, southbound will be given preference and hold main line, unless the northbound car is loaded. When speeder meets hand car on single track the hand car, if light, will set off. If hand car is loaded, the men on hand car will assist in setting off speeder.

12. Operators of speeders having work to do will remove car from track.

13. Speeders must not be operated in tandem unless one car is out of commission and in that case the disabled car must be pulled.

C. H. MOTSETT.

Superintendent, Panama Railroad Company.

Approved:  
GEO. W. GOETHALS,  
Governor, The Panama Canal,  
President, Panama Railroad Company.

## Board of Local Inspectors Wishes Addresses.

The Board of Local Inspectors is unable to effect delivery to H. Mikelato of a Canal Zone license as mate of ladder dredges. This license will be held in the office of the board at Balboa Heights until further information is received.

The board wishes to communicate with the owner of the motor boat *Canal*. A letter addressed to Mr. Geo. Papaconstantino who, according to the board's records, is the owner of this craft, has been returned from the dead letter office.

## Applications for Family Quarters.

Applications for family quarters were on file at the several Canal towns on April 30, 1916, as follows:

STATIONS.	Number of applications.
Ancon .....	403 (91)
Ancon Hospital .....	5
Paraiso .....	167 (22)
Gatun .....	121 (12)
Cristobal .....	168 (32)
Total .....	864 (157)

NOTE—The figures in parentheses show the number of applicants already occupying regular or nonhouse-keeping family quarters at stations other than those at which applications are filed.

## Changes in Fourth of July Committee.

At the suggestion of the chairman of the executive committee of the official Fourth of July celebration, the Governor has added to the committee a member to be made chairman of the committee on invitations and receptions, and has appointed Mr. C. A. McIlvaine, Executive Secretary, for the place.

Major H. A. White having asked to be excused from serving as chairman of the music and dance committee, Lieut. Col. D. B. Devore has been designated in his place.

At a meeting of the executive committee on May 23, the chairman of the various committees reported plans, but definite allotments of funds were not made, as more will have to be contributed.

## OFFICIAL CIRCULARS.

## Complimentary Transportation for Religious Organizations.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 19, 1916.

To all concerned—Effective this date the privilege of complimentary trip passes over the Panama Railroad, which has been extended to bona fide religious organizations on the Isthmus, will be limited to five passes a month to each organization. These passes may be used by the head of the organization, or by such assistant or assistants as he may designate.

GEO. W. GOETHALS,  
President.

## Transfer of Accountability.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 10, 1916.

CIRCULAR No. 121:

Effective June 1, 1916, Mr. Benj. L. Jacobson, Depot Commissary, will assume the accountability for all nonexpendable property charged to line commissaries and Ancon laundry.

Capt. F. H. Smith will cease to be accountable for such property upon effecting a transfer of his accountability to Mr. Jacobson.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
GEO. W. GOETHALS,  
Governor.

## Invoices Covering Transfer of Nonexpendable Property.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 9, 1916.

To accountable officials and storekeepers—Effective at once, accomplished copies of invoices covering transfers of nonexpendable property will be furnished this office as follows:

Between stores and divisions, three copies.

Between divisions, four copies.

H. A. A. SMITH,  
Auditor, The Panama Canal.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 304, on Wednesday, May 31, 1916, beginning promptly at 9 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, room No. 211, Balboa Heights, forms of application and information respecting the filing out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, June 2, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board.  
GEO. J. VANDERSLICE,  
Recorder, Board of Local Inspectors.

## Launch Service to Taboga.

The following is the schedule of the launch service between Balboa and Taboga Island:

From Balboa to Taboga—The launch *Taboga* sails from Balboa dredge landing to Taboga daily, including Sundays, at 9:40 a. m. On Saturdays, Sundays, and holidays an additional trip is made at 5:30 p. m.

From Taboga Island to Balboa—Daily, including Sun-

## Deceased Employees.

Name.	Check No.	Notice of	Isthmian residence.	Employed by	Date of death.
Manuel Morales .....	24442	Peru .....	Panama .....	Dredging Div. ...	May 4, 1916
Marcos Morales .....	123079	Peru .....	Panama .....	Dredging Div. ...	May 4, 1916
Thomas Francis .....	56587	Jamaica .....	Colon .....	Fortifications .....	May 17, 1916

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Acting Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

days, at 10.45 a.m.; Saturdays, Sundays, and holidays, an additional trip at 7 p.m.

The rates at the Hotel Aspinwall are as follows:

	Per day.
Employees.....	\$2.00
Nonemployees.....	2.50
Children under 12 years of age.....	1.00
(Babies under 12 months free of charge.)	
Servants.....	1.00
Employees' rate for stay of 14 days or over.....	1.75
Laundry rates for one way between Balboa and Taboga are as follows:	
Employees.....	\$0.30
Employees' children.....	.20
Nonemployees.....	.20
Nonemployees' children.....	.10

Laundry tickets are sold only at the dredge landing at Balboa and at the office of the Hotel Aspinwall.

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., May 23, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be procured upon request of the addressees. Requests may be made by telephone, calling No. 182 Balboa:

Augustin Gilbert	Gerrion, Alexander
Bailey, Glenn K.	Greely, H. L.
Baker, H. M.	Hill, Mrs. R. A.
*Baptiste, Chas. J.	King, J. E.
Becker, Mrs. Ann A.	Long, Miss Ethel
Britt, Charles	Lowe Sylvan
Bull, Freeman N.	Parker, H. H.
Burns, A. M.	Schultz, John
Burns, Mrs. Louis A.	Shawker, C. C.
Dave, Mrs. C. E.	Smith, Mrs. Wesley Warren
Deming, Miss May	Solomon, Arthur M.
†Doler, W. M.	Thompson, John
Ferguson, C. R.	Toler, J. L.
Flowers, J. L.	Toothman, Ira M.
Flower, Katherine	Webb, T. W.
Gason, Arthur	Yearwood, V. T.

\*Paper. †Special delivery.

#### Maximum Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday May 20, 1916:

DAY AND DATE	STATIONS.				
	V. gila	Alhajuela	Camboa	Gatun Lake	Miraflores
Sun., May 14	129.70	96.15	6.23	86.33	50.00
Mon., May 15	26.35	92.49	6.36	6.35	40.00
Tues., May 16	130.50	93.44	86.40	6.39	54.00
Wed., May 17	130.50	95.86	48.86	50.40	40.00
Thurs., May 18	129.49	95.10	50.86	40.86	44.54
Fri., May 19	127.40	93.58	86.40	44.54	40.00
Sat., May 20	126.10	92.35	86.40	40.86	40.54

Heights of low water to nearest foot. (125.0 91.0)

#### Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective May 17:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Cambrk, yd.,	\$0.13	\$0.15
Cloths, S. B., ea	.85	1.10
Croton, yd.	.09	.11
Lace, yd.	.23	.28
Lace, yd.	.26	.40
Lace, yd.	.35	.44
Needles, doz.	.07	.10
Ribbon, yd.	.10	.14
Ribbon, yd.	.11	.14
Ribbon, yd.	.10	.13
Ribbon, yd.	.14	.18
Ticking, bed, yd.	.19	.23
Towels, ea.	.19	.23
Towels, ea.	.11	.16
EFFECTIVE MAY 19, 1916.		
Bags, 16", ea.	6.50	6.95
Shoes, Boy Scout, pr.	6.00	7.75
Bags, 18", ea.	6.95	7.55
Luggings, pr.	.50	.60
EFFECTIVE MAY 22, 1916.		
Pigs' heads, fresh, jar.	.31	.24

\*Dates and figs, stuffed, jar.

\*Not to be restocked.

## COMMISSARY DEPARTMENT.

### Cold Storage Prices.

For the benefit of shipping interests as well as of the local patrons of the commissary branch of the Supply Department, there is published below the retail cold storage price list, effective May 25, and subject to change each week. This list and the wholesale price list for fresh meats indicate the costs of all cold storage goods. The price list for groceries at retail which is now in effect was published in THE CANAL RECORD of February 2, 1916, covering five pages. Copies of this list may be obtained on application, from the boarding officers who visit incoming ships. These lists are published in order that the shipping interests may be kept informed of the facilities afforded by The Panama Canal for meeting the needs of vessels in the way of supplies.

The following list of retail prices of cold storage provisions will be effective May 25, 1916.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts.

### FRESH BEEF.

	Price.
Beef, suet, special, per lb.	\$.03
Beef suet, native, per lb.	.03
Soup beef, special, per lb.	.07
Soup beef, native, per lb.	.07
Soup bone, special, per lb.	.02
Soup bone, native, per lb.	.02
Sew beef, native, per lb.	.03
Plate beef, native, per lb.	.03
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 24 cut (3 1/2 lbs. up) special, per lb.	.16
Rib roast, 24 cut (3 1/2 lbs. up), native, per lb.	.06
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Pot roast, special, per lb.	.20
Pot roast, native, per lb.	.12
Rump roast, special, per lb.	.20
Rump roast, native, per lb.	.12
Porterhouse roast, choice, per lb.	.31
Porterhouse roast, special, per lb.	.22
Porterhouse steak (14 lbs. up), choice, per lb.	.16
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.10
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.12
Sirloin steak, choice cut, special, per lb.	.16
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.12
Porterhouse steak (14 lbs. up), choice, per lb.	.23
Porterhouse steak (14 lbs. up), special, per lb.	.23
Porterhouse steak (14 lbs. up), native, per lb.	.17
Porterhouse steak, short, choice, per lb.	.20
Porterhouse steak, short, special, per lb.	.12
Porterhouse steak, short, native, per lb.	.12
Tenderloin steak, special, per lb.	.35
Tenderloin steak, native, per lb.	.25
Tenderloin steak, western, special, per lb.	.32
Rib steak, native, per lb.	.11

### FRESH MEATS.

Lamb, chops, per lb.	.29
Lamb, chops, shoulder, per lb.	.20
Lamb, legs, 5 to 8 lbs., per lb.	.20
Lamb, shoulder, trimmed, not less than 3 1/2 lbs. per lb.	.24
Lamb, stewing, per lb.	.12
Mutton, chops, short cut, per lb.	.23
Mutton, chops, shoulder, per lb.	.23
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.23
Mutton, stewing, per lb.	.09
Pork, hams, fresh (see footnote), per lb.	.25
Pork, loins, chops, or roast, per lb.	.19
Pork, shoulders, fresh (see footnote), per lb.	.20
Veal, chops, per lb.	.34
Veal, chops, shoulder, per lb.	.24
Veal, cutlets, per lb.	.41
Veal, loin for roasting, per lb.	.36
Veal, shoulder for roasting, not under 4 lbs., per lb.	.18
Veal, stewing, per lb.	.15

### MISCELLANEOUS.

Beef heart, fresh, per lb.	.12
Brains, calves', per lb.	.18
Calves' heads, ea.	.18
Kidneys, beef, per lb.	.16
Livers, beef, per lb.	.09
Livers, calves', per lb.	.05
Pate de foie gras, jar.	.55
Pigs' feet, fresh, per lb.	.20
Pigs' heads, fresh, whole, ea.	.83
Pigs' heads, fresh, head, half.	.42
Sausage, bologna, per lb.	.18
Sausage, frankfurter, per lb.	.18
Sausage, homemade, per lb.	.23

Sausage, liebwurst, per lb.	Price
Sausage, pork, per lb.	.26
Sausage, Salami, per lb.	.34
Spare ribs, pork, per lb.	.17
Steak, hamburger, pkg.	.20
Steak, hamburger, 20-pound container, per lb.	.14
Swiss bread, beef, per lb.	.21
Tails, ox, per lb.	.09
Tongue, beef, native, whole, per lb.	.20
Tripe, per lb.	.06
Veast, per lb.	.31
Yeast, cake.	.02

### CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.31
Bacon, sliced, per lb.	.32
Bacon, sliced, tin.	.30
Bacon, strips, whole strip.	.25
Beef, corned.	.09
Ham, genuine Westphalia, per lb.	.50
Ham, minced, "Bologna style", per lb.	.16
Ham, shoulders, boneless, sugar cured, whole shoulder, per lb.	.19
Ham, shoulders, boneless, sugar cured, half shoulder, per lb.	.20
1. Ham, sugar cured (half) per lb.	.26
2. Ham, sugar cured (half) per lb.	.29
3. Ham, sugar cured (sliced) per lb.	.34
1. Ham, sugar cured, boiled (whole) per lb.	.35
2. Ham, sugar cured, boiled (half) per lb.	.31
3. Ham, sugar cured, boiled (sliced) per lb.	.40
Ham, special, per lb.	.40
Pigs' feet, pickled, per lb.	.08
Pork, bellies, per lb.	.18
Pork, clear, per lb.	.14
Pork, standard mess, per lb.	.15
Spiced head meat, per jar.	.30
Tongue, beef, corned, native, whole, per lb.	.20
Tongue, pigs', per lb.	.22

### POULTRY AND GAME.

Broilers, corn fed, per lb.	.32
Broilers, milk fed, per lb.	.36
Capons, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.32
Chickens, fancy roasting, milk fed, per lb.	.33
Ducklings, per lb.	.06
Fowls, light, per lb.	.26
Fowls, western, dry picked, per lb.	.29
Geese, per lb.	.31
Grouse, ea.	.40
Squabs, ea.	.45
Turkeys, per lb.	.47

### DAIRY PRODUCTS.

Butter, creamery special, per lb.	.47
Butter, creamery, 60-62 lb. tub, whole tub, per lb.	.46
Butter, Sheffield, 60-62 lb. tub, whole tub, per lb.	.46
Cheese, Edam, ea.	1.50
Cheese, Edam, tin.	.43
Cheese, Parmesan, per lb.	.44
Cheese, Philadelphia cream, per lb.	.09
Cheese, Roquefort, per lb.	.75
Cheese, snappy, cake.	.09
Cheese, Swiss, per lb.	.43
Cheese, Young American, per lb.	.43
Cream, 30 per cent, 1 pt.	.17
Cream, 30 per cent, pt.	.29
Cream, 30 per cent, qt.	.52
Eggs, fresh, per doz.	.18
Eggs, fresh, 1 doz. only.	.18
Fer-mil-lac, bottle.	.25
Ice cream, (see footnote) qt.	.25
Ice cream, (see footnote) gal.	.50
Milk, Sheffield farms, qt.	.15
Oleomargarine, per lb, etc.	.27

### FISH.

Bluefish, fresh, per lb.	.27
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.12
Halibut, fresh, per lb.	.14
Herring, smoked, per lb.	.13
Maters, fresh, per lb.	.16
Salmon, fresh, per lb.	.16
Whitefish, smoked, per lb.	.32
VEGETABLES.	
Beans, string, per lb.	.06
Beets, per lb.	.02
Cabbage, per lb.	.09
Carrots, per lb.	.03
Celery, per head.	.07
Celery, soup, per bunch.	.04
Fennel plant, per lb.	.11
Onions, per lb.	.03
Palmists, ea.	.24
Parsley, per bunch.	.02
Parsnips, per lb.	.04
Peas, green, per lb.	.03
Plantains, per doz.	.12
Potatoes, white, per lb.	.03
Radishes, per bunch.	.04
Squash, per lb.	.03
Tomatoes, per lb.	.06
Turnips, per lb.	.02
Yams, per lb.	.03

### FRUITS, DRIED.

Apples, evaporated, per lb.	.10
Apricots, evaporated, per lb.	.15
Currants, canned, pkg.	.16
Figs, 2-lb. box.	.35
Peaches, evaporated, per lb.	.18
Pears, evaporated, per lb.	.18
Peel, citron, per lb.	.20
Peel, lemon, per lb.	.16

Peel, orange, per lb.	Price
Prunes, stewing, per lb.	.16
Raisins, seeded, per lb.	.10
Raisins, table cluster, per lb.	.17

## FRUITS, FRESH.

Alligator pears, each	.05
Apples, per lb.	.04
Apples, select, per lb.	.07
Bananas, 8 hands and over, per bunch	.40
Bananas, 6 and 7 hands, per bunch	.28
Bananas, 6 and 7 hands, per bunch	.001
Cranberries, per lb.	.18
Crane fruit, select, ea.	.08
Grenadines (mangoes), per doz.	.14
Lemons, per doz.	.14
Limes, per 100	.75
Mangoes, each	.02
Oranges, select, ea.	.05
Oranges, tropical, doz.	.10
Pineapples, ea.	.06

\* Indicates advance from preceding list.  
 \*\* Indicates five cents allowed for return of bottle.  
 † Indicates reduction from preceding list.  
 ‡ Sold only from commissaries, no orders taken for delivery.  
 § Not less than 4 ham or 4 shoulder of fresh pork will be sold.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empure, Culabra, and Toro Point are open from 7.40 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal and Pedro Miguel stores are open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## Additions to Stock.

Tins, cream, cut glass, ea.	\$1.55
Nappies, cut glass, 6", ea.	1.25
Boats, sauce, with stand, Booth, No. 6131, ea.	.45

## An Instance in the Rising Cost of Living.

In connection with recently published notes on the advances in price of many articles sold in the commissary stores and the difficulty in obtaining many articles at any price on account of abnormal conditions in the world's business resulting from the European war, the Depot Commissary has forwarded a copy of a letter received by him from a paper company. It states the market quotations on raw materials which enter into the manufacture of paper, as of April 15, 1915, and April 15, 1916. The items listed are as follows:

Prices prevailing.  
 April 15, 1915. April 15, 1916.

Bleached sulphite, foreign	\$2.75 @ 2.90	\$6.00 @ 6.50
Easy bleaching, foreign	2.05 @ 2.15	3.65 @ 4.25
Unbleached sulphite, foreign	1.85 @ 1.95	3.60 @ 3.80
Kraft pulp, foreign	1.80 @ 1.95	4.50 @ 4.65
Bleached sulphite, domestic	3.00 @ 3.40	5.50
Unbleached sulphite, domestic	2.20 @ 2.75	3.35
Soda, bleached, domestic	2.25 @ 2.65	Unobtainable.
Mechanical pulp (ground wood)	16.50	
Alum	2.25 @ 3.75	4.00 @ 4.00
Bleaching powder	1.40 @ 1.50	8.00 @ 9.00
Brimstone	22.00 @ 22.50	29.50 @ 30.00
Caustic soda	1.60 @ 2.00	6.25 @ 6.50
Rosins	3.65 @ 3.80	5.50 @ 5.55
Satin white	1.50 @ 1.50	2.25 @ 2.50
Soda ash	.55 @ .70	4.25 @ 4.25
Ultramarines	12.00 @ 22.00	15.00 @ 30.00
Sulphate of alumina	1.25 @ 1.50	6.00 @ 6.50

The company concluded its letter with this comment:

"The difficulties in securing pulps, the shortage of chemicals and dyestuffs, the scarcity of ocean tonnage and its enormous present value, and the diversion of so many raw materials to the manufacture of explosives of various kinds, all contribute to the higher price of the finished product."

## SHIPPING INFORMATION.

Tide Predictions, Port of Balboa.  
 Panama (Balboa) tide predictions for the period until July 1 are given in this table:

MAY.				
DATE.	Time and height of high and low water.			
Wed., May 24.....	3:00	9:15	15:38	21:40
	1.5	14.2	2.6	13.1
Thurs., May 25.....	4:04	10:21	16:45	22:54
	2.2	13.8	2.8	12.6
Fri., May 26.....	5:08	11:28	17:49	
	2.7	13.7	2.8	
Sat., May 27.....	0:07	6:11	12:32	18:50
	12.5	2.9	13.7	2.5
Sun., May 28.....	1:10	7:10	13:25	19:45
	12:18	2:9	14:20	2:0
Mon., May 29.....	2:01	8:03	14:12	20:33
	13.1	2.6	14.2	1.5
Thurs., May 30.....	2:46	8:51	14:54	21:16
	13.5	2.3	14.4	1.1
Wed., May 31.....	3:27	9:33	15:33	21:56
	13.7	2.0	14.4	0.9

JUNE.				
DATE.	Time and height of high and low water.			
Thurs., June 1.....	4:07	10:13	16:12	22:33
	13.8	1.9	14.4	0.8
Fri., June 2.....	4:46	10:50	16:50	23:09
	13.8	1.9	14.3	0.9
Sat., June 3.....	5:24	11:27	17:28	23:46
	13.8	2.2	14.1	1.2
Sun., June 4.....	6:01	12:04	18:05	
	13.6	2.6	13.7	
Mon., June 5.....	0:22	6:33	12:43	18:42
	1.6	13.3	3.0	13.3
Tues., June 6.....	1:00	7:15	13:24	19:21
	2.2	13.1	3.5	12.8
Wed., June 7.....	1:40	7:52	14:12	20:00
	2.8	12.8	4.0	12.0
Thurs., June 8.....	2:26	8:34	15:06	20:48
	3.4	12.5	4.2	11.8
Fri., June 9.....	3:17	9:23	16:05	21:47
	3.8	12.4	4.2	11.5
Sat., June 10.....	4:15	10:22	17:06	22:58
	4.1	12.5	3.9	11.6
Sun., June 11.....	5:16	11:25	18:07	
	4.0	12.9	3.3	
Mon., June 12.....	0:06	6:19	12:29	19:05
	12.0	3.6	13.5	2.5
Tues., June 13.....	1:07	7:20	13:24	20:01
	12.8	2.9	14.4	1.4
Wed., June 14.....	2:00	8:17	14:15	20:53
	13.8	2.0	15.2	0.2
Thurs., June 15.....	2:53	9:10	15:06	21:43
	14.7	1.0	16.0	-0.7
Fri., June 16.....	3:44	9:50	15:58	22:29
	15.5	0.2	16.5	-1.4
Sat., June 17.....	4:36	10:36	16:50	23:15
	16.1	-0.3	16.7	-1.7
Sun., June 18.....	5:27	11:32	17:43	
	16.5	-0.4	16.6	
Mon., June 19.....	0:01	6:19	12:24	18:34
	-1.5	16.6	-0.1	16.1
Tues., June 20.....	0:50	7:09	13:16	19:25
	-1.0	16.3	0.4	15.4
Wed., June 21.....	1:40	8:00	14:11	20:17
	-0.1	15.7	1.2	14.5
Thurs., June 22.....	2:35	8:50	15:10	21:13
	1.0	15.0	1.9	13.4
Fri., June 23.....	3:33	9:46	16:12	22:11
	2.1	14.1	2.6	12.6
Sat., June 24.....	4:33	10:49	17:13	23:09
	3.0	13.4	3.0	12.0
Sun., June 25.....	5:35	11:55	18:15	
	3.6	13.1	3.1	

DATE.	Time and height of high and low water.			
Mon., June 26.....	0:30	6:42	12:55	19:16
	12.0	3.8	13.0	3.0
Tues., June 27.....	1:33	7:37	13:48	20:10
	12.1	3.7	13.1	2.6
Wed., June 28.....	2:28	8:30	14:34	20:57
	12.5	3.4	13.4	2.1
Thurs., June 29.....	3:12	9:14	15:17	21:39
	12.9	2.9	13.6	1.6
Fri., June 30.....	3:53	9:56	15:56	22:17
	13.2	2.5	13.9	1.2

The tides are placed in the order of occurrence, with high times on the first line and low on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The height in feet and inches is reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 78° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning, for instance 15:47 is 3:47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, on Thursdays, under the prevailing schedule.

The mail is delivered at New York six days after the day of sailing, except that on the *Advance* and the *Cristobal* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*No. 12—The sailings on Monday, May 29 and June 16, will not land mail at New York until Tuesday of the following week. Train No. 6, leaving Panama at 7:10 a. m., connects with the despatches for the sailings on May 29 and June 16.

When the vessel sailing Thursday is the *Advance* or the *Cristobal*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct dispatch to New Orleans on the following Sunday.

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## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., May 21, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
May 15.....	John A. Hooper.....	American.....	Sudden & Christensen.....	Baltimore.....	Callao.....	Coke.....	2,369	2,628	1,713
May 15.....	Ellerie.....	British.....	Steamship Ellerie Company.....	Cardiff.....	Mejillones.....	Coal.....	2,995	3,811	2,766
May 15.....	Yhakatane.....	British.....	Norton Lilly & Company.....	St. John, N. B.....	New Zealand.....	General.....	8,905	7,124	5,544
May 15.....	Kumeri.....	British.....	Norton Lilly & Company.....	New York.....	Vladivostok.....	General.....	11,800	8,202	6,300
May 16.....	Jamaica.....	British.....	Pacific Steam Nav. Company.....	Cristobal.....	Buenaventura.....	General.....	73	1,170	620
May 16.....	Imperial.....	Chilean.....	South American Line.....	Cristobal.....	Valparaiso.....	General.....		3,621	2,397
May 16.....	Balboa.....	American.....	American Mex. Steam Trading.....	Cristobal.....	Buenaventura.....	General.....		705	315
May 16.....	Huadonga.....	Peruvian.....	Peruvian Steamship Line.....	Cristobal.....	Callao.....	General.....	1,100	4,538	2,430
May 17.....	Melania.....	British.....	Anglo-Saxon Petroleum Co.....	London.....	San Francisco.....	Ballast.....		6,093	4,330
May 17.....	Ohioan.....	American.....	American-Hawaiian Line.....	New York.....	Mejillones.....	Coal.....	8,435	7,106	5,066
May 18.....	Ferrona.....	British.....	British & Chilean S. S. Co.....	New York.....	Arica.....	General.....	4,000	5,485	4,008
May 18.....	Harrison.....	British.....	Harrison Line.....	Liverpool.....	Los Angeles.....	General.....	4,500	4,154	2,863
May 18.....	Hawkhead.....	British.....	Port Line, Limited.....	Newport News.....	Antofagasta.....	General.....	6,000	5,148	3,870
May 19.....	Port Hardy.....	British.....	Commonwealth & Dominion L.....	New York.....	Auckland.....	General.....	9,000	8,201	5,800
May 19.....	Kalibia.....	British.....	Clyde Shipping Co., Ltd.....	Sewalls Point.....	Iquique.....	Coal.....	6,834	5,497	3,882
May 20.....	Acayula.....	British.....	Pacific Steam Nav. Company.....	Cristobal.....	Salina Cruz.....	General.....	838	1,219	627
May 21.....	Bradford.....	American.....	Standard Oil Company.....	Tuxpan.....	Pisagua.....	Fuel oil.....	7,830	7,236	5,398
May 21.....	Turret Crown.....	British.....	Turret Crown Limited.....	Newport News.....	Mejillones.....	Coal.....	2,653	2,021	1,331
May 21.....	Greenwich.....	British.....	Watts Watts & Company.....	Norfolk.....	Caldera.....	Coke.....	2,849	2,952	2,127
May 21.....	Terrier.....	Norwegian.....	Wilhelmsens Dmpak Akties.....	Norfolk.....	Taitai.....	Ballast.....		5,495	4,032

† Amount of cargo could not be obtained from agent.

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

May 14...	Baron Ogilby...	British...	Hogarth Shipping Company...	Newcastle...	Glasgow...	Chrome ore...	6,055	5,077	3,812
May 15...	Mary Park...	British...	Park Steamship Company...	Tacopilla...	Cette, France...	Nitrates of soda...	5,463	3,903	2,873
May 16...	Acayula...	British...	Pacific Steam Nav. Co...	Salina Cruz...	Colon...	General...	2	1,219	627
May 16...	Aysen...	Chilean...	South American S. S. Co...	Valparaiso...	Colon...	General...	1,431	4,593	3,042
May 16...	Minerva...	Dutch...	Royal Netherlands S. S. Co...	Iquique...	Colon for orders...	Nitrates...	3,611	2,944	1,974
May 16...	Guensery...	Norwegian...	W. Wilhelmsens...	Mejillones...	Colon for orders...	Nitrates...	6,800	4,418	3,721
May 17...	Hesperos...	Norwegian...	Brugsard Klosterud...	Taitai...	Norfolk...	Nitrates...	8,150	5,678	4,214
May 17...	Cyrus W. Field...	American...	United States Army...	Batavia...	Colon...	General...	3,538	4,957	3,118
May 18...	Urubamba...	Peruvian...	Peruvian Steamship Line...	Callao...	Colon...	Nitrates...	8,160	5,404	3,937
May 19...	Herakles...	Norwegian...	Brugsard Klosterud...	Antofagasta...	Colon for orders...	Nitrates...			
May 20...	Cumberland...	British...	Federal Steam Nav. Co...	Wellington...	Liverpool...	Beef, wool, grain...	5,845	9,919	6,755

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
May 14...	Columbia...	Adolph Halvorsen...	Philadelphia.	May 15...	Columbia...	Adolph Halvorsen...	N. Y. & Mad'ga Bay
May 13...	Scythian...	Leyland Line...	Liverpool.	May 16...	Siskiyou...	E. K. Wool Lumber Co...	Bluefield Is.
May 16...	Quillota...	Pacific Stram Nav. Co...	London.	May 17...	Scythian...	Leyland Line...	Galveston.
May 16...	Quillota...	Leyland Line...	Liverpool.	May 17...	Quillota...	Pacific Steam Nav. Co...	Kingston.
May 20...	Canina...	Elders & Fyffes...	Port Limon.	May 20...	Canina...	Elders & Fyffes...	Bristol via King'on
May 20...	Lemidas...	United States Navy...	San Blas coast.	May 22...	Orubian...	Leyland Line...	New Orleans.

\*Other than United Fruit Company's vessels and 1 vessels in regular service with United States.

## PORT OF BALBOA.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
May 16...	Guardian...	Cen. & So. Amer. Tel. Co...	High seas.	May 17...	Guardian...	Cen. & So. Amer. Tel. Co...	High seas.
May 18...	Suecia...	Johnson Line...	Stockholm.				
May 20...	La Primera...	Standard Oil Company...	Corinto.				

## \*EXPECTED ARRIVALS.

May 21...	Tricolor...	W. Wilhelmsens...	Antofagasta.	May 25...	Almora...	Donaldson Line...	Chile.
May 21...	Crown of Toledo...	Crown S. S. Company...	San Francisco.	May 25...	British Yeoman...	San Francisco.	San Francisco.
May 22...	Oyster...	Bank Line...	San Francisco.	May 25...	Derwent River...	British Steam Nav. Co...	Chile.
May 22...	Clan Alpine...	Cayzer, Irvine & Co...	Coronel.	May 25...	Birkhall...	W. Hartlepool Steam Nav...	Chile.
May 23...	Levitham...	British Steamship Co...	Coronel.	May 28...	Valdivia...	British Admiralty...	Chile.
May 24...	Palma...	South American S. S. Co...	Chile.				

## \*EXPECTED DEPARTURES.

May 22...	Suecia...	Johnson Line...	San Francisco.				
May 22...	La Primera...	Standard Oil Company...	San Francisco.				

\*Other than ships passing through the Canal.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.			
Vessel	Line	Sails	Arrives
Almirante...	U. F. C.	May 17...	May 24
Panama...	P. R. R.	May 18...	May 24
Pastores...	U. F. C.	May 20...	May 28
Zacapa...	U. F. C.	May 24...	May 31
Alliance...	P. R. R.	May 25...	May 31

## CRISTOBAL-COLON TO NEW YORK.

Cristobal...	P. R. R.	May 25...	June 1
Advance...	P. R. R.	May 25...	June 1
Santa Marta...	U. F. C.	May 25...	June 1
Metapan...	U. F. C.	May 29...	June 6
Panama...	P. R. R.	June 1...	June 7

## NEW ORLEANS TO CRISTOBAL-COLON.

Turrialba...	U. F. C.	May 20...	May 27
Panama...	U. F. C.	May 24...	May 29
Atenes...	U. F. C.	May 27...	June 3

Cartago...	U. F. C.	May 31...	June 5
Heredia...	U. F. C.	June 3...	June 10
Abangarez...	U. F. C.	June 7...	June 12
CRISTOBAL-COLON TO NEW ORLEANS.			
Abangarez...	U. F. C.	May 28...	June 2
Turrialba...	U. F. C.	May 28...	June 5
Parrimino...	U. F. C.	June 4...	June 9
Atenas...	U. F. C.	June 11...	June 12
Cartago...	U. F. C.	June 11...	June 16
Heredia...	U. F. C.	June 11...	June 19



## The Canal Record

Official publication of The Panama Canal.

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Isthmus of Panama.

### NOTES OF PROGRESS.

#### The Ship Which Has Made the Most Transits of the Canal.

The steamship *Jamaica* entered the Canal for her thirty-second transit on Friday, May 26. This ship has made more trips through the Canal than any other commercial vessel. Her first voyage was made on November 5, 1914, from Cristobal, shortly after she had been transferred from the Royal Mail Steam Packet Company to the Pacific Steam Navigation Company. Since that time she has been engaged in a service between the Atlantic terminus of the Canal and Buenaventura and Tumaco. The voyage from Balboa to Buenaventura is about 360 miles and can be made in less than two days; and on the return voyages to the Canal it is necessary for the ship to wait in quarantine at Balboa to complete the protective period. Except for this the number of her voyages would have been greater.

The *Jamaica* is a relatively small ship, 220 feet long by 34 feet in the beam, with registered gross and net tonnage of 1,138 and 602, respectively.

Three of the *Jamaica's* trips through the Canal were made in 1914, and 26 in 1915. Her trip on May 26 is her third since the re-opening of the Canal.

#### Ships Which Have Used the Canal Most Frequently.

Since the opening of the Canal to commercial traffic on August 15, 1914, many ships have made repeated passages through it, principally in the maintenance of regular

services, or lines. To May 27, 1916, the number of ships which have passed through the Canal as many as 10 times is 18. The following is an alphabetical list of them, with the numbers of transits, and the services in which they have been operating;

<i>Acajutla</i> .....	16	Salvador Railway Co.,
<i>Advance</i> .....	20	Pac. Steam Nav. Co.
<i>Alliance</i> .....	20	Panama Railroad Line.
<i>Caralyn</i> .....	11	Lucickenbach Line.
<i>Colon</i> .....	18	Panama Railroad Line.
<i>Guatemala</i> .....	12	Pacific Steam Nav. Co.
<i>Harry Luckenbach</i> .....	10	Lucickenbach Line.
<i>Honolulu</i> .....	10	American-Hawaiian Line.
<i>Jamaica</i> .....	32	Pacific Steam Nav. Co.
<i>Limari</i> .....	16	South American S. S. Co.
<i>Monari</i> .....	13	Pacific Steam Nav. Co.
<i>Palena</i> .....	13	South American S. S. Co.
<i>Panama</i> .....	14	Panama Railroad Line.
<i>Peru</i> .....	12	Pacific Steam Nav. Co.
<i>Salvador</i> .....	13	Salvador Railway Co.,
		Pacific Steam Nav. Co.
<i>Santa Catalina</i> .....	10	W. R. Grace & Co.
<i>Santa Clara</i> .....	11	W. R. Grace & Co.
<i>S. V. Luckenbach</i> .....	10	Lucickenbach Line.

The above are complete transits. In addition, some of the ships entered the Canal at the time traffic was cut off by the slides, in September, 1915, but withdrew from the Canal after making only part of the trip.

The ships which have been through the Canal most frequently were engaged on relatively short runs, between the Atlantic terminus and the west coast of Central America or northern South America, for instance, or between the Pacific terminus and New York, as in the case of the Panama Railroad ships. On the longer voyages, as between San Francisco and New York, none of the ships had made over 11 transits, and for ships plying to Australia and New Zealand or the Far East the highest number of passages is well below 10.

#### First Sailing Ship since the Resumption of Traffic.

The first sailing ship to make the transit of the Canal since it was reopened to traffic, on April 15, was the iron bark *British Yeoman* of Victoria, B. C., which arrived at Balboa on May 25 and entered the Canal for transit on May 27. She is bound from San Francisco for Great Britain with a cargo of 2,962 tons of flour.

The *British Yeoman* was towed from San Francisco to Balboa by the tug *Hercules*, and the time of the voyage was 18½ days. She was handled through the Canal by Canal tugs, to the harbor at Cristobal, where she is lying at anchor, waiting for orders.

Repairs to the rudder of the *British Yeoman* were made by forces of the Balboa shops. The ship was built in 1880 at Southampton, and is 269 feet in length by 39.8 beam, and was drawing 22 feet six inches of water at Balboa.

#### Fifth Tow to the Canal for the "Hercules."

The tug *Hercules*, which towed the bark *British Yeoman* from San Francisco to Balboa, is the same tug which brought down the floating caisson dam No. 1 for The Panama

Canal, and towed down the sailing ship *Janna*, arriving March 25, 1915; the sailer *Dunsyre*, arriving May 5; and the dredge *San Diego*, arriving October 17.

On his most recent voyage the master stated that it was his expectation to secure shortly at San Francisco a sailing ship to tow all the way to New York, by way of the Canal. The high freight rates prevailing are said to warrant the use of a tug all the way, for the saving of a week or 10 days in the time from the Canal to New York.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, May 29, amounted to 252,293 cubic yards. In addition, 1,012 yards were removed from other parts of the Cut in miscellaneous maintenance work. The dredges also re-handled 35,305 cubic yards of spoil in the work of disposing of it, but these figures are not included in the totals, which are for primary excavation and represent the decrease of material in the Canal prism.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
<i>Casados</i> .....	15-yard dipper.....	79,710
<i>Gambou</i> .....	15-yard dipper.....	48,665
<i>Paraiso</i> .....	15-yard dipper.....	76,795
<i>Coronel</i> .....	Ladder.....	25,160
No. 83.....	Pipeline suction.....	1,012
<i>Culebra</i> .....	Seagoing suction.....	12,456
No. 86.....	Pipeline suction.....	36,017
No. 84.....	Pipeline suction.....	8,795
No. 5.....	Belgian ladder.....	....

The aggregate of primary excavation from the bases of the Culebra slides since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the hour of midnight on May 29, 1916, has amounted to 14,204,852 cubic yards. This has been an average of 729,166 cubic yards per month.

In the current fiscal year, beginning with July 1, 1915, and ending with the close of work on May 29, a period of approximately 11 months, the primary excavation in the Cut has exceeded ten million cubic yards; the exact figures are 10,081,486 cubic yards. This has been an average of 30,184 cubic yards per day, and approximately 921,000 cubic yards per month.

#### The "Inverclyde" Returns as the "Eurymachus."

The steamship *Eurymachus*, which arrived at the Atlantic entrance of the Canal on May 26 for transit on the way from New York to Vladivostok, was formerly the *Inverclyde*, and as such had passed through the Canal four times, twice in each direction. Her owner at that time was the Inver Steamship Company; her present owner is Alfred Holt & Company.

The converted seagoing suction dredge *Caribbean* will sail from Cristobal on Thursday, June 1, for Cispat Bay, Colombia, to bring her first cargo of cattle for the Supply Department.

## RECEIPTS AND EXPENSES.

Loss in Operation and Maintenance of Canal  
Has Averaged Nearly \$600,000 per Month  
for Six Months.

During March, as in the other months in which the Canal was closed to traffic (from September 18, 1915, to April 15, 1916), tolls on vessels using the Canal were collected only from small vessels which were allowed to make the transit for special reasons. The toll collections in March amounted to \$418.80. In October and November no tolls were collected. In December the smaller vessels of those which had been waiting at the Canal entrances for passage were handled through, and tolls collected in that month from seven ships

amounted to \$10,826. Tolls collected in January amounted to \$654.39, and the collections in February amounted to \$834. With the March collections, \$418.80, the aggregate for the six months is \$12,733.19.

Throughout the six months, however, the expenses of operation and maintenance continued, and were even increased by the heavy expenditures necessary for the excavation of material in Gaillard Cut. In July the expenses were \$455,795.58 (tolls were \$573,365.67). In August and September the expenses were \$559,969.36 and \$499,065.64. In October they were \$546,759.83; November, \$643,945.21; December, \$580,253.71; January, \$595,713.27; February, \$609,253.66;

and in March, \$590,435.23. The total for the six months, from October 1 to April 1, was \$3,566,360.91.

The charges for operation and maintenance averaged \$594,393.43 for the six months. Tolls averaged \$2,122.20. The loss averaged \$592,254.62 per month.

The loss in the account for the fiscal year, to April 1, has amounted to \$3,648,812.30. In the same period last year the loss was \$179,826.45.

A summary of the charges for operation and maintenance during March, as compared with those for February and for the fiscal year to date, this year and last, is presented herewith:

ITEMS.	March, 1916.	February, 1916.	March, 1915.	Fiscal Year to Date.	
				This Year.	Last Year.
Marine Division:					
Admeasurement of vessels.....	\$247.70	\$198.66	\$1,008.16	\$5,206.24	\$7,616.07
Local inspection.....	190.35	187.03	373.49	2,832.49	2,840.85
Aids to navigation.....	3,665.55	4,016.74	4,777.60	41,363.09	35,915.38
Pilotage.....	396.13		6,752.18	21,238.47	42,000.28
Operation of harbor tugs—balance.....	3,430.64	3,456.72		31,827.43	
Total, Marine Division.....	7,930.37	7,859.15	12,911.52	102,457.72	88,372.58
Lock operation and maintenance—					
Gatun Locks:					
Superintendence.....	612.60	903.55	1,318.22	9,578.42	13,731.28
Operation.....	3,757.76	3,880.87	8,183.68	59,633.75	76,298.31
Maintenance of machinery and equipment.....	3,751.47	4,196.17	5,975.90	119,963.72	55,150.80
Maintenance of structure.....	1,030.93	585.25	2,150.09	8,709.99	25,137.36
Miscellaneous supplies and expenses.....	59.08	158.90	148.25	1,461.63	2,190.54
Total, Gatun Locks.....	9,201.84	9,724.75	17,796.14	199,418.51	172,508.29
Gatun Spillway:					
Operation.....			83.67	729.81	821.09
Maintenance of machinery and equipment.....	505.56	556.11	668.84	4,510.23	4,006.35
Maintenance of structure.....	4,229.09	3,198.05	329.57	8,193.84	5,086.59
Total, Gatun Spillway.....	4,734.65	3,754.16	1,082.08	13,433.88	9,914.03
Pedro Miguel Lock:					
Superintendence.....	1,192.83	958.27	1,516.75	11,762.19	11,580.97
Operation.....	3,056.09	2,590.00	5,132.10	35,247.82	60,571.53
Maintenance of machinery and equipment.....	7,677.49	5,094.40	3,624.42	48,039.29	32,833.22
Maintenance of structure.....	717.48	905.08	5,561.94	11,475.09	21,915.26
Miscellaneous supplies and expenses.....	344.41	251.02	197.35	1,897.82	1,273.28
Total, Pedro Miguel Lock.....	12,988.30	9,798.77	16,032.55	108,422.21	128,174.26
Pedro Miguel Dam:					
Maintenance.....					42.00
Miraflores Locks:					
Superintendence.....	1,327.54	1,168.49	1,656.24	11,623.74	13,675.07
Operation.....	6,759.00	5,621.60	7,721.72	51,424.11	77,781.65
Maintenance of machinery and equipment.....	15,905.63	8,147.25	6,533.55	57,234.87	59,750.38
Maintenance of structure.....	1,064.17	1,129.36	4,264.51	8,756.43	19,658.57
Miscellaneous supplies and expenses.....	343.33	363.38	230.82	2,266.12	2,452.53
Total, Miraflores Locks.....	25,399.67	16,430.03	20,396.84	131,305.27	173,318.50
Miraflores Spillway and East Dam:					
Operation.....	11.16	28.00		218.97	651.50
Maintenance of machinery and equipment.....	112.56	90.75	234.05	1,781.54	8,075.29
Maintenance of structure.....			51.38	387.03	648.74
Total, Miraflores Spillway and East Dam.....	123.72	118.75	285.43	2,387.54	9,375.53
Miraflores West Dam:					
Maintenance.....				347.72	377.17
Total, lock operation and maintenance.....	52,448.18	39,826.51	55,593.05	455,315.13	493,709.78
Dredging:					
Atlantic entrance.....	584.86	319.02	16,930.57	7,243.25	117,649.33
Gatun Lake.....					
Gaillard Cut.....	298,715.77	320,506.72	195,262.52	2,540,584.30	1,207,957.91
Miraflores Lake.....					
Pacific entrance.....		4,355.06		19,724.07	4,978.80
Total, dredging.....	299,300.63	325,180.80	212,193.09	2,567,551.62	1,330,586.04
Gatun Dam, maintenance.....	675.75	1,642.65	10,539.14	14,959.01	26,867.02
Removal of floating obstructions.....	1,630.78	1,473.31	1,762.66	15,107.17	10,538.83
Gatun-Mindi Levee, maintenance.....	412.84	288.42		1,605.76	22,564.96
Colon West Breakwater, maintenance.....				41,328.32	
Naos Island Breakwater, maintenance.....				58.45	461.93
Damages to vessels in locks.....	93.61	112.50	720.63	1,628.93	2,169.09
Damages to vessels in Canal.....	14,950.02	15,493.35		59,857.01	20,857.01
Operation of floating derricks.....	813.32	2,121.10		16,593.55	29,859.31
Maintenance of transportation tracks.....					
Total, operation and maintenance.....	378,255.50	393,997.79	299,689.82	3,276,462.67	2,005,129.54
Proportion of overhead expenses.....	212,179.73	215,255.87	123,585.50	1,804,738.82	1,013,759.11
Total.....	590,435.23	609,253.66	423,275.32	5,081,201.49	3,018,888.65
Tolls.....	418.80	834.00	551,092.56	1,432,389.19	2,839,062.20
Tolls earned in excess of expenses.....			127,817.24		
Expenses in excess of tolls earned.....	590,016.43	608,419.66		3,648,812.30	179,826.45



## STATEMENT OF CANAL EXCAVATION TO MAY 1, 1916.

"Work" Excavation, Including Construction and Maintenance, April, 1916.

	Cubic yds.
Atlantic section—	
Wet excavation—terminals.....	84,171
Central section—	
Gaillard Cut (including slides).....	1,034,708
Pacific section—	
Wet excavation—inner harbor.....	18,903
Wet excavation—Pacific entrance.....	8,655
Total.....	1,146,437
Construction "wet".....	103,074
Maintenance "wet":	
Gaillard Cut.....	1,034,708
Pacific entrance.....	8,655
Total.....	1,043,363
Total.....	1,146,437

## Summary of Wet "Work" Excavation Charged to Maintenance.

By months.	Atlantic entrance	Gaillard Cut	M. A. S. Lake	Pacific entrance	Balboa in. harb.	Total
July 1, 1914, to Dec. 31, 1915.....	1,258,016	10,658,771	8,662	74,357		11,990,806
January, 1916.....		1,061,073		40,456	4,900	1,106,429
February, 1916.....		1,039,950		29,181		1,069,131
March, 1916.....		1,142,834				1,142,834
April, 1916.....		1,034,708		8,655	22,000	1,065,373
Total.....	1,258,016	14,937,346	8,662	152,649	26,900	16,383,573

## Summary of Wet "Work" Excavation Charged to Construction.

Location.	Remaining March 1, 1916.	Remaining April 1, 1916.	Excavated during Month.
Pacific entrance.....	792,671	792,671	
Balboa inner harbor.....	789,453	770,550	18,903
Miraflores Lake.....	265,600	265,600	
Gambou to Pedro Miguel.....	1,561,150	1,551,150	
Cristobal coaling station.....	322,595	238,424	84,171
Mile 3-4.....	33,629	33,629	
Mile 4-5.....	162,486	162,486	
Mile 5-6.....	153,800	153,800	
Mile 6- Gatun Locks.....	17,225	17,225	
Mile 27-28.....	500	500	
Mile 28-29.....	500	500	
Mile 29-30.....	50,000	50,000	
Totals.....	4,139,609	4,036,535	103,074

## Canal Excavation to May 1, 1916.

By French companies.....	78,146,960
French excavation useful to present Canal.....	29,908,000
By Americans—	
Dry excavation.....	130,378,364
Dredges.....	116,883,500
Total.....	247,261,864 cu. yds.
May 4 to December 31, 1904.....	243,472
January 1 to December 31, 1905.....	1,799,227
January 1 to December 31, 1906.....	4,948,497
January 1 to December 31, 1907.....	15,765,290
January 1 to December 31, 1908.....	37,116,735
January 1 to December 31, 1909.....	35,096,166
January 1 to December 31, 1910.....	31,437,677
January 1 to December 31, 1911.....	31,603,899
January 1 to December 31, 1912.....	30,269,349
January 1 to December 31, 1913.....	27,127,969
January 1 to December 31, 1914.....	13,640,501
January 1 to January 31, 1915.....	13,222,373
January 1 to April 31, 1916.....	4,940,718
Total.....	247,261,864 cu. yds.

## Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Frederick J. Boulgoigne.....	23216	St. Lucia.....	Colon.....	Dredging Div.....	May 12, 1916.
Sylvester Carter.....	31849	Barbados.....	Gatun Locks.....	Gatun Locks.....	May 10, 1916.
Francis Dennis.....	20501	Jamaica.....	Panama.....	Ancon Hospital.....	May 20, 1916.
Segundo Riccenes.....	91175	Colombia.....	Camp Biedr.....	Colon agency.....	May 25, 1916.
Richard Stanley.....	94021	Russia (British subject).....	Manawa.....	Supply Dept.....	May 20, 1916.
Edward Taylor.....	81872	Bahamas.....	La Boca.....	P. R. R.....	May 13, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Acting Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below, information concerning the same being posted at clubhouses and post offices, as per the numbers of announcements indicated:

Metal mining engineer (male); \$2,400 to \$4,000 a year; examination June 20, 1916; No. 707.

Assistant sanitary engineer (male); \$1,600 a year; examination July 9, 1916; No. 730.

## TOWING LOCOMOTIVE SIGNALS.

Standardized Signals by Which Pilots Direct Control of Ships in Locks.

When a ship is being handled through the locks it is in charge of the lock pilot, who gives the necessary signals to insure the coordinate action of the electric locomotives which have the ship in tow. Small vessels, such as tugs and launches, usually make the transit under their own power, their relative displacement in the 1,000-foot chambers being so slight as to make their satisfactory management possible without exterior control; but on the usual run of commercial and naval ships at least four and sometimes six towing locomotives are employed to insure their control.

There are always two locomotives forward of the ship, to pull; and two with lines to bitts at the stern, to hold it in check; and when six locomotives are used, the two extra ones have their lines slightly forward of amidships and do most of the heavy work after the ship is under way, the locomotives forward and aft being used principally to keep the ship in line.

The signals which the pilot uses are a development from experience. When the first locomotives were placed on the lock walls, the forces in charge of the locks adapted familiar hand signals of railway service to the essential business of starting and stopping, slowing down, backing up, etc., and for attracting attention they used police whistles. It became evident very soon that more precise signals would be required, and the several men most intimately in charge of the use of the locomotives were called upon to produce a definite code.

In developing the system, the cardinal points kept in view included making all signals distinct, so as to avoid the chances of misinterpretation, as far as possible; to simulate as nearly as possible the desired direction and character of the movement of line or locomotive signaled for; to make the signals in two parts, preparatory and executory, the first for attracting attention, the second to insure prompt execution, or by omission, to leave the action unexecuted if desired, on simply dropping the hands; to make all signals at the height of the shoulders of the signaler or above, for the sake of greater visibility; and to keep the signals simple.

A code of signals was submitted by the superintendents of the locks, the testing engineer, and the electrical supervisor on August 12, 1914, and approved after being submitted to the marine forces. This code was issued in convenient booklet form in the early part of 1915, under the authority of a circular dated November 28, 1914.

In the latter part of 1915 the code was revised to include changes which experience gained with the development of traffic had shown to be desirable. At the same time there was added to in the code a set of general instructions for the care and operation of the towing locomotives.

The following is the official description of the system of signals for operating the towing locomotives which is now in effect:

## Bell Signals from Drivers.

*Two taps*—Upon receipt of a signal of a preparatory character the driver will tap his bell quickly twice. This does not apply in starting to tow, when the driver will signal after the "attention signal."

*Three taps*—To attract the attention of the

signaler the bell will be tapped three times in quick succession, repeating the signal until the signaler responds. This signal will also be used in case a driver does not properly receive a signal, in which case it will be repeated to him.

**Continuous**—This is the alarm signal and will only be used in emergency or accident. It should be used with the greatest discretion,



Pay in.

FIG. 1.—COILING.

Pay out.

and false use of it will be punished by discipline. It should be used, for instance, when a locomotive stalls, by all operators witnessing it; if a line breaks or bits pull out so that a locomotive is not attached to the tow; when the line encounters some obstruction likely to

Fig. 2.—TO MOVE FORWARD.  
(First and second positions.)

cause damage, such as miter forcing machine jaws, hand rails, etc.

#### To Attract the Attention.

The arm is extended overhead, and oscillated until the driver responds by the two-tap signal.

#### To Coil In or Out.

(Figure 1.)

The arm is extended to the front and a little above the height of the shoulder. The straight arm is then given a rotary motion such that the hand will move slowly in a circle about 15 inches in diameter at right angles to the line of sight. The movement of the hand at the top of the circle (to or from the locomotive) indicates the direction of travel of the line (in or out with respect to the locomotive).

A very slow motion indicates the use of the slow coil motor, while a very rapid motion indicates the use of the rapid coil motor.

#### To Move Forward In Accelerating a Tow.

(Figure 2.)

**Preparatory**—The arm is extended vertically, palm to the front.

**Executory**—The arm is swung forward and downward to a horizontal position, the arm being extended at all times; palm down.

#### To Keep the Windlass Clutch Engaged.

(Figure 3.)

**Preparatory**—The arm is extended to the side at the height of the shoulder; fist closed except the thumb; thumb down; palm down.

**Executory**—The forearm is carried down and under, holding the elbow stationary; the hand is brought up and in as close to the body as is possible.

**Note**—Locomotives *can not* pull on the steep inclines and ordinarily *should not* pull on the approach inclines as fuses may be blown and the power lost. This signal will therefore be used only in emergencies and will then be given by the pilot to the forward locomotives before ascending the approach inclines when the necessity for pulling during the ascent is anticipated.

In all other cases the locomotives will ascend inclines with the windlass clutch disengaged (giving free line) without a signal from the pilot.

#### To Stop Towing (Allowing Tow to Coast).

(Figure 4.)

The arm is slightly flexed. The upper arm is forward at the height of the shoulder, the hand then being opposite and at the height of the other shoulder; palm down. The hand is swung out and around in a full sweep at the height of the shoulder until the whole arm is fully extended to the side; palm down.

#### To Stop the Tow.

(Figure 5.)

**Successive positions**—The first position is the second position of the signal just given; the arm is extended to the side at the height of the shoulder; palm down.

The hand is dropped about six inches and again raised to the initial

position. The signal is repeated in the judgment of the pilot, each successive repetition calling for increased braking effort.

In case the brake of any locomotive is set too hard, or the tow is being stopped too quickly, it may be desired to release the brake.

#### To Release the Brake.

(Figure 6.)

The movement is similar to that for stopping, but the palm of the hand is up, the movement being upward instead of downward. The emphasis of the up-stroke indicates whether the brake is to be eased only or released entirely.

#### To Cast Off Lines.

*To cast off individual lines*—The pilot will

FIG. 3.—TO KEEP THE WINDLASS CLUTCH ENGAGED.  
(First and second positions.)

give the out-coil signal to the proper locomotive and the necessary verbal order to the ship's officers.

*To cast off all lines*—One blast of ship's whistle.



FIG. 4.—TO STOP TOWING. (First and second positions.)

### General Signal Meaning "Enough" or "All Right" (Figure 7.)

The arm is flexed; the upper arm extending downward, outward, and forward. The fore-

arm is nearly vertical; palm to the front.

The forearm and hand are given a vibratory motion at right angles to the line of sight, the amplitude being about one foot.

### To Change the Position of Any Locomotive.

*Preparatory*—Extend both arms toward the locomotive.

*Executory*—Swing one arm toward point where it is desired that locomotive shall go.

### Emergency Signals.

Several repeated short blasts of whistle (not less than four)—All locomotives full astern.

### Night Signals.

After dark these signals will be given by flash lights, one in each hand and will conform to those given above as nearly as possible.

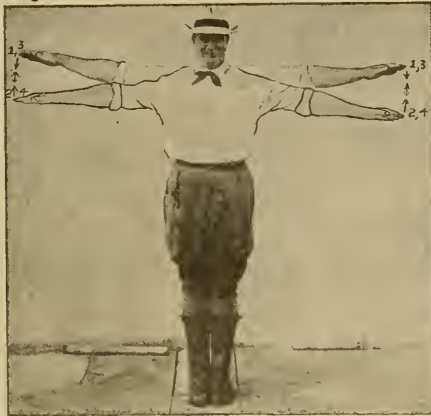


FIG. 5.—STOPPING THE TOW. (Successive position.)



FIG. 6.—EASING OR ENTIRELY RELEASING BRAKES. (Successive positions.)



FIG. 7.—"ENOUGH," "ALL RIGHT." (Successive positions.)

### EXECUTIVE ORDER.

#### Fixing the Compensation of Joint Commission Umpire.

By direction of the President it is ordered that Señor Don Victor Maria Concas Palau, Vice Admiral of the Spanish Navy, who has been appointed umpire in virtue of the provisions of Articles VI and XV of the Treaty of November 18, 1903, between the United States and the Republic of Panama in the settlement of certain claims which have come before the Joint Commission provided for in those articles, and in which the Commission has failed to render a decision owing to disagreement, be allowed Ten Thousand Dollars (\$10,000), per annum for his services including all expenses from the time of his sailing from Spain to his return thither, provided that

he shall be reimbursed for his steamship transportation from Spain to the Isthmus and return except that should he elect not to return to Spain by the most direct route, and he shall be paid a sum equal to that which he would have expended for transportation had he returned to Spain by direct route; he shall be allowed free transportation over the Panama Railroad, and such other transportation as may be necessary when traveling on official business on the Isthmus; he shall also be allowed the ordinary privileges of Government employees on the Isthmus including employees' rates at the hotels of The Panama Canal or the Panama Railroad Company on the Isthmus.

NEWTON D. BAKER,  
Secretary of War.

WAR DEPARTMENT,  
Washington, D. C., May 13, 1916.

#### Canal Zone School Athletic Meets.

Under the cooperating supervision of the Division of Schools and the Bureau of Clubs and Playgrounds, athletic meets for the Canal Zone schoolchildren were held on May 13 and 20, and May 27, at Pedro Miguel and Balboa. The first meet was for the high school pupils, under the auspices of the High School Athletic Association, and the second was for the grammar grades, III to VIII, inclusive. The high school meet comprised both land and water contests (land events at Pedro Miguel, May 13; water events at Balboa docks, May 20); the grammar school events were all on land, May 27, and embraced races, jumping, and shot-putting. The events in the high school meet were free for all, and engaged a total of about 40 contestants. Over 200 pupils took part in the grammar school meet, in which the events were in five classes, for boys and girls, according to weight—70, 85, 95, and 110 pounds, and unlimited weight.

The meets were regarded as very successful,

especially in view of the large number of pupils who took part in them. The teachers and the physical directors are encouraged to expand the work of physical education in the schools, in view of its importance and the excellent results which have been attained.

First place in the combined meet was won by the school at Pedro Miguel; second, Balboa; third, Gatun; fourth, Ancon; fifth, Cristobal; sixth, Empire.

These events have comprised the second general school meet held on the Isthmus, one having been held in 1914. This, however, was a "telephone meet" in which the contestants performed on their respective grounds. It was won by the Corozal school. A loving cup trophy for the winning school was ordered by the editor of a newspaper of Panama, but before its arrival on the Isthmus the Corozal school was closed, the physical director who had charge of the meet had returned to the United States, and the editor had died. In view of these circumstances no one would pay the express charges on the cup and it was left in the express office in Colon, on Bottle Alley, where presumably it was burned in the fire of April 30, 1915, which wiped out that section of the city. This year the Division of Schools will give a banner, which will be a permanent trophy to be transferred from year to year to the winning school.

#### Formal Opening of Balboa Yacht Club.

The clubhouse of the Balboa Yacht Club was formally opened on Monday, May 29, the eve of Memorial Day, with a dance for members and their guests. On the following day the club kept open house. In the afternoon an aquatic meet was held, with swimming, canoeing, and motor boat events, the swimming races being open to residents of the Canal Zone and Panama.

Both the dance and the meet were well attended, and the clubhouse with its facilities for dancing, swimming, and canoeing may become a valuable center of recreation for the Government employees on the Canal Zone.



## OFFICIAL CIRCULARS.

## Acting Governor.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 24, 1916.

To all concerned—Effective May 25, and during my absence on leave, Lieut.-Col. Chester Harding, U. S. Army, will be Acting Governor.

GEORGE W. GOETHALS,  
Governor.

## Acting Superintendent, Panama Railroad.

PANAMA RAILROAD COMPANY,  
OFFICE OF PRESIDENT,  
BALBOA HEIGHTS, C. Z., May 23, 1916.

To all concerned—Effective May 23, 1916, Mr. Samuel W. Heald is designated Acting Superintendent, Panama Railroad, vice Mr. Charles H. Motsett, resigned.

GEORGE W. GOETHALS,  
President.

## Assistant to the Engineer of Maintenance.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 25, 1916.

To all concerned—Effective this date, Lieut.-Col. Jay J. Morrow, U. S. Army, will, during the time the Engineer of Maintenance is acting as Governor, perform the duties and exercise the authority of the Engineer of Maintenance, under the title of Assistant to the Engineer of Maintenance.

CHESTER HARDING,  
Acting Governor.

## Acting General Inspector, Health Department.

THE PANAMA CANAL,  
HEALTH DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 22, 1916.

To all concerned—Capt. D. W. Harmon is assigned to duty in the Chief Health Office, effective to-day. He will act as General Inspector until the arrival of Major Howard.

E. E. PERSONS,  
Acting Chief Health Officer.

Approved:  
GEORGE W. GOETHALS,  
Governor.

## Acting Master of Transportation, Panama Railroad.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., May 23, 1916.

CIRCULAR No. 370:

To all concerned—Effective this date, Mr. W. F. Foster is appointed Acting Master of Transportation. All communications to Mr. Foster in this capacity should be addressed to him at Balboa Heights, C. Z.

S. W. HEALD,  
Acting Superintendent.

Approved:  
GEORGE W. GOETHALS,  
President.

## Acting Chief Clerk.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 24, 1916.

To all concerned—Effective this date and during the absence of Mr. W. P. Copeland, on leave, Mr. John H. Smith will be acting chief clerk.

GEORGE W. GOETHALS,  
Governor.

## Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 23, 1916.

CIRCULAR No. 122:

Effective this date, Mr. S. W. Heald is designated an accountable official of The Panama Canal and Panama Railroad, vice Mr. C. H. Motsett, resigned.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
CHESTER HARDING,  
Acting Governor.

## Issues of Keys, Punches, Lanterns, etc.

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., May 22, 1916.

CIRCULAR No. 371:

Effective at once, bulletin No. 97 is cancelled, and the following should govern, as to the issuing of items listed below:

Book of rules, \$1; keys, coach, \$1; keys, switch, \$1; punches, ticket, \$1; lanterns, railroad, 75 cents.

Stock of these items will be maintained by the property clerk, Balboa Heights, except lanterns, which will be kept by terminal trainmasters. A complete record of receipts and issues on each item is required.

Terminal trainmasters will be permitted to carry on hand a sufficient number of switch keys, for issue by them, to silver employees only. All issues to gold employees of switch keys, rule books, coach keys, and a ticket punches to be made by property clerk, Balboa Heights, on authority of the Master of Transportation.

No charges will be made for any items listed above to gold employees, but charges will be made for all items unaccounted for when leaving the service.

Pay roll deduction will be made against all silver employees for lanterns and switch keys. Terminal trainmasters will issue and obtain receipt in triplicate, forwarding original and one copy to property clerk, Balboa Heights, who will prepare pay roll deduction and forward one copy of same to terminal trainmaster as a credit for his account.

Silver employees on leaving the service, and upon surrender of switch key, or lantern, or both, as charge 1 to them, to terminal trainmasters, will be given a receipt for same by the latter, which upon presentation to Paymaster will be honored and a refund made for article or articles shown therein, provided that receipt bears the O. K. of the property clerk. Receipt in question will be made in quadruplicate, the original and one copy to employee, one copy to property clerk, and one copy retained. Paymasters on making refund will forward carbon to property clerk, Balboa Heights, showing payment thereon, this copy to act as a debit against the account of terminal trainmaster issuing the receipt.

No payment on time vouchers issued to employees of the railroad transportation department, Panama Canal or Panama Railroad, gold or silver, will be made unless the employee has a property release issued by the property bureau of each of the following articles, which will be definitely shown on release:

Book of rules; keys, coach; keys, switch; lanterns; punches, ticket; tools.

S. W. HEALD,  
Acting Superintendent.

Approved:  
GEORGE W. GOETHALS,  
Governor.

## Service at Pedro Miguel Hotel.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 22, 1916.

To all concerned—It has been ascertained that nearly all employees at Pedro Miguel and Miraflores are in favor of the regular 30-cent meal, similar to those served at the Paraiso hotel.

Effective Wednesday, May 24, 1916, the present 24 hours *à la carte* system at the Pedro Miguel hotel will be discontinued. A light breakfast, consisting of fruit, cereal, toast, butter, and coffee, will be served for 15 cents. Breakfast No. 2 will consist of fruit, cereal, eggs with bacon or ham, toast, potatoes, hot cakes and syrup, and coffee, and will be served for 30 cents.

Also, in order to avoid unnecessary delay, a light lunch will be put up for 15 cents, and another for 30 cents. Patrons eating regular meals will have the privilege of buying pie, ice cream, and milk, for an extra charge of five cents each. No short orders will be served before 5 p. m. Lunch at 30 cents will be served from 11 a. m. to 1.30 p. m. and dinner at 30 cents from 5 to 7.30 p. m.

A limited number of short order dishes will also be served every day from 5 p. m. to 12 o'clock midnight, when the dining room will close until 5 o'clock the next morning. Patrons using the *à la carte* menu will be served at specially designated tables.

In case of overtime work, men can be fed even at irregular hours at the request of the superior officer of their department.

F. H. SMITH,  
Acting Chief Quartermaster.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., May 29, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be procured upon request of the addressees. Requests may be made by telephone, calling No. 182 Balboa:

Adams, Jack S.  
\*Callahan, Jas. P.  
Davis, Miss Gertrude  
Dinkinson, Mrs. Lizzie A.  
Flemming, M.  
Harden, Edward B.

Preston, George D.  
Rankin, Mrs. A. M.  
Robinson, Clarence  
Stults, D. W.  
Watson, Pierce  
Zirkle, Mrs. J. J.

\*Special delivery.

## JOINT COMMISSION.

The designation "Joint Commission" has been readopted as the title of the body adjudicating claims for damages to private property in connection with the Canal. The articles in the Treaty between the United States and Panama providing for the tribunal used the term, "a joint commission," and this was generally applied to the commissions of 1905, 1907, and 1908, and was used by them in their official reports. With the convening of the fourth commission, however, on March 1, 1913, the term "Joint Land Commission" came into general use, and was used as the official title by the commission itself. The present commission, designated for convenience as the fifth, on account of changes in the personnel although it is a continuation in business of the fourth, has returned to "Joint Commission." Inserting the word "land" resulted from the fact that a considerable part of the work of the commission has been the adjudication of claims for land.

## Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 249, docket numbers as noted, May 17, 1916—In the following claims which were accorded public hearing at a session of the Commission held May 11, 1916, counsel for the United States made plea of settlement.

The evidence before the Commission is that the following payments were made in the claims shown:

Claimant.	D.K't.	Tax	Date of payment.
Maria Eduarda Garay....	1218	.....	6-7-11
José Mina Cevallo (Ceballo) 1231	.....	6-7-11	
Pedro Corraera (Correa)....	1232	176	12-,-11
			12-,-14

Evaristo Cevallo (Ceballo). 1238

The evidence before the Commission is that in addition to the payments above shown, other settlements were made direct by the agents of the United States in claims, docket Nos. 1218, 1231, and 1233, whereby in lieu of a further cash payment the United States agreed to move the houses from their sites in the Canal Zone and rebuild them in the new town of New Limon in the Republic of Panama.

In view of these settlements no further action appears to be necessary on the part of the Commission, and the foregoing claims are accordingly dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, Commissioners.

In the matter of the claim of Ruben S. Arcia, for improvements located on the lands of "Rio Indio" and "Mindi," rule of dismissal No. 251, docket No. 3278, May 18, 1916—On December 26, 1914, Ruben S. Arcia, through his attorney, C. P. Fairman, filed with the Commission his claim, Joint Commission docket No. 3278, for improvements said to have been located on the lands of "Rio Indio" and "Mindi." By letter dated February 26, 1916, said claimant requested the dismissal of this claim on account of his having made settlement direct with the representatives of the United States for the property covered thereby.

In view of this request on the part of the claimant, the above claim is hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUYE, R. J. ALFARO, Commissioners.

In the matter of the claim of R. S. Arcia, Eusebio Morales, Ricardo Arias, et al., for the lands of "Rio Indio" and "Mindi," rule of dismissal No. 251, docket No. 3277, May 18, 1916—The claim of R. S. Arcia, Eusebio Morales, Ricardo Arias, et al., for the lands known and designated as "Rio Indio" and "Mindi," was filed with the Commission on December 26, 1914. Subsequently, on March 2, 1916, the Commission received a letter from R. S. Arcia, dated February 26, 1916, in which he requests the dismissal of his claim for the reason that he had made direct settlement with the agents of the United States for the property covered by said claim.

In view of the fact that no showing had been made of any settlement with Eusebio Morales, Ricardo Arias, et al., who appear as coclaimants with R. S. Arcia in this claim, docket No. 3277, said claim is hereby dismissed only in so far as any interest the said R. S. Arcia may have had therein.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, Commissioners.

## COMMISSARY DEPARTMENT.

## SHIPPING INFORMATION.

JULY.

## Ice Cream Schedule.

## No. 1.

JUNE 5 TO JULY 2, 1916 (INCLUSIVE).		
Monday.....	June 5.....	Banana.
Tuesday.....	June 6.....	Bisque.
Wednesday.....	June 7.....	Pineapple.
Thursday.....	June 8.....	Caramel.
Friday.....	June 9.....	Chocolate.
Saturday.....	June 10.....	Peach.
Sunday.....	June 11.....	Strawberry.
Monday.....	June 12.....	Coffee.
Tuesday.....	June 13.....	Pineapple.
Wednesday.....	June 14.....	Chocolate.
Thursday.....	June 15.....	Strawberry.
Friday.....	June 16.....	Caramel.
Saturday.....	June 17.....	Chocolate.
Sunday.....	June 18.....	Bisque.
Monday.....	June 19.....	Chocolate.
Tuesday.....	June 20.....	Strawberry.
Wednesday.....	June 21.....	Bisque.
Thursday.....	June 22.....	Pineapple.
Friday.....	June 23.....	Coffee.
Saturday.....	June 24.....	Banana.
Sunday.....	June 25.....	Peach.
Monday.....	June 26.....	Strawberry.
Tuesday.....	June 27.....	Bisque.
Wednesday.....	June 28.....	Peach.
Thursday.....	June 29.....	Caramel.
Friday.....	June 30.....	Coffee.
Saturday.....	July 1.....	Pineapple.
Sunday.....	July 2.....	Chocolate.

## No. 2.

JUNE 5 TO JULY 2, 1916 (INCLUSIVE).		
Monday.....	June 5.....	Orange.
Tuesday.....	June 6.....	Chocolate.
Wednesday.....	June 7.....	Strawberry.
Thursday.....	June 8.....	Bisque.
Friday.....	June 9.....	Coffee.
Saturday.....	June 10.....	Pineapple.
Sunday.....	June 11.....	Chocolate.
Monday.....	June 12.....	Bisque.
Tuesday.....	June 13.....	Strawberry.
Wednesday.....	June 14.....	Coffee.
Thursday.....	June 15.....	Strawberry.
Friday.....	June 16.....	Bisque.
Saturday.....	June 17.....	Chocolate.
Sunday.....	June 18.....	Orange.
Monday.....	June 19.....	Strawberry.
Tuesday.....	June 20.....	Orange.
Wednesday.....	June 21.....	Chocolate.
Thursday.....	June 22.....	Coffee.
Friday.....	June 23.....	Bisque.
Saturday.....	June 24.....	Chocolate.
Sunday.....	June 25.....	Pineapple.
Monday.....	June 26.....	Chocolate.
Tuesday.....	June 27.....	Pineapple.
Wednesday.....	June 28.....	Coffee.
Thursday.....	June 29.....	Bisque.
Friday.....	June 30.....	Orange.
Saturday.....	July 1.....	Chocolate.
Sunday.....	July 2.....	Strawberry.

In addition to the above schedule, vanilla ice cream may be ordered daily.

BENJ. L. JACOBSON,  
Depot Commissary.

## Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culebra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.

The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## Additions to Stock.

Platters, meat, Booth, No. 7881, 14", ea.....	\$1.00
Cups and saucers, tea, DuPont, No. 2364, set.....	.73
Cigarettes, Wm. L. & Co., 16s, pkg.....	.02
Sect. celery, 2 oz. pkg.....	.02
Cloth, fancy skirting, yd.....	.29
Damask, table, yd.....	.92
Lawn, Persian, yd.....	1.10
Paper, shelf, lace, 5-yd sheet.....	.04
Ribbons, blue, piece.....	.14
Umbrellas, men's, 30", ea.....	1.45
Sal, mercerized, splash, cord, yd.....	.19
Dishes, sauce, 5 1/2", ea.....	.10
Jugs, cream, 4 1/2", ea.....	.38
Berils, sugar, 30s, ea.....	.76
Plates, bread and butter, ea.....	.11
Plates, dessert, ea.....	.14
Plates, breakfast, ea.....	.18
Plates, dinner, ea.....	.18
Cups, coupe, 6", ea.....	.11
Platters, meat, 12", ea.....	.32
Platters, meat, 16", ea.....	.96
Platters, chop, 12", ea.....	.92
Pots, tea, 2 1/2", ea.....	1.00
Dishes, bakers, Minton, No. 6262, 12", ea.....	6.40
Dishes, fruit, Minton, No. 6262, ea.....	1.20
Glasses, tumblers, ea.....	.90
Glasses, milk punch, ea.....	.03
Hods, coal, galvanized, 16", ea.....	.44

## Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions for the next six weeks are given in this table:

MAY.				
DATE.	Time and height of high and low water.			
Wed., May 31.....	3:27	9:43	15:33	21:56
	13.7	2.0	14.4	0.9

JUNE.				
DATE.	Time and height of high and low water.			
Thurs., June 1.....	4:07	10:13	16:12	22:33
	13.8	1.9	14.4	0.8
Fri., June 2.....	4:46	10:50	16:50	23:09
	13.8	1.9	14.3	0.9

Sat., June 3.....	5:24	11:27	17:28	23:46
	13.8	2.2	14.1	1.2
Sun., June 4.....	6:01	12:04	18:05	.....
	13.6	2.6	13.7	.....
Mon., June 5.....	0:22	6:33	12:43	18:42
	1.6	13.3	3.0	13.3
Tues., June 6.....	1:00	7:15	13:24	19:21
	2.2	13.1	3.5	12.8

Wed., June 7.....	1:40	7:52	14:12	20:00
	2.8	12.8	4.0	12.0
Thurs., June 8.....	2:26	8:34	15:06	20:48
	3.4	12.5	4.2	11.8
Fri., June 9.....	3:17	9:23	16:05	21:47
	3.8	12.4	4.2	11.5
Sat., June 10.....	4:15	10:22	17:06	22:58
	4.1	12.5	3.9	11.6

Sun., June 11.....	5:16	11:25	18:07	.....
	4.0	12.9	3.3	.....
Mon., June 12.....	0:06	6:19	12:29	19:05
	12.0	3.6	13.5	2.5
Tues., June 13.....	1:07	7:20	13:24	20:01
	12.8	2.9	14.4	1.4
Wed., June 14.....	2:00	8:17	14:15	20:53
	13.8	2.0	15.2	0.2

Thurs., June 15.....	2:53	9:10	15:06	21:43
	14.7	1.0	16.0	-0.7
Fri., June 16.....	3:44	9:59	15:58	22:29
	15.5	0.2	16.5	-1.4
Sat., June 17.....	4:36	10:46	16:50	23:15
	16.1	-0.3	16.7	-1.7
Sun., June 18.....	5:27	11:32	17:43	.....
	16.5	-0.4	16.6	.....

Mon., June 19.....	0:01	6:19	12:24	18:34
	-1.5	16.6	-0.1	16.1
Tues., June 20.....	0:50	7:09	13:16	19:25
	-1.0	16.3	0.4	15.4
Wed., June 21.....	1:40	8:00	14:12	20:17
	-0.1	15.7	1.2	14.7
Thurs., June 22.....	2:35	8:50	15:10	21:13
	1.0	15.0	1.9	13.4

Fri., June 23.....	3:33	9:46	16:12	22:18
	2.1	14.1	2.6	12.6
Sat., June 24.....	4:33	10:49	17:13	23:29
	3.0	13.4	3.0	12.0
Sun., June 25.....	5:35	11:55	18:15	.....
	3.6	13.1	3.1	.....
Mon., June 26.....	0:39	6:42	12:55	19:16
	12.0	3.8	13.0	3.0

Tues., June 27.....	1:33	7:37	13:48	20:10
	12.1	3.7	13.1	2.6
Wed., June 28.....	2:28	8:29	14:34	20:57
	12.5	3.4	13.4	2.1
Thurs., June 29.....	3:12	9:14	15:17	21:39
	12.9	2.9	13.6	1.6
Fri., June 30.....	3:53	9:56	15:56	22:17
	13.2	2.5	13.9	1.2

DATE.	Time and height of high and low water.			
Sat., July 1.....	4:31	10:33	16:35	22:53
	13.5	2.2	14.0	1.0
Sun., July 2.....	5:08	11:10	17:12	23:28
	13.8	2.1	14.1	1.0
Mon., July 3.....	5:44	11:46	17:48	.....
	13.9	2.1	14.0	.....
Tues., July 4.....	0:02	6:18	12:22	18:23
	1.2	14.0	2.3	13.8
Wed., July 5.....	0:36	6:50	12:59	18:57
	1.5	13.9	2.5	13.5
Thurs., July 6.....	1:11	7:22	13:39	19:32
	2.0	13.8	2.9	13.1
Fri., July 7.....	1:49	7:56	14:24	20:12
	2.5	13.6	3.2	12.6
Sat., July 8.....	2:33	8:37	15:15	21:00
	3.1	13.3	3.4	12.1
Sun., July 9.....	3:25	9:27	16:16	22:02
	3.5	13.1	3.5	11.8
Mon., July 10.....	4:25	10:31	17:19	23:17
	3.8	13.0	3.4	11.9
Tues., July 11.....	5:34	11:44	18:28	.....
	3.8	13.3	2.8	.....
Wed., July 12.....	0:31	6:46	12:54	19:34
	12.4	3.4	13.9	1.9

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sealvel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 06 midnight to 23 59 (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3.47 p. m.

## Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday, temporarily to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line, and are made every week, on Thursdays, under the prevailing schedule. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* and the *Cristobal* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, June 26 and July 24, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the sailings on June 26 and July 24.

†When the vessel sailing Thursday is the *Advance* or the *Cristobal*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

Maximum Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun, and Miraflores Lakes for the week ending at midnight, Saturday, May 27, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Athajuela	Gambon	Gatun Caste	Miraflores Lake.
Sun., May 21.....	129.25	94.76	6.43	6.47	54.15
Mon., May 22.....	28.15	94.43	6.41	6.42	54.02
Tues., May 23.....	29.85	95.06	6.50	6.44	54.47
Wed., May 24.....	127.70	94.10	6.45	6.43	54.33
Thurs., May 25.....	131.85	96.68	6.51	6.49	54.25
Fri., May 26.....	129.80	95.28	6.53	6.45	54.52
Sat., May 27.....	128.0	94.40	6.43	6.41	54.40
Heights of low water to nearest foot.....					
	125.0	91.0			

## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., May 23, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
May 22....	Alfred Nobel.....	Norwegian.....	Dampsselsk Concordia.....	Norfolk.....	Tocopilla.....	Ballast.....	6,036	4,297	
May 23....	Aysen.....	Chilean.....	South American S. S. Co.....	Cristobal.....	Valparaiso.....	General.....	4,393	3,042	
May 24....	Adriatic.....	British.....	W. H. Cookline.....	Cardiff.....	Esquimalt.....	Coal.....	4,275	3,361	2,390
May 24....	Urubamba.....	Peruvian.....	Peruvian Steamship Line.....	Cristobal.....	Callao.....	General.....	1,404	1,957	3,118
May 26....	Polaris.....	British.....	Houlder Middleton & Co.....	Norfolk.....	Taltal.....	Coal.....	4,655	3,618	2,567
May 26....	Copac.....	British.....	New York & Pacific S. S. Co.....	New York.....	Mollendo.....	General.....	4,000	3,220	2,206
May 27....	Boikal.....	Russian.....	Northern S. S. Co., Ltd.....	Cabaret.....	Taltal.....	Ballast.....	2,397	1,473	
May 27....	Inverkip.....	British.....	Inverkip S. S. Co., Ltd.....	Baltimore.....	Valparaiso.....	General.....	6,500	4,803	3,620
May 27....	Hoanick Hall.....	American.....	Norton Lilly & Company.....	New York.....	Vladivostok.....	General.....	7,000	6,048	4,348
May 27....	Eurymachus.....	British.....	Alfred Holt & Company.....	New York.....	Vladivostok.....	General.....	7,000	5,701	3,913

† Cargo declaration on this vessel could not be obtained from agent.

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

May 21....	Tricolor.....	Norwegian.....	W. Wilhelmsens.....	Antofagasta.....	Archangel.....	Nitrates.....	6,200	4,442	3,360
May 21....	Crown of Toledo.....	British.....	Crown S. S. Company.....	San Francisco.....	Liverpool.....	Salmon, fruit, and lumber.....	8,888	7,730	5,444
May 22....	Oyletic.....	British.....	Bank Line.....	San Francisco.....	London.....	Distillate.....	8,575	6,271	4,393
May 23....	Lewisham.....	British.....	Watts, Watts & Co.....	Cruz Grande.....	Philadelpia.....	From ore.....	4,150	3,021	2,103
May 23....	Almora.....	British.....	Donaldson Line.....	Tocopilla.....	Newport News.....	Nitrates.....	6,621	4,879	3,689
May 23....	Palena.....	Chilean.....	South American S. S. Co.....	Lota and way ports.....	Colon.....	General.....	1,112	3,639	2,537
May 23....	Clan Alpine.....	British.....	Cayzer, Irvine & Co.....	Calita Colosa.....	Colon, for orders.....	Nitrates.....	5,015	3,642	2,599
May 24....	Jamaica.....	British.....	Pacific Steam Nav. Co.....	Buenaventura.....	Colon.....	General.....	5,701	1,170	620
May 24....	Quilque.....	British.....	Pacific Steam Nav. Co.....	Valparaiso.....	Colon.....	General.....	2,880	3,922	2,231
May 24....	Manaro.....	Peruvian.....	Peruvian Steamship Line.....	Callao.....	Colon.....	General.....	3,021	4,639	2,673
May 25....	Birkhall.....	British.....	West Hartlepool Steam Nav. Co.....	Taltal.....	Marseilles.....	Nitrates.....	6,550	4,671	3,359
May 25....	British Yeoman.....	British.....	Balfour Guthrie.....	San Francisco.....	Colon, for orders.....	Flour.....	2,962	1,996	1,821
May 25....	Salvador.....	British.....	Pacific Steam Nav. Co.....	Salina Cruz.....	Colon.....	General.....	566	1,190	692
May 25....	Manapi.....	British.....	Pacific Steam Nav. Co.....	Guayaquil.....	Colon.....				

## ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

May 28....	Polosi.....	Pacific Steam Nav. Co.....	London.....						
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## EXPECTED ARRIVALS FROM PACIFIC.

May 29....	Jacob Luckenbach.....	Luckenbach S. S. Company.....	San Francisco.....	May 30....	Proteus.....	United States Navy.....	Honolulu.....
May 29....	Valdivia.....	British Admiralty.....	Chilean ports.....	June 4....	Bogota.....	Pacific Steam Nav. Co.....	So. Pacific ports.....

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
				May 22....	Orubian.....	Leyland Line.....	New Orleans.....

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

May 30....	Puerto Rico.....	French Line.....	Saint Nazaire.....	June 3....	Leonidas.....	United States Navy.....	Bristol.....
June 3....	Camito.....	Elders & Fyffes Line.....	Port Limoa.....	June 3....	Camito.....	Elders & Fyffe Line.....	Saint Nazaire.....
				June 3....	Puerto Rico.....	French Line.....	

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## \*ARRIVALS.

## \*DEPARTURES.

May 23....	Alicia and barge.....	Panama Trad. & Trans. Co.....	Camp Sabbath.....	May 26....	Alicia and barge.....	Panama Trans. & Trad. Co.....	Camp Sabbath.....
May 23....	Academy (schooner).....	D. Loero.....	Sea.....	May 26....	Academy.....	D. Loero.....	Panama.....
May 25....	Hercules (tug).....	Shipowner's M. Towboat Co.....	San Francisco.....	May 26....	Hercules.....	Shipowner's M. Towboat Co.....	San Francisco.....
May 26....	Geo. W. Elder.....	North Pacific S. S. Co.....	Tocopilla.....	May 26....	Geo. W. Elder.....	North Pacific S. S. Co.....	San Francisco.....
May 27....	Clapet No. 2.....	National Navigation Co.....	Panama.....	May 27....	Clapet No. 2.....	National Nav. Company.....	Panama.....

\*Other than ships passing through the Canal.

## Coal.

Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.

## Launch Service to Taboga.

The following is the schedule of the launch service between Balboa and Taboga Island:  
From Balboa to Taboga—The launch Taboga sails from Balboa dredge landing to Taboga daily, including

Sundays, at 9.40 a. m. On Saturdays, Sundays, and holidays an additional trip is made at 5.30 p. m.  
From Taboga Island to Balboa—Daily, including Sundays, at 10.45 a. m.; Saturdays, Sundays, and holidays, an additional trip at 7 p. m.

## Sallings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Sails	Arrives
Zacapa.....	U. F. C.	May 24.....	May 31
Alipanca.....	P. R. R.	May 25.....	May 31
Atenas.....	U. F. C.	May 27.....	June 4
Colon.....	P. R. R.	June 1.....	June 7
Carrillo.....	U. F. C.	May 31.....	June 7

## CRISTOBAL-COLON TO NEW YORK.

Metopan.....	U. F. C.	May 29.....	June 6
Panama.....	P. R. R.	June 1.....	June 7
Almarante.....	U. F. C.	June 1.....	June 8
Pastores.....	U. F. C.	June 5.....	June 12

## NEW ORLEANS TO CRISTOBAL-COLON.

Atenas.....	U. F. C.	May 27.....	June 3
Heredia.....	U. F. C.	May 31.....	June 5
Abangares.....	U. F. C.	June 3.....	June 10
	U. F. C.	June 7.....	June 12

## CRISTOBAL-COLON TO NEW ORLEANS.

Parismina.....	U. F. C.	June 4.....	June 9
Atenas.....	U. F. C.	June 4.....	June 12
Cartago.....	U. F. C.	June 11.....	June 16
Heredia.....	U. F. C.	June 11.....	June 19





## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

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Yearly subscriptions are entered as beginning at the first of the quarter of the year in which received and expire at the beginning of the corresponding quarter of the following year. When subscriptions are received after the beginning of a quarter the back numbers which have been issued during that quarter will be forwarded when available.

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Remittances for subscriptions or for bound volumes may be forwarded to The Panama Canal, Washington, D. C., U. S. A., or to The Canal Record at the address given below.

Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Progress of Excavation in the Cut in May.

The material excavated from the slides on the east and west banks of the Canal north of Gold Hill during the month of May amounted to 1,110,655 cubic yards. In addition, 23,248 cubic yards were excavated from other parts of the Cut in maintenance work. The spoil which was rehandled by dredges, and is not included in the totals, amounted to 180,193 cubic yards.

The removal of a total of 1,133,903 cubic yards in May, when 123 ships passed through the Canal, compares favorably with the excavation of 1,034,708 cubic yards in April, during half of which month there was no traffic, and with 1,142,334 cubic yards in March, when the Canal was closed to traffic. Since the Canal has been reopened the interruption of the dredging operations by the passage of the ships has amounted to an average of approximately four hours a day for the dredging fleet as a whole.

In order to expedite excavation of material from the slides the rule was adopted of handling ships through only on alternate days, but with the increase of traffic the rule has not been adhered to strictly, and ships are passed through practically on arrival. Since the reopening of the Canal one ship of 30-foot draft has made the transit, and 10 of a draft of 29 feet or over. The ship combining the greatest length and beam with deep draft was 427 feet long by 54 feet six inches beam and drew 29 feet.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, June 5, amounted to 264,859 cubic yards. The dredges rehandled 12,070 cubic yards of spoil in disposing of it, but these figures are not included in the totals, which are for primary excavation and represent decrease of matter in the Canal prism.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Cascadas	15-yard dipper	81,340
Gambou	15-yard dipper	62,810
Paraiso	15-yard dipper	59,555
Corozal	Ladder	36,060
No. 83	Pipeline suction	12,070
Culebra	Seagoing suction	
No. 86	Pipeline suction	15,649
No. 84	Pipeline suction	9,445
No. 5	Belgian ladder	

The aggregate of primary excavation from the bases of the east and west slides at Culebra since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the hour of midnight on June 5, 1916, has amounted to 14,471,094 cubic yards. This has been an average of 734,167 cubic yards per month from these slides alone.

In the current fiscal year, since July 1, 1915, the primary excavation in the Cut amounted to 10,347,728 cubic yards, to midnight of Monday, June 5. This has been an average of 30,345 cubic yards per day, or approximately 923,709 cubic yards per month.

#### Accidents to Furnaces on Two Tugs.

The crown of the furnace of the tug *Gorgona* collapsed on May 31, apparently as the result of becoming caked with carbon, which, in turn, resulted from the use of the forced draft equipment installed on the tug at the time of its construction. A similar accident occurred on the *Tavernilla*, sister of the *Gorgona*, a few days later. Temporary repairs have been made to the furnaces, and the forced draft equipment has been removed, longer funnels being placed on the boats to increase the natural draft. The *Gorgona* was returned to service on June 2, and the *Tavernilla* on June 6. Both tugs are working satisfactorily under natural draft.

#### Burden of Cargo on Panama Railroad Steamship Line.

Following the departure of the *Allianca* of the Panama Railroad Steamship Line from Cristobal for New York on Thursday, June 8, there will be left on the wharves and piers on the Isthmus approximately 35,000 tons of cargo destined to New York, with papers calling for shipment over the Panama Railroad Line.

The ships coming to Cristobal from ports on the west coast of South America since the reopening of the Canal have been bringing two and three times their previous normal cargoes. The world-wide shortage of shipping

has greatly increased the loading of the west coast lines, and the fleet with which the Panama Railroad was formerly able to handle the Atlantic traffic under its cocarrier agreements is taxed to keep pace with the increased deliveries. The demand on the Panama Railroad line has naturally been increased by the absence of the former services to New York of the Hamburg-American and Royal Mail lines.

The normal cargo-carrying capacities of the Panama Railroad ships are as follows: *Advance*, 2,100 tons; *Allianca*, 2,800 tons; *Colon* and *Panama*, 3,500 tons; *Ancon* and *Cristobal*, 10,000 tons. The *Colon* is out of service at present, being overhauled in dry dock; and when she returns to service the *Panama* will be sent to dry dock. When all the space in the Army transport *Kilpatrick*, which makes a round trip between New York and Cristobal about once a month, is available for commercial cargo, she can lift approximately 3,500 tons.

#### Use of the "Kilpatrick" in Supplementing Service of Panama Railroad Steamship Line.

Arrangements have been completed between the Quartermaster Corps and The Panama Canal by which the transport *Kilpatrick*, which is to ply back and forth between the Canal Zone and New York, may be used to carry Canal employees, members of their families, and their domestic servants. The *Kilpatrick* will also carry cargo for The Panama Canal, when space is available beyond the needs of the Army. Inasmuch as the use of the ship is an accommodation to the Canal, designed to relieve the congestion on the Panama Railroad ships, the agreement provides that the assignment of such passengers will be subject to the requirements of the Army and Navy, which will have first claim upon all accommodations available on the transport.

The fares for transportation on the *Kilpatrick* will be the same as for transportation on the ships of the Panama Railroad Steamship Line.

The *Kilpatrick* sailed for New York on May 4, returned to Cristobal on May 31, and sailed for New York on Monday, June 5. It is expected that the next sailing from Cristobal will be in the early part of next month, but the vessel will not sail on fixed schedule. Applications for transportation on the *Kilpatrick* should be made in the same manner as for transportation on Panama Railroad ships.

#### Arrival of the "Ancon."

The steamship *Ancon* of the Panama Railroad Steamship Line sailed from New York for Cristobal on May 31 at 7 p. m. and is due to arrive on Thursday, June 8. She is carrying 137,142 bags of cement, 2,870 tons of merchandise, and 44 passengers. On her return voyage she will carry passengers.

## WEATHER CONDITIONS.

In the Canal Zone during the Month of May, 1916.

The rainfall for the month was above normal at nine stations, and deficient at nine stations. Over the Pacific section there was a marked excess of rainfall, while over the central and Atlantic sections the rainfall was generally deficient. Totals ranged from 14.23 inches at Brazos Brook to 8.41 inches at Monte Lirio. The greatest amount of precipitation recorded on any one day was 5.42 inches, at Balboa on the 26th, which together with 4.70 inches recorded at Balboa Heights on the same day, constituted the only rains in excess of four inches. The record for a day's rainfall at Balboa and Balboa Heights is 7.57 inches and 7.23 inches, respectively.

The May rainfall for three years follows:

STATIONS.	1914	1915	1916	Station average.	Years of record.	Rainy days, 1916.
<i>Pacific Section.</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>	<i>Ins.</i>		
Balboa.....	8.16	7.92	12.64	8.46	18	20
Balboa Heights.....	6.98	6.42	12.50	8.89	18	20
Miraflores.....	10.16	12.38	11.10	10.55	8	20
Pedro Miguel.....	13.16	10.24	13.10	11.49	9	18
Rio Grande.....	10.77	9.32	11.22	10.91	12	21
<i>Central Section.</i>						
Culebra.....	13.26	7.28	10.91	11.10	25	18
Camacho.....	14.15	7.56	10.93	11.70	10	20
Empire.....	12.87	8.56	9.92	10.01	12	17
Gambao.....	10.28	5.10	12.25	10.89	35	22
Juan Mina.....	8.40	6.91	9.46	10.79	6	24
Alhajuela.....	5.66	8.20	12.40	12.00	16	19
Vigia.....	7.47	10.88	12.41	11.69	8	23
Frijoles.....	14.33	10.71	8.45	12.97	5	26
Trinidad.....	13.58	8.51	12.09	13.59	9	20
Monte Lirio.....	11.42	11.17	8.41	13.22	9	26
<i>Atlantic Section.</i>						
Gatun.....	10.91	10.24	11.32	14.57	12	23
Brazos Brook.....	13.17	6.76	14.23	13.6	10	35
Colon.....	17.76	7.45	9.28	12.58	46	21
Bocas del Toro.....	20.77	7.07	10.12	10.74	8	21

The estimated rainfall over the Gatun Lake watershed was 15 per cent below the average, and over the Chagres River basin above Alhajuela, 17 per cent below the average.

The air temperature was slightly below normal on the Pacific coast, and approximately one degree Fahrenheit above the average on the Atlantic. The atmospheric pressure was approximately normal, while the relative humidity, daytime cloudiness, and temperature of the sea water were above normal on both coasts. There was a slight deficiency of both the wind movement and evaporation.

No fogs were observed at either coast station, and only a few fogs were observed at interior stations.

Elevations of Gatun Lake, in feet above mean seal level, were as follows: Maximum, on the 17th, 86.51; minimum, on the 5th, 85.90; mean for the month, 86.26.

Evaporation from the lake surface amounted to 5.290 inches during the month.

The following is a summary of the climatological conditions at the ends of the Canal:

STATIONS.	Pressure (reduced to mean of 24 hours.)	Temperature.						Mean relative humidity.	Precipitation.				Wind.			
		Mean.	Maximum.	Date.	Minimum.	Date.	Total inches.		Stations average.	Days of .01 inch or more.	Total movement (miles).	Prevailing direction.	Max. velocity in miles.	Direction.	Date.	
Colon.....	29.84	81.6	90	May 11	72	May 27	88	9.38	12.58	21	5,790	S.E.	31	N.W.	May 26	
Balboa Heights...	29.84	79.8	91	May 2	69	May 27	89	12.59	8.89	20	4,610	N.W.	31	N.E.	May 25	

\*Formerly Ancoo.

## United States Shippers by Panama Railroad Line to Designate Pacific Cocarrier.

The New York office of the Panama Railroad and Panama Railroad Steamship Line has issued a notice containing this paragraph: "Shippers will kindly note that all bills of lading covering freight consigned to ports beyond Panama must without fail show name of connecting carrier. Please select the steamship line on the Pacific side (see circular No. 17-A) by whose steamers you desire cargo forwarded, and indicate same on all shipping documents."

Circular No. 17-A referred to above gives lists of the ports of call of the Pacific coasting lines calling at Balboa. The gist of it was published in THE CANAL RECORD of May 10. The circular urged shippers to designate the Pacific carrier, and the notice quoted above supplements the circular by insisting on designation.

## Amending Freight Tariff between New York and Cristobal.

The freight classification and tariff No. 17 of the Panama Railroad Steamship Line, governing class and commodity rates between New York and Cristobal or Colon, has been amended by supplement No. 1, effective May 16, 1916. The changes are slight, being minor reductions in rates on classes 2, 3, and 4. The old and the new rates are as follows:

Class.	Per cubic foot.		Per 100 lbs.	
	Old.	New.	Old.	New.
No. 2.....	\$0.21 1/2	\$0.21	\$0.43 1/2	\$0.42
No. 3.....	.16 1/2	.16	.32 1/2	.32
No. 4.....	.13 1/2	.13	.26 1/2	.26

## System for Protecting Gasoline Tank at Balboa.

Work has been begun on the installation of a system for protecting the large gasoline storage tank at Balboa against accidental ignition of its contents. The system is that known as the Martini-Huenke, and the principle is the maintenance of a blanket of inert, noninflammable gas in the tank above the surface of the gasoline.

The contractor's bid for the installation is \$2,950, which includes the furnishing of a two-cylinder gasoline engine, one cylinder of which acts as a compressor, in addition to scrubbers and an inert gas storage tank, with the relief valves, safety manometers, and other auxiliaries necessary for the proper installation of the outfit. The Panama Canal is required to furnish all piping between the gas storage tank and the gasoline tank, and all the foundations.

It is the intention to provide similar protection for the gasoline storage tank at the Atlantic terminus tank farm if the system is found satisfactory at Balboa.

The gas blanket consists of practically pure nitrogen, which is supplied from the exhaust of one cylinder of the engine referred to

above, and compressed by the other cylinder. Itself the residue from a thorough combustion of gasoline, the gas contains practically no inflammable portion; and the power generated in its combustion serves to drive the compressor, which delivers the gas to a high pressure storage tank, from which it can be expanded into the gasoline storage tank as gasoline is withdrawn.

## Storehouse for Electrical Goods at Balboa.

Work will soon be begun on the erection of a permanent electrical storehouse at Balboa. It is to be situated on the west side of the road extending from the Canal clubhouse at Balboa to Balboa shops, and will lie to the south of the substation and diagonally across the road from the new ice plant.

The building will be three stories in height, with plan dimensions of 164 by 62 feet. It will be built of concrete, and finished in the general style of the other permanent concrete buildings along the Canal. The storehouse will be in charge of the Supply Department, and the electrical goods now stored in building No. 5 of Balboa shops will be transferred to it.

In order to clear the site, forces of the Building Division have moved the frame structure directly south of the substation, used as a district shop and field office by the Electrical Division. It was raised on cribbing of old railroad ties and skidded across the road on pipes used as rollers.

## Stocking Balboa Coaling Plant in Preparation for Tests.

Stocking the dry storage area of the new coaling plant at Balboa was begun in the morning of May 29 and to the close of work on Tuesday, June 6, a total of 3,121 tons of coal had been dumped. The coal is hauled across the Isthmus from the wharf at Cristobal in steel dump cars and the cars are dumped from a track running the length of the area. About 7,000 tons will be placed in the dry storage at this time for use in connection with the tests of the reclaiming system.

The tests on the equipment of the plant can not be made until a passage through the cofferdam which formerly protected the entrance to the unloader wharf is cut sufficiently wide and deep for the entrance of a collier. The opening of the cofferdam is under way, but its progress depends on the extent to which dredging equipment can be spared from the slides in Gaillard Cut. The maintenance of the channel takes precedence over other work.

## Dispensary Hours.

The following is a tabulation of the hours at which the Canal dispensaries are open for free consultation with the district physicians by Government employes and members of their families, and for the filling of prescriptions. Emergency calls may be sent to the quarters of the district physicians at other than dispensary hours:

Location.	Week days.			Sundays and holidays.
	Morning	Afternoon	Morning	
Balboa.....	8-11.30	3.00-5.30	9.00-10.00	
Ancoo.....	8-10.00	12.00-1.00	8.00-10.00	
		4.00-6.00		
Pedro Miguel.....	8-11.00	3.00-5.30	9.00-10.00	
Paraiso.....	8-11.30	3.30-5.30	8.30-9.30	
Gatun.....	8-11.00	4.00-6.00	8.30-9.30	
Colon.....	8-10.00	4.00-6.00	8.00-10.00	



## THE "RELIANCE" RENOVATED.

### Thorough Overhauling and Substitution of Oil Burning in Large Tug.

The tug *Reliance*, longest and fastest of the Canal tugs and, with the new *Gorgona* and *Tavernilla*, the most powerful type in use on the Isthmus, has been practically rebuilt from the hull up. The tug was taken out of commission on April 13, dismantled of smokestack, boilers, masts, and part of the deck house at the repair wharf at Paraiso, and towed to the dry dock at Cristobal on April 17. After varied work on the tug had been done at the dry dock she was towed back to Paraiso on May 22, and the funnel, boilers, etc., which had been taken out prior to her departure for dry dock were replaced. In addition, the electrical work throughout the boat was entirely renewed, and everything required was done to place the tug in first class operating condition.

The engines were started in the renovated tug in the evening of Friday, June 2, and run all night. The following morning at 10 o'clock the *Reliance* was taken out for a trial trip, under the supervision of the Superintendent in charge of the Dredging Division and the Superintendent of the Mechanical Division. The run was made through Gaillard Cut to Gamboa and beyond, in the lake channel, to a point beyond Darien. The operation of the machinery was satisfactory, and with the use of fuel oil in place of coal in the furnaces, the heat was considerably lessened in the boiler and engine rooms. In the open channels the tug made as high as 14 knots. The return to Paraiso was made slightly before one o'clock, and in the afternoon the *Reliance* was placed in regular service in towing barges between the dredges and the dumping grounds.

While the *Reliance* was in the dry dock the hull was chipped and painted inside and out. In addition, in the interior one coat of bitumastic enamel was applied to the hull plates from the forecabin to the after fresh water tank. The coal bunkers were cut out. The main engine was stripped. The following structural work was done:

From the collision bulkhead to the engine room bulkhead, all frames, including the intermediate and web frames, reverse frames on alternate frames, keelsons, stanchions, and deck beams in the forecabin, forecabin bulkhead, all floor plates, fresh water tank in forecabin, ladders to deck, and boiler saddles, were renewed.

Sixteen shell plates were removed, straightened and replaced. From the forecabin head to the engine room all beams and side stringer plates on the deck were renewed and the hull was stiffened with channels and angles.

From the engine room aft, seven frames, and the side-keelsons, engine room floor, and aft fresh water tank were renewed.

The deck house was rebuilt complete, with a new mess room bulkhead, and a new bulkhead between the engine room and the engineers' room.

The coal bunker space was refitted as an oil bunker, extending from the top of the deck house to the keel, with the necessary swash plates and a communicating tunnel extending between the fire room and the engine room. This bunker has a capacity of 850 barrels.

New foundations were installed under the towing machine. The steering engine foundation was raised. Reinforcing plates were placed under the bitts, towing machine, cap-

stan, and steering engine, and the entire deck was relaid. The bulkheads were faired and the bulkheads stanchions and rail were renewed. All guards, with the angle and strap irons, were renewed and the rudder post was spliced.

The following work was done on the main engine and the auxiliary machinery:

The main engine was stripped, the intermediate pressure cylinder rebored, the high pressure and intermediate pressure cylinders were fitted with new bull and piston rings; valve stems were renewed and the valve gear refitted; the piston rods and crank shaft were trued, the main bearings remetalled, the holding-down bolts renewed, thrust bearing overhauled; crank, thrust, and tail shaft bearings remetalled and bored, the stern bearing being overhauled; shafts were lined up, coupling bolts renewed, and new tail shaft and wheel were installed.

A new and larger fire pump and a new steering engine were installed, and the dynamo engine and the air and circulating pumps overhauled complete. All piping throughout the ship was renewed.

The *Reliance* was formerly the *M. E. Scully* and was purchased under that name in March, 1908, from the Scully Towing and Transportation Company. She arrived on the Isthmus on September 21, 1908, and went into the service of the dredging section of the Atlantic Division, her principal use being in towing barges between Porto Bello and a wharf alongside the French canal on the west side of Gatun Locks. On February 11, 1912, the *Reliance* left Cristobal for Balboa by way of the Strait of Magellan, towing three barges. She arrived at the Pacific entrance to the Canal on June 17, having been 126 days (86 steaming days) on the voyage of approximately 10,500 miles. The *Reliance* was used in the Pacific entrance service until December 2, 1913, on which date she was transferred through Miraflores and Pedro Miguel Locks to Gaillard Cut. Shortly afterward she was sent to Cristobal with a tow, and by this trip completed the circumnavigation of South America.

### Service of California South Sea Navigation Company.

The list of the ports of call of the several steamship services out of Balboa published in THE CANAL RECORD of May 10 has been added to by the inclusion of the California South Sea Navigation Company among the Pacific carriers calling at the Canal. The ships of this line have not been passing through the Canal to Cristobal, but discharging and lifting cargo at Balboa.

The ports of call of this line, north of Pana-

ma, are Acapulco, Amapala, Champerico, Corinto, La Libertad, La Union, Manzanillo, Mazatlan, Puntarenas, Salina Cruz, San Blas, San Jose de Guatemala, San Juan del Sur.

The service is irregular. Ships of the company which have been at Balboa recently are the *O. M. Clark*, *Coaster*, *Mayfair*, and *Acme*. The *Roahe*, one of the company's ships, was lost at sea on May 9, while on the way from San Francisco to Valparaiso, via 'way ports. Included in her cargo was a quantity of lumber for the Supply Department of The Panama Canal. It is reported that the cargo shifted while the ship was rolling in heavy seas, under a gale, and that the ship turned turtle and sank, about 150 miles south of San Francisco. Of the crew of 50, only nine have been accounted for; they drifted into Port San Luis in a lifeboat, and six of them had died from exposure. It is believed that all the others, among whom are included all the officers, were lost.

### The "Academy" Unable to Make Guayaquil.

The schooner *Academy*, which came into Balboa on November 30, 1915, after a voyage of many hardships and was attached by the United States marshal for the District of the Canal Zone in pursuance of a libel action brought by her former master, was sold in April, after the dismissal of the libel, to a citizen of Peru. She cleared from Balboa for Guayaquil on April 23. On May 23 she came back into the harbor at Balboa, having been at sea 30 days, unable to make her port against the head winds she encountered.

The centerboard of the *Academy* is jammed in its raised position, with the result that the schooner is unable to sail by the wind. In the month that the boat was out she encountered contrary winds on the course to Guayaquil, but on the return to Balboa favorable winds prevailed. On May 26 the *Academy* was towed by the gasoline launch *Grace* to the roads of the harbor of Panama City, where she is now lying at anchor.

### Gasoline Launch on Long Voyage with One Man Aboard.

The gasoline launch *Sir Francis* arrived at Balboa in the morning of June 3 for transit of the Canal, on the way from Seattle and way ports to Atlantic ports of the United States, and Nova Scotia. The launch is only 32 feet in length by 10 feet beam, with a draft of three feet two inches. Her master, Mr. Thomas Drake, is the only person aboard her, and he is making the long and perilous voyage alone to establish a record in the navigation of small boats. He left Seattle in July, 1915.

### Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Manuel Campos.....	101118	Colombia.....	Camp Bierd....	Supply Dept....	June 2, 1916
Miguel Casatti.....	29893	Panama.....	Panama.....	Mechanical Div.	May 24, 1916.
Sidney John, alias John Sidney.	73294	Dominica.....	Rio Gran le....	Dredging Div....	May 5, 1916.
Saint Peratin.....	90314	Martinique....	Mount Hope....	P. R. R.....	May 31, 1916.
Charles Richards.....	73346	Jamaica.....	Paraiso.....	Dredging Div....	May 27, 1916
Charles Spence.....	87129	Jamaica.....	Camp Bierd....	P. R. R.....	May 30, 1916.
George S. Woods.....	1221	U. S. A.....	Ancon.....	Mechanical Div.	Nov 12, 1916

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Acting Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



## ALTERING THE "CARIBBEAN".

### Work Performed on Seagoing Suction Dredge to Fit Her for Cattle Service.

Owing to the scarcity of vessels suitable for transporting cattle for slaughter for the commissaries, the Panama Railroad steamers *Cristobal* and *Ancon* have made several trips for cargoes of cattle. Their use for this purpose was objectionable on account of their large size and the need for their services on their regular runs to New York.

Soon after the beginning of the year, these demands became such that it was apparent that the ships could not be used much longer for transporting cattle except at a cost which would be prohibitive. The Supply Department, therefore, began to look about for a substitute. No suitable vessel in good condition could be obtained at a price which was practicable, and the suggestion was made that the seagoing dredge *Caribbean* be adapted to this purpose. Bids for her sale had not been high enough to justify disposing of her, but her retention involved a considerable cost for maintenance, and the only service she was rendering was that of floating air compressor plant for operating drills on the banks of the Canal in the Cut.

To relieve her from the service, after it was decided that she promised the best solution of the problem of cattle transportation, it was necessary to fit up a substitute air compressor plant. This was done at Balboa shops, one of the large rock barges being used for the purpose. Two of the 500-horsepower Babcock and Wilcox boilers formerly in service at the Gold Hill pumping plant were installed in the hold amidships with the stack between them. The boilers were arranged for oil fuel and the oil stored in the peak compartments. One 2,500-foot compressor, from those installed in the Empire and Rio Grande air compressor plants, was then installed on deck on either end of the barge, thus fitting her for delivering 5,000 feet of free air per minute at 100 pounds pressure. This work was completed on May 16.

In the meantime, work to repair the *Caribbean* and to fit her for cattle service was proceeded with by the Paraiso shops while she was still delivering air for drills. This work consisted of making repairs to the structure where necessary; removing deck winches and other apparatus which was unnecessary for the new service but which occupied deck space; fitting bulwarks of steel plate about six feet high about the upper deck, and a breakwater across the bow; laying a complete wooden upper deck; making minor repairs to main engines, and auxiliary machinery, and installing foundations for deck winches to operate the booms when handling boats or hoisting cattle on board by the horns, should this be necessary.

This work was well advanced by the time the air compressor barge was delivered, and on May 23 the *Caribbean* was sent down to the dry dock shops, Cristobal, to be docked and to have the work completed.

Work in dock consisted of overhauling the stern shafts and under-water plating; fitting new propellers; fitting strong-backs to permit the hopper doors to be closed without danger of working open; installing metal troughs against the bulwarks for water and food; completing the deck, bulwarks, etc.; installing quarters with four berths which might be used for customs inspectors while the cattle

were loading; and other miscellaneous alterations and additions. The plan adopted contemplates carrying the cargo of cattle entirely on the upper deck, which is to be divided by pipe fences into compartments capable of holding eight or 10 head of stock. Some of the material for these fences did not arrive and for the first trip the vessel has been fitted with temporary wooden fences, giving much larger subdivisions than are contemplated finally. These fences are so arranged as to leave a passageway for attendants fore and aft on the middle line of the ship, with suitable access to winches, windlasses, and other auxiliary machinery and to quarters and machinery spaces.

In order to secure satisfactory stability, the hoppers have been partly filled with gravel. The vessel left for Cartagena for the first trip on June 2. She will be operated as part of the Panama Railroad Steamship Line fleet, but the officers were not available in time for the first trip, and on this trip she was commanded by one of the Canal pilots stationed at Cristobal. She returned on Tuesday, June 6, with 400 head of cattle.

When finally completed it is expected that the *Caribbean* will provide comfortable transportation for about 600 head of cattle on each trip and her use for this purpose will materially reduce the cost of transportation as well as the losses in weight of the stock itself due to uncomfortable transportation; also the availability of the vessel for this use at all times will avoid delay in shipping cattle after they have been driven to the port of departure and will thus reduce losses in weight from delays in shipment.

### Proposed Extensive Development in Panama City.

The Division of Municipal Engineering has completed a survey of an area in the southwest part of Panama City which may be developed for occupation. This area extends from the National Institute southward to the municipal stables and cemeteries on the north side of the Panama-Balboa road; and is bounded by Ancon Avenue on the east, and the Zone line road on the west. It contains approximately 76 acres, and if developed would increase the habitable area of the city by about one-third.

On the assumption that the owners of the lands which are to be improved would give land for streets and sidewalks, in view of the benefits accruing to them from the development, the cost of the laying of the streets and sidewalks, and water and sewer lines has been estimated at approximately \$250,000.

The Health Department has endorsed the action of the city of Panama in requesting the survey, in the hope of relief from the severe overcrowding to which many of the inhabitants are now subjected, and because without the development the sanitation of the area is a matter of continuous difficulty and expense.

### Heavy Rainfall over Southern End of Canal Zone.

The rainfall at Balboa Heights on Friday, May 26, amounted to 4.70 inches, and at Balboa it was 5.42 inches. Practically all of this precipitation occurred between 12.30 and 6 p. m., and during this period the rainfall was continuous. The precipitation at Miraflores, the next station to the north, about three miles from the station at Balboa, was 2.98 inches; and at Pedro Miguel, approximately a mile and a quarter farther north, the fall amounted to 3.28 inches.

The record for a day's rainfall at Balboa Heights is 7.23 inches; at Balboa, 7.57 inches; Miraflores, 4.70 inches; and Pedro Miguel, 4.64 inches. The 5.42-inch mark for a day's precipitation was exceeded during the years 1906 and 1912 at both Balboa and Balboa Heights.

### Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below, information concerning the same being posted at clubhouses and post-offices in the Canal Zone as per the numbers of announcements indicated:

District assistant in forest education (male); \$1,800 a year; examination about July 9, 1916; No. 746.

Scientific assistant in oceanography (male); \$900 a year; examination about July 9, 1916; No. 745.

Librarian (male); \$1,700 a year; examination about July 9-10, 1916; No. 763.

### Obituary.

George S. Woods, employed as a car inspector in the Balboa shops of the Mechanical Division, died at his home in Indianapolis, Ind., on May 12, 1916, while on leave of absence.

### Renewal of Licenses.

Automobile, motorcycle, bicycle, and hunting licenses expiring on June 30 may now be renewed. Check or money order should be made payable to "Collector, Panama Canal," and forwarded to the Division of Civil Affairs, Balboa Heights, or applications for renewal may be made in person at the Civil Affairs office, Room 320, Administration Building, Balboa Heights.

### Misdirected Letters.

BALBOA HEIGHTS, C. Z., June 6, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts, and may be procured upon request of the addressees. Requests may be made by telephone, calling Balboa, No. 182:

Achor, Fred	Lawrence, C. E.
Ballagooyen, V.	Lawton, J. E.
Burke, Mrs. F. B.	Leys, Dr. James F.
Clark, Miss Lottie	Loeb, Jesse
Coakley, Ruston	Lott, H.
Douglass, Edgar E.	McGowan, Mrs. W.
Ferguson, H. W.	McLean, Joe
Flaherty, Capt. James	McLean, Wm.
Grim, Will N.	Melbourne, Victor
Grube, Claud	Merrill, Ralph O.
Harris, Gilbert J.	Miller, V. C.
Hart, Chas. F.	Moore, Mrs. Geo.
Hartwig, Chas.	Penn, F. R.
Hatley, Ben	Smith, W. F.
Heiliksen, Mrs. L. A.	Steiner, C. H.
Humphrey, Mrs. James	Swiger, Carl
Hurt, W. F.	Williams, L. R.
Kelly, Clarence	Wouters, Miss M.
Lasky, Samuel F.	

### Maximum Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, June 3, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun	Gatun Lake.	Miraflores Lake.
Sun., May 28.....	128.85	94.43	6.41	86.44	54.20
Mon., May 29.....	129.40	94.71	6.46	86.45	54.21
Tues., May 30.....	127.45	93.88	6.43	86.43	54.19
Wed., May 31.....	127.85	93.75	6.49	86.46	54.20
Thurs., June 1.....	131.35	96.15	6.57	86.51	54.05
Fri., June 2.....	129.95	95.25	6.46	86.49	54.20
Sat., June 3.....	128.75	95.00	6.50	86.45	53.85
Heights of low water to nearest foot.....	125.0	91.0			

## EXECUTIVE ORDER.

## Protection of the Panama Canal.

Under the provisions of the Panama Canal Act the Governor is charged with the protection of the Canal until such time as the President may designate an officer of the Army to have entire control of the Canal and the Canal Zone during time of war or threatened war. The military and naval forces stationed in the Canal Zone will furnish such assistance to the Governor in the performance of this duty as the respective commanding officers may be requested by him to render.

WOODROW WILSON.

THE WHITE HOUSE,  
May 17, 1916.

[No. 2382.]

The above has been published as Canal circular No. 601-51.

## Features of the Fourth of July Celebration.

One of the features of the Fourth of July celebration at Balboa will be a horse show. Another will be a parade of decorated automobiles and motor cycles. A feature for the children will be a merry-go-round, with free rides all day long. There will be dancing on Pier 18 throughout the afternoon, and in the evening there will be further provisions for dancing. Military exhibitions will be given in the morning, and a baseball game and swimming contests will take place in the afternoon. Patriotic exercises, with the reading of the Declaration of Independence and the delivery of an address, will be held in the forenoon.

The program of athletic events includes the following, entry blanks for which may be secured from the secretaries of the several Canal clubhouses or from the entertainment committee of the celebration:

**Track events**—100-, 220-, and 440-yard dashes; half-mile run; 120-yard low hurdle; mile relay, four men to run.

**Field events**—Running high jump; running broad jump; pole vault; tug of war, eight men; wall scaling; shoe race.

**Boy's events**—75-yard dash (75 pounds); potato race (85 pounds); three-legged race (under 130 pounds); 400-yard relay, boys from 7th and 8th grammar school grades, four to run.

**Swimming events**—50-yard dash, handicap for boys under 18 years of age; 50-yard dash, open, handicap for girls under 18; 100-yard dash, novice; 100-yard dash, championship; 220-yard dash, handicap; one-half mile relay, four men, each to swim 220-yards; fancy diving, including front dive, back dive, front jack knife, back jack knife, and two specialties. The diving board will be 10 feet from the water.

The chairman of the finance committee states that while the gold employes of the Building, Dredging, and Electrical Divisions have responded excellently to the call for funds, with few exceptions, the responses from other divisions have not been satisfactory. In order that the program as outlined may be carried through with satisfaction to all it is necessary for the people to cooperate, contributing liberally to the fund as well as participating in the day's exercises. Since many calls for donations for various causes are made on the employes, it is urged that all who are in sympathy with the celebration do something to keep the cause in the minds of those who have not contributed.

## OFFICIAL CIRCULARS.

## Short Shipped Cement Sacks.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 26, 1916.

## HEADS OF DEPARTMENTS AND DIVISIONS:

The following is quoted from a communication received from the General Purchasing Officer, dated April 22, 1916, relative to the return of empty cement bags: "The inspector in charge at Northampton, makes the following comment regarding the discrepancy between the number of bags reported shipped from the Isthmus and the number of bags received at Northampton:

"I beg to call your attention to the shortage of bags received here and the amount claimed by the Isthmus. The Isthmus figures that there are one hundred bags to the bundle but this is not the case as a bundle is almost always short; the bundles are anywhere from one to 50 bags short, therefore you can readily see why our count will not agree with the count of the Isthmus. Please take this matter up with the authorities on the Isthmus and have them try to remedy same."

You are directed to issue such instructions to employees under your immediate direction who have to do with the handling of empty bags as will insure strict compliance with the provisions of circular No. 335-B, dated November 25, 1913, and circular No. 656-7, dated December 10, 1914.

CHESTER HARDING,  
Acting Governor.

## Acting Member of Board of Local Inspectors.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., May 29, 1916.

To all concerned—Effective May 4, 1916, and during the absence on leave of Lieutenant A. B. Reed, U. S. Navy, Mr. Charles Svensson will act as member of the Board of Local Inspectors.

CHESTER HARDING,  
Acting Governor.

## Closing Down Balboa, Paraiso, Dry Dock, and Obsolete Storehouses for Annual Inventory.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 6, 1916.

To all concerned—On account of the taking of the annual inventory, the Balboa, Paraiso, dry dock, and obsolete storehouses will be closed for business from June 26 to July 1, both dates inclusive, except for emergency orders. Heads of departments and divisions, and storekeepers are requested to draw any material they may need during this period, prior to June 27, 1916. Rather than embarrass the work the storehouse will fill emergency orders at the request of the head of the department or division requiring the material, but it is requested that such requests be minimized as much as possible.

It is also requested that no material be returned to stock between June 15 and July 15, inclusive.

F. H. SMITH,  
Acting Chief Quartermaster.

Approved:

CHESTER HARDING,  
Acting Governor.

## Accountability for Hand and Push Cars.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 3, 1916.

All accountable officials and storekeepers—Please furnish by numbers a list of all hand and push cars for which you are accountable as of June 15, 1916. Any unnumbered cars should be so reported.

AD. FAURE,  
Chief Accountant.

## Proposals for the Purchase of Pipe, etc., at Porto Bello.

Sealed proposals will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., June 10, 1916, and then opened, for the purchase of approximately the following pipe: Four hundred feet of 4-inch galvanized pipe, 600 feet 6-inch cast iron water pipe, buried under ground about three feet; 300 feet of 3-inch galvanized and 600 feet of 2-inch galvanized pipe, above ground; about six lengths of 70-pound rail and five tons of old shafting and pulleys.

This material is located at Porto Bello and bids will only be considered for the entire lot of material as it lies. Proposals must be accompanied by post-office money order, certified check, or cash in amount of 20 per cent of amount bid as a guarantee of the faithful performance of the proposal. The Panama Canal

reserves the right to accept any or reject any or all bids. Proposals should be marked "Proposal for the purchase of pipe, etc., at Porto Bello," and addressed to the Acting Chief Quartermaster, Balboa Heights, C. Z.

## Proposals for the Purchase of 214 Bags of Cement Sweepings.

Sealed proposals will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., June 10, 1916, and then opened, for the purchase of any or all of a lot of approximately 248 bags of cement sweepings. These sweepings may be examined and full information obtained upon application to the General Storekeeper, Supply Department, Balboa. Proposals must be accompanied by post-office money order, certified check, or cash in amount of 20 per cent of the amount bid as a guarantee of the faithful performance of the proposal. The Panama Canal reserves the right to accept any or reject any or all bids. Proposals should be marked, "Proposal for the purchase of cement sweepings," and addressed to the Acting Chief Quartermaster, Balboa Heights, C. Z.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 304, on Wednesday, June 7, 1916, beginning promptly at 8 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, room No. 211, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test, for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, not later than 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, June 16, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board,  
GEO. J. VANDERLICE,  
Recorder, Board of Local Inspectors.

## Engineer of Maintenance.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 1, 1916.

To all concerned—During the absence of Colonel J. J. Morrow on leave, effective June 1, 1916, the undersigned will resume the duties of Engineer of Maintenance, which were temporarily assigned to Colonel Morrow.

CHESTER HARDING,  
Acting Governor.

## Proposals for the Purchase of a Lot of "Natco" Building Tile.

Sealed bids will be received in the office of the Acting Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10 a. m., June 13, 1916, and then opened, for the purchase of approximately the following "Natco" building tile: Seven hundred and thirty-two pieces 2 by 12 by 12; 1,873 pieces 6 by 8 by 12; 700 pieces 8 by 12 by 12; 192 pieces 12 by 12 by 12. This material may be examined and full information obtained upon application to the General Storekeeper, Supply Department, Balboa, C. Z. Bids will be accepted for the entire lot of tile or for any number of pieces. The Panama Canal reserves the right to accept any or reject any or all bids. Bids should be accompanied by post-office money order, certified check, or cash in amount of 20 per cent of amount bid. Bids should be marked "Proposal for purchase of 'Natco' building tile," and addressed to Acting Chief Quartermaster, Balboa Heights, C. Z.



## JOINT COMMISSION.

## Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 246, docket numbers as noted, May 11, 1916—At a public session of the Commission held this date the following claims, in which plea of payment was filed by counsel for the United States, were accorded public hearing:

Dk't.	Claimant.
1215	Juan Chiquito.
1216	Pedro Romero.
122	Modesto (Menesto) de Leon.
1228	Ram Herrera.
1230	Juan José de Leon.
3252	Juan José de Leon.

Counsel for the claimants admitted that the claimants had no property covered by the above claims not already paid for in the settlements plead by the United States, and requested that the claim hereinabove mentioned be dismissed.

No further action being necessary by the Commission the above claims are therefore hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO, CLEMENT L. BOUVE, Commissioners.

In the matter of sundry claims, rule of dismissal No. 247, docket numbers as noted, May 12, 1916—With reference to the following claims, the evidence before the Commission is that settlement thereof has been made by the United States:

Claimant.	Dk't.	Tax	Date of payment.
Lee Jan (Hing Lee)	1244	No.	7-14
Nicholas Rose (Roseway)	1281	No.	8-15
Georga Derby	1290	No.	9-15
Pal lip (Alexander) Reynolds	15	No.	4-16
Eusebio Gon Iola	1727	644	1-15
Rio lo (Sirilo) Herrera	1312	No.	1-14
Camion Murillo (Morillo)	1325	438-B	3-14
(José) Dolores Magellan	1879	1598-A	1-13
Frederick William Agard	1905	409	5-13
James Ennis (Innis)	1935	324-793	4-16
A. J. Bramwell	2823	No.	1-12
Ezequiel Palasio (Palacio)	2932	433	4-16
Joseph Mapp & Chas. Wilson	3004	792	4-16
Joseph Mapp	3005	No.	4-16
Sebastian Bos	3172	No.	4-16
M. Henrietta Marshall	3124	438-B	1-16
Diego Valencia	3248	1783	4-16
Escalante Arroyo	3304	No.	4-16
Manuela Aragon de G.	3339	4	1-12
Catalina Abila	3342	719	6-15
Cristobal de Leon	3444	96	10-13
Olivia Jackson	3561	No.	4-16
José Inez Rangel	3582	No.	11-15

In view of the above statements, no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO, CLEMENT L. BOUVE, Commissioners.

In the matter of sundry claims, rule of dismissal No. 248, docket numbers as noted, May 15, 1916—In the following claims filed before the Commission on the dates shown, counsel for the claimants has now, under date of April 28, 1916, filed a statement setting out that the claimants are not the owners of the property covered by such claims, i. e.:

Dk't.	Claimant.	Date filed.
1263	Eusebio Samig.	6-3-13
1304	Angel Maria Menibza	6-7-13

In view of the action on the part of counsel for the claimants, the above claims are hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO, CLEMENT L. BOUVE, Commissioners.

## Joint Commission Calendar.

The following is a calendar of claims set for hearing for the week ending June 17, 1916.

**Monday, June 12**—Docket 1316, Samuel Williams; docket 1318, José Maria Herazo; docket 1319, Maria M. de Angeron; docket 1325, Stanislaus Viscanza; docket 1327, Joseph Payne; docket 1332, James Brilian; docket 1335, Benislado Villareal (partial); docket 1336, Pedro Garrido; docket 1337, Calista Maldonado.

**Tuesday, June 13**—Docket 1338, Ojalah Allen; docket 1339, Santiago Nunez (Ruñez); docket 1340, Domingo de los Rios (Ruiz); docket 1344, Matilda Mathurine; docket 1345, Alice Lewis; docket 1346, Pascual Castillo; docket 1360, Policarp Escobar; docket 1361, Andres Basante (Busante); docket 1364, Charles Herbes.

**Wednesday, June 14**—Docket 1296, Gerardo Ortega et al.

WILLIAM TAYLOR,  
Secretary.

## Joint Commission Notice.

Notice is hereby given to the following named claimants before the Joint Commission that on account of their failure to appear on the dates set for the trial of their claims during the month of May, 1916, the Commission has ordered that a rule of default be entered against each and every one of them:

Docket No. 1291, Casimiro M. Kanzie.  
Docket No. 1308, José Domingo Rosado.  
Docket No. 1309, Bonifacio Monserra.

The above named claimants and their attorneys are hereby notified that under the rules of the Commission unless said claimants appear before the Commission in person or by their attorneys within sixty (60) days from this date and show good and sufficient cause why such default should be set aside, and take active steps to prosecute their claims against the United States, such claims will be considered as having been either settled or abandoned and the same will be dismissed and forever barred.

By order of the Joint Commission.

Panama, June 3, 1916.  
WILLIAM TAYLOR,  
Secretary.

## COMMISSARY DEPARTMENT.

## Collection of Charges on Overweights.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., May 31, 1916.  
MEMO TO ACCOMPANY BULLETIN No. 455:

To all concerned—It has been called to our attention that the following rule, embodied in the above numbered bulletin, is not being complied with:

"The rule is here laid down that whenever cases of this kind occur, the customer's copy of the order should carry an endorsement to the effect that excess weight has been delivered, and additional collection will be asked for."

Please see that the rule is understood by all of your employees, and have it complied with in all cases.

BENJ. L. JACOBSON,  
Depot Commissary.

## Prompt Issue of Refund and Credit Notes.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., May 23, 1916.

To all concerned—(1) The following instructions governing the issuance of credit and refund notes are published for strict observance by all concerned:

(a) Credit or refund notes covering items paid for or charged, which for some reason or other are not delivered, must go out with the balance of the order, or by solicitor on next visit.

(b) Credit or refund notes must be given immediately when supplies are returned over the counter by customers, if refund for such supplies is in order.

(c) Credit or refund notes must be sent out on the following delivery, or by solicitor on next visit, when they cover credits for supplies or containers delivered to drivers. Effective at once a receipt (Com. form 308, which will be suitably revised later) must be given by drivers for all supplies offered to them for return, the same as is now done for containers. The credit or refund notes must be made up from the duplicates immediately after they are turned in by drivers, and sent out with the next delivery, or by solicitor on next visit, unless an exchange is made.

(2) A copy of this bulletin is being published in THE CANAL RECORD, and commissary patrons are invited to cooperate with us in the enforcement of the above rules, by calling our attention to all infractions thereof, particularly with respect to failure to receive receipts from wagon drivers for all supplies or containers turned over to them.

Copy of this bulletin should be prominently posted in commissaries. It will also be printed in "dodger" form and sent out for distribution with deliveries on each Saturday morning until the supply is exhausted.

BENJ. L. JACOBSON,  
Depot Commissary.

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, June 8, 1916:

FISH.	Price.
Fresh fish, per lb.	\$0.12
Turtle (wt. 100 to 200 lbs.), per lb.	.07
FRUITS.	
Coconuts, dry, ea.	.04
Coconuts, water, ea.	.03
Pineapples, ea.	.06
Sugar cane, ea.	.03
Plantain, ea.	.01
Onions, medium, ea.	.01
Mangoes, large, ea.	.02

	Price
Alligator pears, small, ea.	.02
Alligator pears, medium, ea.	.01*
Alligator pears, large, ea.	.06*
VEGETABLES.	
Celery, soup, per bunch.	.04
Ginger, per lb.	.05
Mint, per bunch.	.01
Onions, green, per bunch.	.04
Parsley, per bunch.	.01
Radishes, per bunch.	.04
Spinach, per bunch.	.04
Cucumbers, per lb.	.10
Squash, 1 per lb.	.03

\*Indicates advance from last list.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective May 26:

ARTICLE.	PRICE CHANGE.	Old.	New.
Belts, ea.	\$0.75	\$0.80	
Blouses, ea.	1.10	1.20	
Braid, red, piece.	.08	.11	
Cloth, oil, yd.	.17	.20	
Curtain, Swiss, yd.	.08	.10	
Elastic, yd.	.03	.04	
Elastic, yd.	.05	.07	
Fasteners, dress, doz.	.08	.11	
Gingham, yd.	.17	.20	
Linen, yd.	.12	.14	
Mats, bath, ea.	.76	.90	
Mats, bath, ea.	.51	.60	
Pants, pr.	1.50	1.85	
Riggins, ea.	2.25	2.75	
Dippers, ea.	.10	.13	
Kettles, ea.	.35	.41	
Pitchers, ea.	.25	.30	
Platters, chop, 14", ea.	2.20	2.65	
Razors, ea.	2.45	3.35	
Stoves, No. 2, ea.	1.05	1.25	
Screwdrivers, ea.	.31	.44	
Tacks, copper, pkg.	.10	.13	
Trowels, ea.	.17	.10	
Trunks, ea.	5.70	6.00	
Trunks, ea.	7.20	7.70	
Tubs, wash, No. 1, ea.	5.33	5.79	
Tubs, wash, No. 2, ea.	.64	.84	
EFFECTIVE MAY 27, 1916.			
Shoes, men's, pr.	4.00	4.20	
Shoes, children's, pr.	1.30	1.50	
Shoes, men's, pr.	5.55	6.10	
Shoes, men's, pr.	4.45	6.00	
Shoes, men's, pr.	5.55	6.10	
Shoe lifts, ea.	.13	.16	

## EFFECTIVE JUNE 1, 1916.

Champagne cider, P. C., bot.	\$0.04	\$0.05
Club soda, P. C., bot.	.04	.05
Cream soda, P. C., bot.	.04	.05
Ginger ale, P. C., bot.	.04	.05
Lemon soda, P. C., bot.	.04	.05
Limko, P. C., bot.	.04	.05
Root beer, P. C., bot.	.04	.05
Sarsaparilla, P. C., bot.	.04	.05
Strawberry soda, P. C., bot.	.04	.05
Alcohol, P. C., qt.	.25	.26
Anemina, qt.	.14	.15
Syrup, Mapleine, P. C., pt.	.20	.21
Syrup, cane, P. C., qt.	.15	.16
Oil, salad, P. C., 24-oz.	.23	.27
Vinegar, malt, P. C., qt.	.13	.14
Bay Rum, P. C., bot.	.20	.21

Effective with this increase, two cents refund will be allowed upon return of bottle.

## Rainfall from May 1 to 31, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—	In.		In.
Balboa	5.42	26	12.64
Balboa Heights	4.70	26	12.59
Miraflores	2.98	26	11.10
Pedro Miguel	3.28	26	13.10
Rio Grande	3.25	26	11.22
Central Section—			
Culebra	2.27	26	10.91
Camacho	1.75	26	9.43
Empire	2.22	26	9.92
Camboa	3.03	23	12.25
Juan Mina	1.56	29	9.26
Alajuela	3.23	25	12.40
Alajuela	1.82	29	12.41
Fr. oles	1.27	12	8.45
†† Inidad	1.80	178	12.09
†† Nonc Lirio	2.15	25	8.41
Atlantic Section—			
Ca. ut.	2.34	26	11.22
†† azos Brook	2.33	26	14.23
Co. n	3.25	12	9.38
Bocas del Toro	3.89	27	10.12

\*Starland rain gage—readings at 5 p. m. daily.  
Automatic rain gage at unstarred stations—values midnight to midnight.



## SHIPPING INFORMATION.

## July Weather Probabilities.

Weather conditions approximately as follows may be expected at the Canal entrances during the month of July, 1916. These predictions are based on the records at Colon and Ancon for the past eight and nine years, respectively.

**Winds**—The winds over the Atlantic coast will continue to be light and variable, northerly winds predominating. The average hourly velocity will be about nine miles an hour, although a velocity of from 25 to 30 miles may be expected during rain or thunder squalls. A maximum velocity of 40 miles an hour was recorded during the month of July, 1908, but the recurrence of so high a velocity during the month is hardly to be expected.

Light northwest winds will continue over the Pacific coast and the interior, with an average hourly velocity of about seven miles an hour. Variable winds may be expected at times, especially during the passage of local rain or thunder storms, and the wind may attain a velocity of as high as 25 miles an hour, but these storms are generally of short duration. During a wind squall at Ancon, on July 10, 1909, a maximum velocity of 59 miles an hour was recorded. This, however, expresses only extreme conditions, and is not likely to occur during the month.

**Rain**—Heavy showers can be expected on both coasts and over the interior. The average July rainfall at the Atlantic entrance to the Canal, for a period of 45 years, is 16.32 inches, while the average fall at the Pacific entrance is 7.72 inches, this average being for a period of 19 years. The average number of rainy days (one on which 0.01 inch or more of rain is measured), is 21 on the Pacific coast and 25 on the Atlantic side, while the average numbers of days on which the rainfall equals or exceeds one inch (1.00) are two and five, respectively.

**Fogs**—No fogs are likely to occur on either coast, but night and early morning fogs will be numerous over the interior. Over the Gaillard Cut section of the Canal, the average number of nights with fog is 20, fifty per cent of which have been dense. (In a dense fog objects can not be distinguished at a distance of 1,000 feet.) All fogs that occur can be expected to lift or become dissipated by 8.30 a. m.

**Temperature**—The average shade air temperature over both the Atlantic and Pacific entrances to the Canal will be approximately 80 degrees Fahrenheit. The temperature is not likely to rise above 89° F., or fall lower than 70° F. on the Atlantic coast, while at the Pacific entrance the maximum temperature may not be expected to exceed 95° F., or the minimum to be lower than 67° F. The mean daily range of the temperature will probably be about eight degrees Fahrenheit at the Atlantic entrance, and about 15° F. at the Pacific entrance.

**Barometric pressure**—The average sea level pressure for the month should be about 29.85 inches, while the maximum pressure is not likely to exceed 30.00 inches, or the minimum to be lower than 29.70 inches at either Canal entrance.

**Relative humidity**—The percentage of moisture in the air will be practically the same as for the preceding month, 85 per cent over both coasts. The range will be greater over the Pacific coast where the percentage is

higher during nighttime and lower during daytime, than on the Atlantic coast.

**Storms**—Most of the storms during the rainy season are local wind, thunder, or rain squalls of more or less limited extent. These storms may be expected quite frequently, the average number of days on which they have occurred on the Atlantic and Pacific coasts, being 16 and 17, respectively. During the passage of these storms, comparatively high wind velocities may be attained, but they are invariably of too short duration to cause rough seas.

The season from July to October is the season of the West Indian hurricanes, but the paths followed by them lie well to the northward of the Isthmus. A rough sea and heavy swell, accompanied by brisk winds, may be occasionally experienced outside the Atlantic entrance breakwaters, however, following the passage of a hurricane across the Caribbean Sea to the northward.

Generally cloudy weather will prevail over both coasts, and smooth to moderate seas can be expected at the Pacific entrance to the Canal.

**Tides**—The average tidal range at Colon is less than one foot and the maximum range is approximately two feet. Owing to this fact, no consideration need be given to tidal fluctuations at the Atlantic entrance.

Panama (Balboa) tide predictions for the remainder of June and for July are given below:

## Tide Predictions, Port of Balboa.

## JUNE.

DATE.	Time and height of high and low water.			
Wed., June 7.....	1:40 2 8	7:52 4.0	14:12 12.0	20:00 12.0
Thurs., June 8.....	2:26 3.4	8:34 12.5	15:06 4.2	20:48 11.8
Fri., June 9.....	3:17 3.8	9:23 12.4	16:05 4.2	21:47 11.5
Sat., June 10.....	4:15 4.1	10:22 12.5	17:06 3.9	22:58 11.6
Sun., June 11.....	5:16 4.0	11:25 12.9	18:07 3.3	..... .....
Mon., June 12.....	6:06 12.0	6:19 3.6	12:29 13.5	19:05 2.5
Tues., June 13.....	1:07 12.8	7:20 2.9	13:24 14.4	20:01 1.4
Wed., June 14.....	2:00 13.8	8:17 2.0	14:15 15.2	20:53 0.2
Thurs., June 15.....	2:53 14.7	9:10 1.0	15:06 16.0	21:43 -0.7
Fri., June 16.....	3:44 15.5	9:59 0.2	15:58 16.5	22:29 -1.4
Sat., June 17.....	4:36 16.1	10:46 -0.3	16:50 16.7	23:15 -1.7
Sun., June 18.....	5:27 16.5	11:32 -0.4	17:43 16.6	..... .....
Mon., June 19.....	6:01 -1.5	6:19 16.6	12:24 -0.1	18:34 16.1
Tues., June 20.....	6:50 -1.0	7:09 16.3	13:16 0.4	19:25 15.4
Wed., June 21.....	1:40 -0.1	8:00 15.7	14:12 1.2	20:17 14.5
Thurs., June 22.....	2:35 1.0	8:50 15.0	15:10 1.9	21:13 13.4
Fri., June 23.....	3:33 2.1	9:46 14.1	16:12 2.6	22:18 12.6
Sat., June 24.....	4:33 3.0	10:49 13.4	17:13 3.0	23:29 12.0
Sun., June 25.....	5:35 3.6	11:55 13.1	18:15 3.1	..... .....
Mon., June 26.....	6:39 12.0	6:42 3.8	12:55 13.0	19:16 3.0

DATE.	Time and height of high and low water.			
Tues., June 27.....	1:33 12.1	7:37 3.7	13:48 13.1	20:10 2.6
Wed., June 28.....	2:28 12.5	8:29 3.4	14:34 13.4	20:57 2.1
Thurs., June 29.....	3:12 12.9	9:14 2.9	15:17 13.6	21:30 1.6
Fri., June 30.....	3:53 13.2	9:56 2.5	15:56 13.6	22:17 1.2

## JULY.

DATE.	Time and height of high and low water.			
Sat., July 1.....	4:31 13.5	10:33 2.2	16:35 14.0	22:53 1.0
Sun., July 2.....	5:08 13.8	11:10 2.1	17:12 14.1	23:28 1.0
Mon., July 3.....	5:44 13.9	11:46 2.1	17:48 14.0	..... .....
Tues., July 4.....	6:02 1.2	6:18 14.0	12:22 2.3	18:23 13.8
Wed., July 5.....	6:36 1.5	6:50 13.9	12:59 2.5	18:57 13.5
Thurs., July 6.....	1:11 2.0	7:22 13.8	13:39 2.9	19:32 13.1
Fri., July 7.....	1:49 2.5	7:56 13.6	14:24 3.2	20:12 12.6
Sat., July 8.....	2:33 3.1	8:37 13.3	15:15 3.4	21:00 12.1
Sun., July 9.....	3:25 3.5	9:27 13.1	16:16 3.5	22:02 11.8
Mon., July 10.....	4:25 3.8	10:31 13.0	17:19 3.4	23:17 11.9
Tues., July 11.....	5:34 3.8	11:44 13.3	18:28 2.8	..... .....
Wed., July 12.....	6:31 12.4	6:46 3.4	12:54 13.9	19:34 1.9
Thurs., July 13.....	1:36 13.3	7:53 2.5	13:56 14.8	20:33 0.7
Fri., July 14.....	2:35 14.5	8:52 1.3	14:52 15.6	21:26 -2.4
Sat., July 15.....	3:30 15.5	9:45 0.2	15:47 16.4	22:14 -1.4
Sun., July 16.....	4:23 16.4	10:34 -0.6	16:39 16.8	23:00 -1.9
Mon., July 17.....	5:14 17.0	11:21 -1.0	17:31 16.9	23:45 -1.9
Tues., July 18.....	6:02 17.2	12:07 -0.9	18:20 16.6	..... .....
Wed., July 19.....	6:30 -1.4	6:49 17.0	12:55 -0.4	19:06 15.6
Thurs., July 20.....	1:16 -0.5	7:34 16.3	13:45 0.5	19:53 14.9
Fri., July 21.....	2:06 0.8	8:19 15.3	14:37 1.5	20:42 13.7
Sat., July 22.....	2:58 2.0	9:08 14.0	15:32 2.5	21:36 12.4
Sun., July 23.....	3:55 3.2	10:03 13.1	16:32 3.4	22:34 11.7
Mon., July 24.....	4:56 4.1	11:01 12.3	17:36 3.9	..... .....
Tues., July 25.....	6:00 11.2	6:02 4.6	12:21 12.0	18:43 4.0
Wed., July 26.....	1:12 11.3	7:09 4.6	13:25 12.2	19:46 3.6
Thurs., July 27.....	2:09 11.8	8:07 4.2	14:17 12.6	20:39 2.9
Fri., July 28.....	2:56 12.3	8:57 3.5	15:01 13.1	21:21 2.2
Sat., July 29.....	3:37 13.0	9:39 2.8	15:41 13.6	22:00 1.5
Sun., July 30.....	4:14 13.5	10:17 2.2	16:18 14.0	22:34 1.0
Mon., July 31.....	4:48 14.0	10:52 1.7	16:53 14.3	23:07 0.8

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The

## MOVEMENT OF OCEAN VESSELS.

(Week ending at 6 p. m., June 4, 1916.)

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
May 29.....	Jamaica.....	British.....	Pacific Steam Nav. Co.....	Cristobal.....	Buenaventura.....	General.....	528	1,170	620
May 29.....	Palosi.....	British.....	Pacific Steam Nav. Co.....	London.....	Balboa.....	General.....	3,607	5,542	4,316
May 30.....	Copenhagen.....	British.....	Glasgow Shipowners Company.....	New York.....	Arica.....	General.....	6,200	5,029	3,735
May 31.....	Palena.....	Chilean.....	South American S. S. Co.....	Cristobal.....	Valparaiso.....	General.....	3,639	2,537	
May 31.....	Salvador.....	British.....	Pacific Steam Nav. Co.....	Cristobal.....	Punta Arenas.....	General.....	1,190	692	
May 31.....	Caspian.....	British.....	Houlder Middleton & Co.....	Algiers.....	Tocopilla.....	Ballast.....		3,689	2,693
June 2.....	Mantaro.....	Peruvian.....	Peruvian Steamship Line.....	Cristobal.....	Callao.....	General.....	1,355	4,639	2,673
June 2.....	Shinko Maru.....	Japanese.....	Goshi Kaisha Kishimoto Swkl.....	Philadelphia.....	Sakai.....	Case oil, general.....	3,486	3,093	2,165
June 2.....	Papua.....	British.....	New Zealand Shipping Co.....	New York.....	Melbourne.....	General.....	9,000	5,558	5,828
June 2.....	Australian.....	Danish.....	East Asiatic Co.....	New York.....	Taku Bar.....	Case oil, general.....	8,200	7,021	5,336
June 2.....	Tongking.....	Danish.....	East Asiatic Co.....	New York.....	Shanghai.....	Petroleum.....	8,400	7,021	5,358
June 3.....	Balboa.....	American.....	American Mex. Trade S.S. Co.....	Cristobal.....	Buenaventura.....	General.....		705	315
June 3.....	Peru.....	British.....	Pacific Mail Steamship Co.....	Cristobal.....	San Francisco.....	General.....		3,968	2,441
June 3.....	Quilque.....	British.....	Pacific Steam Nav. Co.....	Cristobal.....	Guayaquil.....	General.....	1,282	3,922	2,231
June 3.....	Coya.....	British.....	N. Y. & Pacific S. S. Co.....	New York.....	Callao.....	General.....	3,263	3,222	2,216
June 4.....	Maipo.....	Chilean.....	Chilean Government.....	Baltimore.....	Valparaiso.....	Coke.....	4,443		
June 4.....	Victoria.....	British.....	Pacific Steam Nav. Co.....	Liverpool.....	Valparaiso.....	General.....	3,400	6,860	4,566
June 4.....	Bolton Castle.....	British.....	Lancashire Shipping Company.....	New York.....	Vladivostok.....	General.....	7,000	6,337	4,863

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

May 29.....	Peru.....	American.....	Pacific Mail Steamship Co.....	San Francisco.....	Colon.....	General.....	1,365	3,968	2,441
May 29.....	Chile.....	British.....	Pacific Steam Nav. Co.....	Valparaiso.....	Colon.....	General.....	1,578	4,040	2,628
May 29.....	Dereent River.....	British.....	British Empire Steam Nav. Co.....	Meyllones.....	Colon for orders.....	Nitrates.....	7,303	5,232	3,835
May 30.....	Oaki.....	British.....	New Zealand Shipping Co.....	Wellington.....	London.....	General.....	4,500	9,948	6,949
May 31.....	Balboa.....	American.....	Columbia Maritime S. S. Co.....	Buenaventura.....	Colon.....	General.....	460	705	315
May 31.....	Ucayali.....	Peruvian.....	Peruvian S. S. Line.....	Callao.....	Colon.....	Sugar, cotton, etc.....	2,088	4,278	2,706
May 31.....	Linari.....	South American S. S. Co.....	South American S. S. Co.....	Talcahuano.....	Colon.....	General.....	1,240	3,631	2,421
May 31.....	Jacob Luckenbach.....	American.....	Luckenbach Line.....	San Francisco.....	Queenstown.....	Barley.....	3,400	2,819	1,960
May 31.....	De Sola.....	American.....	Standard Oil Company.....	Talara.....	Vallo.....	Crude oil, naphtha.....	6,444	7,145	4,477
May 1.....	Cauca.....	British.....	Pacific Steam Nav. Co.....	Guayaquil.....	Colon.....	General.....		1,557	988
June 2.....	Thode Faglund.....	Norwegian.....	W. Wilhelmsen.....	Tocopilla.....	Colon for orders.....	Nitrates.....	990	4,738	3,586
June 3.....	Thode Faglund.....	American.....	Pacific Mail Steamship Co.....	San Francisco.....	Colon.....	Sugar, coffee, etc.....	1,097	2,337	1,617
June 3.....	Barge No. 93.....	American.....	Standard Oil Company.....	San Francisco.....	Colon.....	Fuel oil.....	3,00	2,635	2,195
June 4.....	Foreric.....	British.....	Foreric S. S. Co.....	Antofagasta.....	Marseilles.....	Nitrates.....	5,900	4,142	3,110
June 4.....	Wabana.....	British.....	British & Chilean S. S. Co.....	Junin.....	Norfolk.....	Nitrates.....	7,231	5,257	3,387

ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

June 4.....	Oak Branch.....	Nautilus Steamship Co.....	Baltimore.....						
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EXPECTED ARRIVALS FROM PACIFIC.									
June 4.....	Proteus.....	U. S. Navy.....	Honolulu.....	June 8.....	Minnesota.....	American-Hawaiian Line.....	Chilean ports.....		
June 5.....	Dard.....	Federal Steam Nav. Co.....	Wellington.....	June 12.....	Carpenaria.....	Brit. India S. Nav. Co.....	So. Pacific ports.....		
June 5.....	City of Para.....	Pacific Mail S. S. Co.....	San Francisco.....	June 15.....	Boia California.....	Acties Baja California.....	Antofagasta.....		
June 6.....	Curaca.....	N. Y. & Pacific S. S. Co.....	Iquique.....	June 15.....	Paraiso.....	Long Beach S. S. Co.....	Puntarenas.....		
June 7.....	Chimu.....	N. Y. & Pacific S. S. Co.....	Calita Buena.....						

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
May 31.....	Puerto Rico.....	French Steamship Line.....	Saint Nazaire.....	June 3.....	Camilo.....	Elders & Fyffes.....	Bristol.....
May 31.....	Kilpatrick.....	U. S. Army.....	New York.....	June 4.....	Puerto Rico.....	French Steamship Line.....	Saint Nazaire.....
June 3.....	Camito.....	Elders & Fyffes.....	Port Limon.....	June 5.....	Kilpatrick.....	U. S. Army.....	New York.....
June 3.....	Nestorian.....	Leyland Line.....	Liverpool.....				

\*EXPECTED ARRIVALS.

\*EXPECTED DEPARTURES.

June 9.....	Manuel Calvo.....	Spanich Steamship Line.....	Barcelona.....	June 6.....	Nestorina.....	Leyland Line.....	Galveston.....
				June 12.....	Manuel Calvo.....	Spanish Steamship Line.....	Barcelona.....

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

PORT OF BALBOA.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
May 31.....	Sinaloa.....	A. O. Lindwiz.....	Port Ludlow.....	June 5.....	J. A. Moffatt.....	Standard Oil Co.....	San Francisco.....
June 2.....	J. A. Moffatt.....	Standard Oil Company.....	San Francisco.....				

\*Other than ships passing through the Canal.

heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sealevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3.47 p. m.

## Coal.

Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.



## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

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Address all Communications,

THE CANAL RECORD,

Baleoa Heights, Canal Zone,

Isthmus of Panama.

### NOTES OF PROGRESS.

Cargo of 3,000 Tons Offering for Cook Inlet or Seward, Alaska.

Preparations are being made to ship additional equipment to Alaska for the Alaskan Engineering Commission from the stock of surplus and obsolete equipment left over from the construction of the Canal, two shiploads of which have already been sent.

Arrangements for transportation have not been made, and the local representatives of steamship lines have been asked to keep the matter in mind and advise The Panama Canal if any of their vessels calling at Balboa would be interested in the shipment. Arrangements are to be made with the Alaskan Engineering Commission.

The equipment will probably be ready for shipment about the first of September and will consist of seven narrow gauge locomotives, two 75-ton steamshovels, four standard locomotives of 5-foot gage, and 50 Lidgetwood flat cars. The heaviest lifts among the knocked-down parts are the locomotive boilers, weighing 15 tons each, and the steamshovel car bodies, weighing about 14 tons each. The total weight of the shipment will be approximately 3,000 tons. The equipment is being crated at Balboa by the Mechanical Division.

If the shipment is to be delivered at Cook Inlet, Alaska, this season it will have to leave Balboa by October 1 in order to reach port before the close of navigation. Seward, the other port at which it may be delivered, is open all the year.

### "City of Para" Recovers Lifeboat of "Roanoke."

The Pacific Mail Steamship Company's City of Para, which docked at Balboa on Sunday, June 11, from San Francisco, reported the finding of one of the lifeboats of the steamship Roanoke, which sank about 150 miles south of San Francisco on May 9. In the boat was the body of a man, whom the evidence indicates to have been the second officer of the Roanoke. The boat was overtaken on May 12 near Santa Cruz Island, on the course between Santa Barbara and Los Angeles, about 150 miles south of the point at which the Roanoke is supposed to have sunk. The body was buried at sea.

### Excavation from the Cut During the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, June 12, amounted to 267,324 cubic yards. The dredges rehandled 22,275 cubic yards in disposing of it, but these figures are not included in the totals, which are for primary excavation and represent decrease of material in the Canal prism.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Cascadas	15-yard dipper	80,510
Gambou	15-yard dipper	77,165
Purviso	15-yard dipper	62,799
Coronel	Ladder	33,175
No. 83	Pipeline suction	10,683
Culebra	Suction suction	.....
No. 86	Pipeline suction	20,117
No. 84	Pipeline suction	8,150
No. 5	Belgian ladder	.....

The aggregate of primary excavation from the bases of the east and west slides at Culebra since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the hour of midnight on June 12, 1916, was 14,738,418 cubic yards. This has been an average of 739,106 cubic yards per month from these slides alone.

In the current fiscal year, since July 1, 1915, the primary excavation in the Cut amounted to 10,615,052 cubic yards, to midnight of June 12. This has been an average of 30,503 cubic yards per day, or approximately 928,512 cubic yards per month.

### The "Guernsey" Loses Propeller Blade Nine Hours Out of Balboa.

The Norwegian steamship Guernsey, which completed transit of the Canal from the Atlantic to the Pacific on June 6, putting to sea at 9 p. m. on that day, lost a propeller blade when about nine hours out of Balboa. She put back to Balboa, arriving at 11 p. m., June 7, and tied up alongside the repair wharf at Balboa shops, where a spare blade was adjusted by forces of the Mechanical Division. As the vessel was in ballast her shaft was lifted out of water without difficulty by letting water into the tanks forward, and the attachment of the new blade was made in the dry. The Guernsey put to sea in the evening of

June 9, continuing her voyage from New Orleans to Taltal.

### Beginning the Moving of Chagres Village.

The moving of the village of Chagres, on the east bank of the Chagres River at its mouth and adjoining the old fort at San Lorenzo, to a new townsite at the mouth of the Lagarto River, eight miles to the west, was begun on Friday, June 9, when the tug Engineer towed a barge from Cristobal to Chagres to be loaded with the goods of the people. On the following day the Engineer carried about 30 of the people to Lagarto, along with quantities of household goods and crated domestic animals. The governor of the province of Colon accompanied the party. It is estimated that at least a month will be required for the moving of the population, numbering between 400 and 500, and their effects. One citizen did his own moving, making the trip to Lagarto in a cayuca.

### Sailing of the "An'on".

The Ancon of the Panama Railroad Steamship Line, which arrived at Cristobal from New York on Thursday, June 8, is scheduled to sail from Cristobal for New York, with passengers and cargo, on June 17 at 10 a. m.

### French Line Steamship "Flandre" Makes First Call at Cristobal.

The steamship Flandre of the Compagnie Generale Transatlantique arrived at Cristobal on Saturday, June 10, on her first call at that port. She was built in 1913 at Saint Nazaire and would have entered the service to Colon directly after completion but was diverted by the French government to military service, and only recently released. She brought to Cristobal 178 tons of transfer and 55 tons of local cargo, and 62 passengers. The Flandre is registered at 8,503 gross tons, and is 464 feet in length by 57 feet beam and 33 feet in depth. She is scheduled to sail for Bordeaux on Friday, June 16.

### Collier "Ulysses" Carrying Cargo.

In order to relieve the congestion of freight for New York discharged at the Canal terminals by Pacific carriers, comment on which was made in The Canal Record of last week, the Canal collier Ulysses has been pressed into service to carry a cargo from Cristobal to New York and is loading at Pier 8. She is expected to sail on Saturday, June 17, with approximately 10,000 tons. The Ulysses arrived at Cristobal on June 2, bringing 12,002½ tons of coal from Norfolk.

### Shipment of Over 1,000,000 Pounds of Rabbit.

Five hundred tons of rabbits, dressed and frozen, were an item in the cargo of the steamship Cumberland, passing through the Canal on May 20 on the way from Wellington to Liverpool. They were shipped from Sydney and consigned to Liverpool.



## LABOR FORCE AND QUARTERS.

## Distribution of Canal and Railroad Forces, and Summary of Occupation of Quarters.

The total force of The Panama Canal, the Panama Railroad Company, and contractors on the Isthmus for the half-month ending Wednesday, May 24, 1916, was 23,981.

This was an increase of 340 over the 23,641 employed on April 26. It is a decrease of 1,119 from the 25,100 employed on March 22, and of 385 from the 24,366 employed on February 23. It is 2,066 more, however, than the 21,915 employed on December 23, 1915, which was the least number that had been employed on the Canal and railroad work since 1906.

The force for the last half-month of May of this year was less by 2,453 than the force reported for the latter part of April of 1915, which was 26,434. It is 7,069 less than the 31,050 employed on May 27, 1914; and 19,052 less than the 43,033 employed on May 28, 1913. The largest force reported was that for March, 1913; it was 44,733.

The principal changes in the numbers employed by divisions, between April 26 and May 24, were a decrease of 1,037 in the force of the Division of Terminal Construction; an increase of 575 in the force of the Panama

Railroad Company; of 338 in the quarter-master branch of the Supply Department; and of 142 in the commissary branch. The forces employed on general construction increased by 99. The force of the Health Department decreased by 30. The forces of contractors, aggregating 388, were greater by 281 than on April 26.

The gold force, consisting almost entirely of white American citizens, numbered 3,593. This was 46 less than the gold force on April 26, but 184 more than the 3,409 employed on March 22. The total gold force a year ago (on May 26, 1915) was 3,615. On May 27, 1914, the total gold force was 4,366. On May 28, 1913, it was 5,766. Of these, 4,337 were employed by the Isthmian Canal Commission, 596 by the Panama Railroad, 249 by the commissary department, and 584 by contractors. The decrease from this force to the present is 2,173. The present gold force is approximately five-eighths of that of three years ago.

A detailed summary of the force report for the half-month ending May 24, 1916, and of the occupation of Panama Canal and Panama Railroad quarters on the Isthmus on May 31 is given herewith:

DEPARTMENT OR DIVISION.	SILVER EMPLOYEES*													Total silver.	Total gold.	Grand total.
	Artisans.						Laborers.									
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	European 16 cents.	13 cents.	10 cents.	7 cents.	5 cents.				
Operation and Maintenance; locks and locks	487	...	6	27	38	11	1	9	31	...	...	...	610	171	781	
Terminal Construct'n	270	19	35	104	324	31	...	15	81	87	1	2	969	163	1,137	
Building	87	3	331	501	261	13	...	1	145	123	3	5	1,273	162	1,435	
Electrical	74	...	30	43	125	9	...	...	24	2	...	...	394	168	562	
Municipal Eng.	330	...	48	176	290	200	64	1	312	72	13	33	2,191	90	2,281	
Dredging	1,698	1	14	51	141	30	4	101	42	2	2	2	2,284	328	2,612	
Mechanical	135	20	75	135	627	601	...	13	51	170	10	5	1,842	814	2,656	
Marine	191	...	...	...	...	...	...	...	...	...	...	...	191	63	256	
Fortifications	57	...	27	46	76	9	38	1	92	81	1	2	427	62	489	
General Construct'n	5	...	...	1	4	1	...	1	11	145	1	49	172	2	174	
Total.	3,534	43	567	884	1,886	992	103	36	802	1,427	30	1	10,353	2,030	1,238	
Supply; main office.	...	...	...	...	...	...	...	...	...	...	...	...	9	9	9	
Commissary	1,180	...	4	6	20	15	356	2	...	260	12	...	1,856	181	2,037	
Subsistence	420	...	2	3	0	1	...	...	...	...	...	...	426	23	449	
Quartermaster	809	66	63	66	60	1	...	19	294	758	5	...	2,140	91	2,231	
Accounting	21	...	...	...	...	...	...	...	...	...	...	...	21	201	222	
Health	394	...	1	3	12	...	...	...	17	318	11	19	785	178	963	
Executive	122	...	1	...	...	...	...	...	...	...	...	...	124	437	561	
Panama Railroad	401	115	50	154	313	655	1,520	22	614	547	4	14	4,499	329	4,738	
Contractors	35	48	9	27	97	...	...	...	41	14	3	...	3	274	114	388
Grand total	6,916	273	699	1,143	2,388	1,663	1,987	79	1,768	3,324	57	91	20,388	3,593	23,981	
Month previous.	6,788	180	668	1,204	2,407	1,493	1,374	118	2,093	3,497	64	116	20,002	3,639	23,641	
Changes	+128	+93	+31	-61	-19	+170	+613	-39	-325	-173	-7	-25	+386	-46	+340	

\*The wages are stated in United States currency.

## QUARTERS.

PLACES.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa*	935	334	313	109	11	19	1,491	486	676
Ancon	953	442	363	9	0	0	262	16	3
Corozal	28	15	6	0	0	0	111	17	12
Pedro Miguel	266	122	144	8	0	0	387	122	152
Paraiso	320	79	90	44	5	15	544	116	160
Culebra	21	14	11	2	1	7	160	33	40
Gambou	37	8	11	12	2	3	509	461	750
Gatun	221	175	210	12	2	3	1,879	210	385
Cristobal	946	338	414	72	0	0	0	0	0
Total	3,227	1,524	1,562	256	19	44	5,840	1,723	2,503

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 20 Asiatics. (3) Includes 13 American negroes, 35 Colombians and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores and Red Tank. (5) Includes Empire, Las Cascadas, and Bas Obispo. (6) Includes 15 Panamanians. (7) Includes Colon Beach and Colon Hospital. (8) Includes 14 East Indians, 22 colored American citizens, and 299 Panamanians.

## Bulletins on Semitropical Horticulture.

The Canal library at Balboa Heights has been receiving recently a variety of agricultural experiment station bulletins dealing with the culture and marketing of semitropical

fruits and vegetables. Those interested in specific branches of this work may make inquiry as to the publications in which they may be interested. Inquiries may be made by telephone, calling No. 224 Balboa.

## Completing the Manufacture of Roofing Tiles.

A supplementary job of making 2,170 pieces of roofing tile for Balboa shops, was finished by the plant of the American Cement Tile Manufacturing Company at Cristobal on Saturday, June 10. The plant had been engaged on this work for about a month, following the completion of the tile required for the new Pier 7 at Cristobal. The tile will be used for replacing pieces broken on the roofs of the shop buildings by stones from Sosa Hill quarry, and for spares to be held in storage.

This completes the manufacturing work of the company under its present contract, although its forces are engaged to lay the roof on Pier 7 and are now employed on it. In all, the company has made approximately 40,000 pieces of tile on its recent contracts, which is approximately one-third of the quantity made in the plant established at Paraiso in 1913. During the height of the recent operations the force employed at Cristobal comprised four gold and 36 silver employees.

## Disposition of Remains of Employees.

The Acting Chief Health Officer has issued the following letter to those in charge of dispensaries at points north of Corozal:

"Circular 618-10 authorizes free cremation of bodies of deceased silver employees, but provides a charge for their burial.

"In order that the same privileges may be given to the families of deceased silver employees on the line or at the Atlantic end, as those allowed at Ancon-Balboa, you are authorized to ship such bodies to Ancon Hospital for cremation, furnishing pass to the Panama Railroad, as heretofore, for transportation of remains to Ancon.

"Relatives of deceased employees should be informed that the deceased may be buried at the usual charge, or sent to Ancon Hospital and cremated free of charge.

"Also, in cases in which no relative can be located, in which you think the remains should be handled by cremation, send them to Ancon Hospital on Health Department transportation, as above, for cremation."

## Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below, information concerning the same being posted at clubhouses and post-offices, as per the numbers of announcements indicated:

Chemist (male); \$3.84 per diem; examination date not set; No. 743.

Assistant inspector of weights and measures (male); \$1,000 to \$1,600 a year; examination about July 9-10, 1916; No. 742.

General mechanic (male); \$720 a year; examination June 27, 1916; No. 741.

Clinical director (male), Government Hospital for the Insane; \$2,000 a year; examination June 27, 1916; No. 733.

Sawyer and carpenter (male); \$840 a year; examination July 11, 1916; No. 761.

Radio draftsman (male); \$3.04 to \$6.00 a day; examination July 11, 1916; No. 793.

## Tennis Tournament in Connection with Official Celebration of Fourth of July.

The Fourth of July singles and doubles all comers' tennis tournaments will be played as follows:

Preliminaries: June 18, singles; June 25, doubles; July 2, consolations.

Finals: July 4, all events.

Games will be played on the Ancon Y. M. C. A., Pacific, and Balboa Heights courts.

## RECEIPTS AND EXPENSES.

## Increased Collections of Tolls, but Not Equal to Half of Costs of Operation and Maintenance.

Following the reopening of the Canal on April 15, the earnings of tolls for April were the first substantial amount received from this source since September, 1915. The aggregate of tolls collected in the six months preceding April was \$12,733.19, an average of \$2,122.20 per month. In April the tolls amounted to \$235,618.44.

During April the costs charged to operation and maintenance of the Canal amounted to \$581,817.95. The tolls amounted to approximately two-fifths of these costs. The excess

of expenses over tolls earned was \$346,199.51.

Including the loss in April, the deficit in the account for the fiscal year to May 1, a period of 10 months, is \$3,995,001.81. During the preceding fiscal year the deficit in the account through the same period was \$95,718.04. During the current fiscal year the tolls were in excess of the expenses only in July, by the amount of \$117,570.09. In August there was a deficit of \$63,177.33; and with the closing of the Canal in the middle of September there was a shortage for that month of \$150,335.34; while the subsequent months showed greater losses.

A summary of the charges for operation and

maintenance in April, 1916, as compared with April, 1915, and with the fiscal year to May 1, this year and last, is presented in the table on this page. The "proportion of overhead expenses," following the summary of operation and maintenance proper, is approximately two-thirds of the total Canal overhead expenses. It is made up of costs for administration, sanitary work, and civil government.

## The "Cocoli" Overhauled.

The tug *Cocoli*, operated by the Marine Division in the Pacific entrance channel and the harbor at Balboa, was cleaned and overhauled last week at the repair wharf at Balboa.

ITEMS.	April, 1916.	March, 1916.	April, 1915.	Fis al Year to Date.	
				This Year.	Last Year.
Marine Division:					
Admeasurement of vessels.....	\$825.95	\$247.70	\$794.92	\$6,032.20	\$8,410.99
Local inspection.....	468.39	190.35	445.45	3,300.88	3,286.31
Aids to navigation.....	4,682.18	3,665.55	4,184.55	46,045.27	40,099.93
Pilotage.....	5,419.51	396.13	5,899.78	26,647.98	47,900.06
Operation of harbor tugs—balance.....	3,744.33	3,430.64		35,571.76	
Total, Marine Division.....	15,140.37	7,930.37	11,324.71	117,598.09	99,697.29
Lock operation and maintenance—					
Gatun Locks:					
Superintendence.....	1,006.34	612.60	1,031.82	10,584.76	14,763.10
Operation.....	5,729.61	3,757.76	7,795.86	65,363.36	84,094.17
Maintenance of machinery and equipment.....	5,061.39	3,751.47	8,865.36	125,025.11	64,016.16
Maintenance of structure.....	1,227.48	1,020.93	1,853.77	10,008.47	26,991.13
Miscellaneous supplies and expenses.....	25.00	59.08	87.60	1,719.63	2,278.14
Total, Gatun Locks.....	13,282.82	9,201.84	10,634.41	212,701.33	192,142.70
Gatun Spillway:					
Operation.....			179.51	729.81	1,000.60
Maintenance of machinery and equipment.....	115.97	505.56	354.23	4,626.20	4,360.60
Maintenance of structure.....	2,924.69	4,229.09	248.82	11,118.53	5,335.41
Total, Gatun Spillway.....	3,040.66	4,734.65	782.58	16,474.54	10,696.61
Pedro Miguel Lock:					
Superintendence.....	1,694.60	1,192.83	793.34	13,456.79	12,374.31
Operation.....	3,980.50	3,056.09	5,170.73	39,227.32	65,742.26
Maintenance of machinery and equipment.....	6,554.62	7,677.49	3,923.16	54,594.91	36,756.38
Maintenance of structure.....	1,262.18	717.48	965.05	12,737.27	22,880.31
Miscellaneous supplies and expenses.....	376.15	344.41	281.45	2,275.97	1,554.73
Total, Pedro Miguel Lock.....	13,868.05	12,988.30	11,133.73	122,290.26	139,307.99
Pedro Miguel Dam:					
Maintenance.....					42.00
Miraflores Locks:					
Superintendence.....	1,879.90	1,327.54	1,022.75	13,503.64	14,697.82
Operation.....	1,656.30	6,759.00	7,548.03	53,030.41	85,329.68
Maintenance of machinery and equipment.....	16,426.94	15,905.63	4,601.10	73,661.81	64,351.48
Maintenance of structure.....	861.65	1,064.17	696.17	9,618.08	20,355.04
Miscellaneous supplies and expenses.....	314.84	343.33	348.84	2,580.96	2,797.37
Total, Miraflores Locks.....	21,139.63	25,399.67	14,212.89	152,444.90	187,531.39
Miraflores Spillway and East Dam:					
Operation.....	74.89	11.16		293.86	651.50
Maintenance of machinery and equipment.....	34.25	112.56	86.59	1,815.79	8,161.88
Maintenance of structure.....				387.03	648.74
Total, Miraflores Spillway and East Dam.....	109.14	123.72	86.59	2,496.68	9,462.12
Miraflores West Dam:					
Maintenance.....				347.72	377.17
Total, lock operation and maintenance.....	51,440.30	52,448.18	45,850.20	506,755.43	539,559.88
Dredging:					
Atlantic entrance.....	622.77	584.86	5,444.66	7,866.02	123,093.99
Gatun Lake.....					
Gaillard Cut.....	318,001.75	298,715.77	160,899.02	2,858,586.05	1,368,856.93
Miraflores Lake.....			5,649.99	19,724.07	8,628.79
Pacific entrance.....					
Total, dredging.....	318,624.52	299,300.63	166,993.67	2,886,176.14	1,500,579.71
Gatun Dam, maintenance:					
Removal of floating obstructions.....	1,032.76	675.75	11,342.79	15,991.77	38,209.81
Gatun-Mindil Levee, maintenance.....	1,827.35	1,630.78	1,721.36	16,934.52	12,260.19
Colon West Breakwater, maintenance.....		412.84	100.10	1,605.76	22,665.06
Colon East Breakwater, maintenance.....				41,328.32	82.63
Naos Island Breakwater, maintenance.....				58.45	461.93
Damages to vessels in locks.....	84.57		28.22	764.67	2,197.31
Damages to vessels in Canal.....		93.61		948.83	
Operation of floating derricks.....	14,470.17	14,950.02		74,377.18	
Maintenance of transportation tracks.....	1,957.90	813.32	3,171.22	18,541.45	33,030.53
Total, operation and maintenance.....	404,577.94	378,255.50	243,614.90	3,681,030.61	2,248,744.44
Proportion of overhead expenses.....	177,240.01	212,179.73	114,692.18	1,981,978.83	1,128,451.29
Total.....	581,817.95	590,435.23	358,307.08	5,663,009.44	3,377,195.73
Tolls.....	235,618.44	418.80	442,415.49	1,668,007.63	3,281,477.69
Tolls earned in excess of expenses.....			84,108.41		
Expenses in excess of tolls earned.....	346,199.51	590,016.43		3,995,001.81	95,718.04

## CLOSING HOTEL ASPINWALL.

Will Be Closed from July 1 to February 1.—Open to Visitors and Convalescents.

The Hotel Aspinwall on Taboga Island will be closed at the end of business on June 30 and, according to present plans, not reopened until February 1, 1917. It will then be operated during the time that the bulk of annual leaves of employees are being spent, as during this period the patronage of the hotel is ample to warrant its operation.

In the mean time a caretaker will be left in charge of the buildings and grounds, and employees whose health demands it may, on recommendation of the Chief Health Officer, occupy rooms in the building and carry on light housekeeping there during the closed period. It is considered that the most important service of the hotel has been in affording an inexpensively accessible place at which employees in poor health may spend short leaves for recuperation. This exorcises the bogey of having to take a long and expensive trip to the United States or possibly suffer a complete breakdown through sticking to the job on account of unwillingness or inability to spend the money.

Holiday picnic parties are also invited to make use of the grounds during the closed period. The caretaker in charge will have on hand a small stock of cigars and tobacco for sale to visitors. The Panama Canal launch service between Balboa and the island will be discontinued, but at present there is a launch making the round voyage from Panama every day. The Port Captain at Balboa can furnish launches for trips to the island.

The closing down of the hotel at this time is due to the continued loss through its operation. The average number of people staying there has been less than four a day during the past month, and the loss per year has been about \$4,000.

The falling off in patronage of the hotel is accounted for by the increased facilities for recreation which have developed during the past year, especially around Balboa and Panama. These include swimming at the several beaches, baseball games, prize fights, boating, fishing, automobiling and motor-cycling, and other social amusements which have developed with the concentration of population towards the ends of the Canal Zone.

The hotel at Taboga was established as a convalescent hospital in 1885 by the French, and when the Americans occupied the Canal Zone the place was rehabilitated and placed in operation as a sanitarium, under the management of the Department of Sanitation. This continued until January 16, 1914, when it was turned over to the Subsistence Department for operation as a hotel.

### Applications for family Quarters.

Applications for family quarters were on file in the several districts on May 31, 1916, as follows:

STATIONS.	Number of applicants.
Ancon	363 (55)
Ancon Hospital	4
Paraiso	173 (19)
Gatun	110 (10)
Cristobal	161 (36)
Total	811 (120)

NOTE.—The figures in parentheses show the number of applicants already occupying regular or non house-keeping family quarters at stations other than those at which applications are filed.

## Improvements at Hotel Washington Swimming Pool.

The improvements at the swimming pool of the Hotel Washington authorized to make the pool conform to the requirements established by Board of Health ordinances for



END ELEVATION OF BATH HOUSE.

pools and bathing beaches in the Canal Zone include the construction of an additional bath house, equipped with shower baths. Every user of the pool will be required to take a shower bath before entering the pool. Ground was broken last week, and the foundation

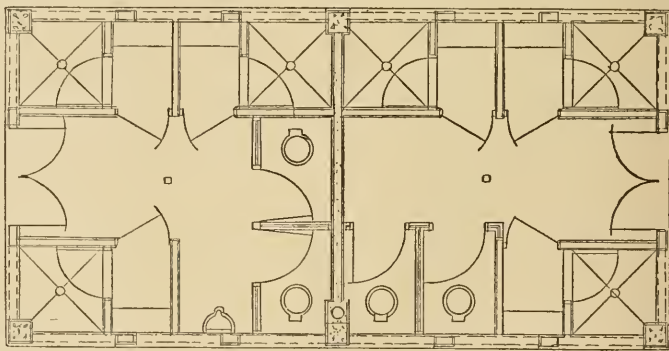


SIDE ELEVATION OF BATH HOUSE.

and groundwork plumbing have been completed.

The new bath house will be situated to the east of the pool, on the side towards the hotel.

the pool on the southwest; and the installation of a system of valves and pumps which will allow the pool to be unwatered easily for cleaning, and will pipe water into it



ARRANGEMENT OF INTERIOR OF BATH HOUSE.

It will be about 20 feet from the present bath house, and approximately 15 feet back from the walk which extends along the side of the pool. It will be built of concrete, in harmony

from a point well out from the shore, at the edge of the reef. The details of this work are under consideration and definite procedure has not been authorized.

### Final Exercises of the Canal Zone High School.

Beginning last Friday, the annual play of the Canal Zone High School is being performed at the several Canal clubhouses, and on Saturday June 17, it will be given in the National Theatre in Panama.

The commencement exercises of the school will be held in the National Theatre on Friday, June 30, beginning at 8.30 p. m. A special coach will be attached to the train of the Panama Railroad leaving Colon at 5.10 p. m., and for the return to Colon there will be a



special train that night, leaving Panama at 10.30. For the accommodation of people living on the Las Cascadas branch there will be a special coach on the train leaving Las Cascadas at 7.20 in the evening of June 30, and on the train leaving Panama for Las Cascadas at 10.40 p. m.

The school annual, *The Zonian*, has appeared and is being distributed. It contains 63 pages of varied sketches, poems, drawings, photographs, and advertisements, and was printed on the Isthmus.

The baccalaureate sermon will be delivered at the Ancon clubhouse on Sunday evening, June 25, by Rev. Willam Flammer. The program will begin at 8 o'clock.

On Wednesday, June 28, the graduating class of 1916 will hold its annual class day exercises at the Ancon clubhouse.

The friends of the Canal Zone High School are invited to the exercises given for the class of 1916.

#### College Entrance Examinations.

As stated in *THE CANAL RECORD* of March 22, college entrance examinations will be given in the board room of the Administration Building at Balboa Heights during the week from June 19 to 24, inclusive. The first examination will begin at 9 a. m., Monday, June 19, and the last will be held on the following Saturday.

#### Starting Championship Series of Baseball Games.

In preparation for the baseball game between all-star teams from the Army and the civilian population as a part of the entertainment on the Fourth of July, the first of the series of three to decide the championship will be played at Colon on Sunday, June 18. The second game will be played on July 4 at Balboa, and if a third is necessary to decide the series it will be played on the Sunday following the Fourth of July. Interest in this series is such that two special trains will be operated on the Panama Railroad on June 18, one from Panama at about 10.30 a. m., and one from Las Cascadas at about 11.30 a. m. Returning, the trains will leave Colon after the regular evening train.

#### Automobiles Excluded from Hospital Grounds.

The Acting Governor has ordered the suspension of all permits for automobiles to run through the grounds of Ancon Hospital. Exception to this is made in the case of Government machines engaged in delivery work. The exclusion is temporary, based on account of the construction work on the new wards for the hospital which are adjacent to the road.

## OFFICIAL CIRCULARS.

### Appointments.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., June 1, 1916.

CIRCULAR NO. 661-28:

1. Effective June 1, 1916, Mr. Crede H. Calhoun is appointed Chief of Division of Civil Affairs, and as such will be Director of Posts and will have supervision of the entire Division.

2. Mr. James E. McGrath is appointed Assistant Chief of Division of Civil Affairs, and as such will be Shipping Commissioner and Administrator of Estates.

CHESTER HARDING,  
Acting Governor.

### Allotments for Next Fiscal Year.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 5, 1916.

#### HEADS OF DEPARTMENTS AND DIVISIONS:

Requests for allotments to cover the expenses for the fiscal year ending June 30, 1917, should be submitted to the Auditor not later than June 15, 1916.

The Auditor will send you direct, with detailed instructions applicable to particular departments or divisions, four copies of a statement showing in detail the estimate made for 1917 and it is requested that you insert in the column "Requests for Allotment" opposite each item, the amounts that will be required for the coming fiscal year, transmitting same in duplicate to the Auditor.

The amount carried in the Sundry Civil Bill, as reported to the House, as compared with the estimates, taking into consideration the request that has been made for the use of the \$250,000 appropriated for the construction of quarantine stations, which it is expected will be made available for current expenses of the Health Department, is as follows:

Title of appropriation	Amount of estimate.	Amount to be appropriated.
Operation and Maintenance.....	\$5,940,485.53	\$5,750,000.00
Civil Government.....	662,357.00	600,000.00
Sanitation.....	715,962.00	700,000.00

The requests for allotments should be based upon the amount carried in the bill as reported, but allotments will not be made in excess of the amount appropriated.

If it is necessary to make any change in the estimates of work to be done by or for other departments or divisions, the division interested must be advised so that the estimates of the amount of work being done by one division for another shall be carried in the requests of the two divisions interested in exactly the same amount.

There have been sent you statements showing the amount charged against your allotment for the nine months of the fiscal year ending June 30, 1916. In making requests for allotments, these statements should be consulted.

CHESTER HARDING,  
Acting Governor.

### Coupon Books.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., June 5, 1916.

CIRCULAR NO. 663-4

The last sentence of paragraph 7 of Circular No. 663, dated April 1, 1914, is amended to read as follows:

Commissary books other than those of the \$15 denomination issued to gold employees will be stamped "Gold Roll" on the front cover. \$15 books should not be issued to silver employees. If

found necessary to issue them in any case to silver employees, they will be stamped "Silver Roll" on the front cover.

CHESTER HARDING,  
Acting Governor.

### Sailing of the "Ancoa."

PANAMA RAILROAD COMPANY,  
OFFICE OF SUPERINTENDENT,  
BALBOA HEIGHTS, C. Z., June 12, 1916.

To all concerned—The steamship Ancoa of the Panama Railroad Steamship Line will sail for New York from Cristobal at 10 a. m., June 17, 1916.

S. W. HEALD,  
Acting Superintendent.

### Stations for Watchman's Clocks.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 5, 1916.

To all concerned—In discontinuing watchman service around various buildings, the watchmen's clocks have been turned in and stations left on buildings in various places have not been taken down and returned. The instrument repair shop of the Mechanical Division advises that unless some of these stations are turned in, it will be necessary to place order in the States for some of them.

It is requested that any of these stations that may be available which are not now used, be collected and turned in to the instrument repair shop. As the stations are expendable and were issued with the clocks, they should be returned to the instrument repair shop without charge.

F. H. SMITH,  
Acting Chief Quartermaster.

### Wheels for Pencil Sharpeners.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 5, 1916.

#### HEADS OF DEPARTMENTS AND DIVISIONS:

The Washington office has advised that the supply of "Jupiter" pencil sharpener wheels in the United States is exhausted, and as this machine is made in Europe, a further supply can not be obtained until the close of the war. All dull wheels for this machine should be saved and sent to the Mechanical Division for resharpening.

F. H. SMITH,  
Acting Chief Quartermaster.

### Misdirected Letters.

BALBOA HEIGHTS, C. Z., June 13, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be procured upon request of the addressees. Requests may be made by telephone, calling Balboa, No. 132:

Allen, Leo	Lear, Charles B.
Ayers, Leah	Lebeau, F. J.
Beachboard, Mrs. Carrie	*Lewis, Frank
*Chamberlain, E. H.	McAfee, Dr. Larry B.
Chrisman, Ord	Miller, George E.
Cole, H. C.	Nixon, H. C.
Davrell, Miss L.	Payne, Robt. T.
Dunning, James	Porter, Carl
Hamilton, John	Sims, Dixie
Hays, A. E.	Sinclair, J. McDonald
Hitchcock, Mrs. J. J.	Turner, Dr. G. W.
*Holt, G. W.	Vaughn, J.

\*Paper.

### Launch Service to Taboga.

The following is the schedule of the launch service between Balboa and Taboga Island:

From Balboa to Taboga—The launch Taboga sails from Balboa dredge landing to Taboga daily, including Sundays, at 9.40 a. m. on Saturdays, Sundays, and holidays an additional trip is made at 5.30 p. m.

From Taboga Island to Balboa—Daily, including Sundays, at 10.45 a. m.; Saturdays, Sundays, and holidays, an additional trip at 7 p. m.

The rates at the Hotel Aspinwall are as follows:

	Per day.
Employees.....	\$2.00
Nonemployees.....	2.50
Children under 12 years of age.....	1.00
(Babies under 12 months free of charge.)	
Servants.....	1.00
Employees' rate for stay of 14 days or over.....	1.75
Launch rates for one way between Balboa and Taboga are as follows:	
Employees.....	\$0.30
Employees' children.....	.20
Nonemployees.....	.60
Nonemployees' children.....	.40
Launch tickets are sold only at the dredge landing at Balboa and at the office of the Hotel Aspinwall.	

### Deceased Employees.

Name.	Check No.	Native of	Isthmian resident.	Employed by	Date of death.
Francisco Flores.....	86392	Colombia.....	Camp Biedr.....	P. R. R.....	June 5, 1916.
Sidney Depeaser.....	39941	Barbados.....	Colon.....	Health Dept.....	June 4, 1916.
Henry Besumont.....	53314	Jamaica.....	Panama.....	Mechanical Div.....	June 3, 1916.
Augustus Henry.....	121153	Antigua.....	Colon.....	Building Div.....	June 4, 1916.
Alberto Rochet, alias A. Augier	28210	St. Lucia.....	Escoval.....	Mechanical Div.....	Mar. 18, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## JOINT COMMISSION.

## Notice of Awards.

In the matter of the claim of Ezequiel Ortega for property located near Punta de Chame, Republic of Panama, award No. 106, dated No. 76, May 31, 1916—An award is hereby made against the United States in favor of the person hereinafter named, in the sum of \$275 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the first day of July, 1916, and if payment on or before the first day of July, 1916, is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

*Esquid Ortega, docket No. 767*—For all right, title, and interest which the said Ezequiel Ortega may possess or may have possessed in and to all coconut grove previously located at Punta de Chame, Republic of Panama, which was destroyed by the dredging operations of the United States, the sum of \$275 United States currency.

FELERICO BOYO, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, Commissioners.

In the matter of the claim of Antonio Ensait, for property located near Panama, award No. 157, docket No. 1164, May 31, 1916—An award is hereby made against the United States in favor of the person hereinafter named, in the sum of \$1,154 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the first day of July, 1916, and if payment on or before the first day of July, 1916, is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

*Antonio Ensait, docket No. 1154*—For all right, title, and interest which the said Antonio Ensait may possess or may have possessed in and to all buildings and other improvements located on the Corozal road near the city of Panama, the sum of \$625 United States currency.

FELERICO BOYO, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, Commissioners.

## Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 252, docket numbers as shown, May 21, 1916—With reference to the following claims, counsel for the United States has filed motions alleging settlements made direct with the claimants, and has also filed copies of bills of sale and certificates of the Paymaster of The Panama Canal showing payment therein:

Docket No.	Claimant.	Date of payment.
1192	Therese Em-st.	2-13-15
1193	Therese Em-st.	4-18-15
1201	Marcelino Guerrero.	8-1-14
1262	Lusebio Julio.	7-1-15
1265	William Manahan.	6-14-15
1267	George F. E. Reid.	4-6-15
1268	Thomas Brisset.	6-14-15
1270	Alexander Lake.	1-1-15
1705	Daniel L. Orte (Hoyt).	8-1-15
1710	Louis Tontant.	4-10-15
1768	Kong Chong.	5-7-15
1777	Matilde Roman y Florinda Rodriguez.	4-10-16
1778-		
1779	Florinda Rodriguez.	3-20-16
1877	Teodocia de la Rosa de Dunbar.	9-1-15
1909	Lorenza (Lorenzo) Romero.	4-1-15
1910	John Williams.	10-24-14
1911	John M. Williams.	2-18-15
1917	Francisco Azar.	3-26-15
1918	Mozelle Gustave.	4-23-15
1919	Lillian McKay.	7-15-15
1920	Shirley Kwong.	3-1-15
1921	Yee Ho.	3-2-15
1922	Richard Gooden.	4-1-15
1923	George Daley (Daly).	2-27-15
1926	Maria Azar.	3-1-15
1928	Chin Sang (or Chin Sung).	4-1-15
1929	Samuel Miller.	7-15-15
1931	Tong Chong and Li Wo Chan.	1-16-15
1933	Philip W. Fredericks.	8-23-15
1934	Tong Chong and Li Wo Chan.	1-16-15
1935	Tong Chong.	2-16-15
1936	George Daley.	2-17-15
1937	Jose A. Saito.	3-1-15
1940	Adelina Ayala Cortez.	4-1-15
1941	Enfracia Rubado.	3-12-15
1942	Serafina Rubado.	3-1-15
1944	E. Couard (Eugene Couard).	4-9-15
1945	Richard George Lee.	4-1-15
3070	Mrs. William Foster (Caroline).	5-4-19

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FELERICO BOYO, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, Commissioners.

In the matter of sundry claims, rule of dismissal No. 253, docket numbers as shown, May 21, 1916—With reference to the following claims, counsel for the United States has filed motions alleging settlements made direct with the claimants, and has also filed copies of

bills of sale and certificates of the Paymaster of The Panama Canal showing payments therein:

Docket No.	Claimant.	Date of payment.
1284	Michael Sharpe.	2-1-15
1285	Michael Sharpe.	2-1-15
1928	J. Sam Hing.	3-1-15
1932	Mrs. H. A. Jones (wife of C. R. A. Jones).	3-1-15
1940	C. R. A. Jones.	3-25-15
1949	Leen Ho.	5-1-15
1952	Samuel Miller.	7-15-15
1954	Mrs. Isabel de Vincenini.	4-1-15
1955	Flusha Lewis (Fleisha).	4-1-15
1957	Yee Hop.	3-2-15
1959	Horacio Almenor.	3-30-15
1960	Yun Sang (Yuen Sing) (Yun Sing).	3-1-15
1961	Michael Taylor (Kao Tong Sing).	7-15-15
1966	Clotilde de Colona (C. A. de Colona).	5-4-15
1969	Pierre Roche.	2-17-15
1970	Mary Crispy.	4-23-15
1971	Isabel Hernandez.	2-18-15
1972	David Swiner.	2-15-15
1975	Tropical Trading Co., A. Jacobs, Agt.	5-19-15
1976	Ludislo Sosa.	5-18-15
1977	Alfonso Preciado.	3-1-15
1978	Alfonso Preciado.	3-1-15
1979-		
1980	Fred A. Gohern.	3-19-15
2516	Chow Shim Loong.	11-30-15
2518	Francisco O. Pino.	4-6-15
2520	Julio Maestre.	2-1-15
2522	Yuen Hing (Yuen Ming).	6-8-15
2523	Louis N. T. to alias Tong Sing Cho.	3-1-15
2525	Julio Maestre.	2-26-15
2629	J. B. Schuetz, dec'd, by T. C. Hinckley & Stevens Ganson.	3-27-16
2630	Santiago Samudio.	12-1-15
2631	Ricardo Maricao.	5-1-15
2632	R. G. Maricao, administrator estate of Gabriel Jose.	4-18-15
2633	Cassius Ernest (Ricardo Maricao, attorney in fact).	9-1-15
2636	J. Gabriel Deque.	2-5-15
2637	Don Carlos.	2-5-15
2638	Celebra Star Lodge.	7-1-15
2639	Emilio Choy.	9-1-15
2640	Lillian Deque.	5-1-15
2641	Avila Oquell P.	1-1-15
2649	Natividad Zeda.	7-12-15
2651	Anatole Bibiane.	4-13-15
2652	Catalina Paredes.	9-1-15
2660	Joseph M. Cavan.	8-20-15
2661	Anton Gordon.	10-26-14
2662	Dr. Felix E. Love.	7-10-15
2663	A. V. K. da Smith & Co.	7-30-15
2664	Robert Lawrence.	3-1-15
2666	John A. Pinzi.	7-19-15
2668	W. W. Wilson.	11-10-15
2693	Steven Dasy, alias Vilves Desir.	11-1-15
2694	Elizabeth Edwards, widow of Richard Edwards, dec'd.	8-15-14
2699	Matthew Cutlbert.	4-1-16
2701	Dale Smith.	3-1-15
2706	Charles H. Reid.	3-1-15
2708	Mrs. Christians F. Forsyth.	11-1-15
2719	Magdalena Valdez.	2-1-15
2721	Concepcion de Prado.	4-1-15
2722	Amiel Eraso (Eraso).	6-1-15
2723	Ramona R.	6-28-15
2727	Joanisset Rosemont (Rosemonde).	3-24-15
2730	Patricio Franca.	2-1-16
2735	John A. Ponce.	5-1-15
2734	John A. Ponce.	5-1-15
2745	John A. Ponce.	5-1-15
2746	Orinthia Anderson.	5-1-15
2745	Henry Parsley.	5-1-15
2754	Yee Yee (Yi Yui Pui).	5-1-15
2770	Nathan H. Turner.	8-21-15
2775	Julio N. Bonacorsi.	5-29-15
2776	Isadora Bros.	3-23-15
2778	Ricardo Aris.	2-1-16
2795	Ricardo Aris.	2-11-16
2804	William Kim or Chun Hing Sue.	2-17-16
2827	V. G. de Suse.	10-2-15
2835	John B. L. (Loray).	4-17-15
2835	Alfred Thompson.	4-17-15
2852	Manuel Lopez.	5-1-15
2867	Pablo Valdez.	7-1-15
2870	N. M. McAlmon.	7-1-15
2878	Elizabeth Webster.	4-1-15
2882	Mrs. K. M. Pinnock.	4-1-15

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FELERICO BOYO, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, Commissioners.

## Joint Commission Calendar.

The following is a calendar of claims set for hearing for the week ending June 24:

*Monday, June 19*—Docket 1365, John J. Gibbons.  
*Wednesday, June 21*—Docket 1383, Sarah Madison; docket 1402, Nathaniel Davis; docket 1412, Isabella Nichols; docket 1421, Jacinto Sanchez (Saint King); docket 1424, Julio Pastor; docket 1435, Kwong Hing; docket 1413, Maria E. Mendeta; docket 1417, G. Montilla et al.; docket 1448, Margarita Hereira; docket 1450, Andre (Andres) B. de Walendorf; docket 1452, William Desozza.

WILLIAM TAYLOR,  
Secretary.

## COMMISSARY DEPARTMENT.

## Cold Storage Prices.

The following list of retail prices of cold storage provisions will be effective June 15, 1916.

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts.

## FRESH BEEF.

	Price.
Beef, suet, special, per lb.	\$.033
Beef suet, native, per lb.	.03
Soup beef, special, per lb.	.05
Soup beef, native, per lb.	.05
Soup bone, special, per lb.	.023
Soup bone, native, per lb.	.024
Stew beef, native, per lb.	.08
Plate beef, native, per lb.	.08
Chuck roast (3 lbs. up), native, per lb.	.08
Rib roast, 2d cut (3 lbs. up), special, per lb.	.16
Rib roast, 2d cut (3 lbs. up), native, per lb.	.09
Rib roast, 1st cut (3 lbs. up), special, per lb.	.19
Rib roast, 1st cut (3 lbs. up), native, per lb.	.11
Pot roast, special, per lb.	.20
Pot roast, native, per lb.	.20
Rump roast, special, per lb.	.12
Rump roast, native, per lb.	.12
Porterhouse roast, special, per lb.	.23
Porterhouse roast, native, per lb.	.16
Chuck steak, native, per lb.	.09
Round steak, bottom, special, per lb.	.13
Round steak, bottom, native, per lb.	.09
Round steak, top, special, per lb.	.15
Round steak, top, native, per lb.	.10
Sirloin steak, special, per lb.	.20
Sirloin steak, native, per lb.	.20
Sirloin steak, choice cut, special, per lb.	.23
Sirloin steak, choice cut, native, per lb.	.16
Rump steak, special, per lb.	.20
Rump steak, native, per lb.	.12
Porterhouse steak (1 lbs. up), choice, per lb.	.34
Porterhouse steak (1 lbs. up), special, per lb.	.23
Porterhouse steak (1 lbs. up), native, per lb.	.17
Porterhouse steak, short, choice, per lb.	.20
Porterhouse steak, short, native, per lb.	.12
Porterhouse steak, short, special, per lb.	.35
Tenderloin steak, special, per lb.	.20
Tenderloin steak, native, per lb.	.35
Rib steak, native, per lb.	.11

## FRESH MEATS.

Lamb, chops, per lb.	.29
Lamb, chops, shoulder, per lb.	.20
Lamb, legs, 3 lbs. and over, per lb.	.24
Lamb, shoulder, trimmed, not less than 3 lbs. per lb.	.15
Lamb, stewing, per lb.	.12
Mutton, chops, short, per lb.	.20
Mutton, chops, shoulder, per lb.	.17
Mutton, leg, 8 to 10 lbs., per lb.	.19
Mutton, shoulder, trimmed, not less than 5 lbs. per lb.	.12
Mutton, stewing, per lb.	.09
Pork, hams, fresh (see footnote), per lb.	.25
Pork, loins, chops, or roast, per lb.	.19
Pork, shoulders, fresh (see footnote), per lb.	.24
Veal, chops, per lb.	.36
Veal, chops, shoulder, per lb.	.24
Veal, cutlets, per lb.	.36
Veal, loin for roasting, per lb.	.41
Veal, shoulder for roasting not under 4 lbs., per lb.	.18
Veal, stewing, per lb.	.15

## MISCELLANEOUS.

Beef heart, fresh, per lb.	.12
Brains, calves', per lb.	.10
Calves' heads, ea. per lb.	.78
Kidneys, beef, per lb.	.16
Livers, beef, per lb.	.29
Pigs' feet, fresh, per lb.	.05
Pigs' heads, fresh, whole ea., special, per lb.	.83
Pigs' heads, fresh, 1/2 head, half.	.42
Sausage, Bologna, per lb.	.17
Sausage, frankfurter, per lb.	.18
Sausage, liverwurst, per lb.	.16
Sausage, pork, per lb.	.26
Sausage, Salami, per lb.	.24
Spare ribs, pork, per lb.	.17
Steak, hamburger, per lb.	.17
Steak, hamburger, 20-pound container, per lb.	.14
Sweetbread, beef, per lb.	.09
Tails, ox, per lb.	.09
Tongue, beef, native, whole, per lb.	.20
Tripe, per lb.	.08
Veal, per lb.	.08
Yeast, cake.	.02

## CURED AND PICKLED MEATS.

Bacon, breakfast, whole piece, per lb.	.31
Bacon, breakfast, sliced, per lb.	.32
Bacon, sliced, per lb.	.32
Bacon, strips, whole strip, per lb.	.25
Beef, corned, per lb.	.25
Beef, salt, per lb.	.09
Ham, genuine Westphalia, per lb.	.50
Ham, mined, "Bologna style", per lb.	.16
Ham, shoulders, boneless, sugar cured, whole, per lb.	.19
Ham, shoulders, boneless, sugar cured, half, per lb.	.20
1. Ham, sugar cured (whole) per lb.	.26
2. Ham, sugar cured (half) per lb.	.29
3. Ham, sugar cured (sliced) per lb.	.34

1. Ham, sugar cured, boiled (whole) per lb.	.35
2. Ham, sugar cured, boiled (half) per lb.	.38
3. Ham, sugar cured, boiled (sliced) per lb.	.41
4. Ham, special, per lb.	.40
Pigs' feet, pickled, per lb.	.08
Pork, bellies, per lb.	.22
Pork, clear, per lb.	.14
Pork, standard mess, per lb.	.15
Spiced head meat, per jar	.30
Tongue, bee, corned oative, whole, per lb.	.20
Tongue, pigs', per lb.	.22

POULTRY AND GAME.

Broilers, corn fed, per lb.	.36*
Broilers, milk fed, per lb.	.38*
Capons, per lb.	.37
Chickens, fancy roasting, corn fed, per lb.	.34*
Chickens, fancy roasting, milk fed, per lb.	.36*
Ducklings, per lb.	.33
Fowls, light, per lb.	.28
Geese, per lb.	.31
Squabs, ea.	.45
Turkeys, per lb.	.51

DAIRY PRODUCTS.

Butter, creamery special, per lb.	.43
Butter, creamery, 60-62 lb. tub, whole tub	.42
Butter, Sheffield farms, extra fancy, per lb.	.50
Cheese, Edam, ea.	.30
Cheese, Edam, tin.	.43
Cheese, Gouda, per lb.	.36
Cheese, Parmesan, per lb.	.44
Cheese, Philadelphia cream, cake.	.09
Cheese, Roquefort, per lb.	.75
Cheese, snappy, cake.	.09
Cheese, Swiss, per lb.	.48
Cheese, Young America, per lb.	.20
Cream, 30 per cent, 1 pt.	.17**
Cream, 30 per cent, pt.	.20**
Cream, 30 per cent, qt.	.52**
Eggs, fresh, per lb.	.18
Eggs, fresh, 1 doz. only	.18
Fer-mil-lac, bottle.	.25**
Ice cream, (see footnote) qt.	.25
Ice cream, (see footnote) 1 gal.	.50
Milk, Sheffield farms, qt.	.15**
Oleomargarine, per lb. cts.	.27

FISH.

Bluefish, fresh, per lb.	.15
Codfish, dried, per lb.	.11
Haddock, smoked, per lb.	.15
Halibut, fresh, per lb.	.11†
Herring, smoked, per lb.	.13
Oysters, fresh, per qt.	.44
Salmon, fresh, per lb.	.14
Whitefish, smoked, per lb.	.32

VEGETABLES.

Beans, string, per lb.	.06
Beets, per lb.	.02
Cabbage, per lb.	.04
Carrots, per lb.	.03
Celery, per head.	.07†
Cucumbers, per lb.	.08
Egg plant, per lb.	.11
Lettuce, per lb.	.04†
Onions, per lb.	.04†
Parsley, per bunch.	.02†
Parsnips, per lb.	.04
Peppers, green, per lb.	.12
Platains, per doz.	.12
Potatoes, white, per lb.	.04
Potatoes, new, per lb.	.04
Potatoes, sweet, tropical.	.03
Radishes, per bunch.	.04
Rhubarb, per lb.	.02†
Squash, per lb.	.04
Tomatoes, per lb.	.11
Turnips, per lb.	.04†
Yams, per lb.	.03

FRUITS, DRIED.

Apples, evaporated, per lb.	.11*
Apricots, evaporated, per lb.	.16
Currants, canned, pkg.	.16
Figs, 10-oz. box.	.09
Peaches, evaporated, per lb.	.09
Pears, evaporated, per lb.	.18
Pear, citron, per lb.	.20
Pear, lemon, per lb.	.16
Pear, orange, per lb.	.16
Fruits, stewing, per lb.	.18
Raisins, seeded, pkg.	.10
Raisins, table cluster, per lb.	.13

FRUITS, FRESH.

Alligator pears, ea.	.08*
Apples, per lb.	.04†
Apples, select, per lb.	.07
Bananas, 8 bands and over, per bunch.	.40
Bananas, 6 and 7 bands, per bunch.	.40
Banana, ea.	.00†
Cherries, per lb.	.31
Coconuts, dry, each.	.04
Coconuts, water, each.	.05
Cranberries, per lb.	.18
Grapefruit, select, ea.	.13*
Lemons, per doz.	.14†
Limes, per 100	.60†
Mangoes, ea.	.02
Oranges, select, doz.	.03
Oranges, tropical, doz.	.12*
Fireapples, ea.	.08*

\* Indicates advance from preceding list.  
 \*\* Indicates five cents allowed for return of bottle.  
 † Indicates reduction from preceding list.  
 ‡ Sold only from commissaries, no orders taken for delivery.  
 † Not less than 1/2 ham or 1/2 shoulder of fresh pork will be sold.

SHIPPING INFORMATION.

Tide Predictions, Port of Balboa.  
 Panama (Balboa) tide predictions for the period until July 31 are given in this table:

JUNE.				
DATE.	Time and height of high and low water.			

Wed., June 14	2:00	8:17	14:15	20:53
	13 8	2 0	15 2	0 2
Thurs., June 15	2:53	9:10	15:06	21:43
	14 7	1 0	16 0	-0 7
Fri., June 16	3:44	9:59	15:58	22:29
	15 5	0 2	16 5	-1 4
Sat., June 17	4:36	10:46	16:50	23:15
	16 1	-0 3	16 7	-1 7
Sun., June 18	5:27	11:32	17:43	24:03
	16 5	-0 4	16 6	
Mon., June 19	0:01	6:19	12:24	18:34
	-1 5	16 6	-0 1	16 1
Tues., June 20	0:50	7:09	13:16	19:25
	-1 0	16 3	0 4	15 4
Wed., June 21	1:40	8:00	14:12	20:17
	-0 1	15 7	1 2	14 5
Thurs., June 22	2:35	8:50	15:10	21:13
	1 0	15 0	1 9	13 4
Fri., June 23	3:33	9:46	16:12	22:18
	2 1	14 1	2 6	12 6
Sat., June 24	4:33	10:49	17:13	23:29
	3 0	13 4	3 0	12 0
Sun., June 25	5:35	11:55	18:15	24:33
	3 6	13 1	3 1	
Mon., June 26	0:39	6:42	12:55	19:16
	12 0	3 8	13 0	3 0
Tues., June 27	1:33	7:37	13:48	20:10
	12 1	3 7	13 1	2 6
Wed., June 28	2:28	8:29	14:34	20:57
	12 5	3 4	13 4	2 1
Thurs., June 29	3:12	9:14	15:17	21:39
	12 9	2 9	13 6	1 6
Fri., June 30	3:53	9:56	15:56	22:17
	13 2	2 5	13 9	1 2

JULY.

DATE.	Time and height of high and low water.			
Sat., July 1	4:31	10:33	16:35	22:53
	13 5	2 2	14 0	1 0
Sun., July 2	5:08	11:10	17:12	23:28
	13 8	2 1	14 1	1 0
Mon., July 3	5:44	11:46	17:48	24:03
	13 9	2 1	14 0	
Tues., July 4	0:02	6:18	12:22	18:23
	1 2	14 0	2 3	13 8
Wed., July 5	0:36	6:50	12:59	18:57
	1 5	13 9	2 5	13 5
Thurs., July 6	1:11	7:22	13:39	19:32
	2 0	13 8	2 9	13 1
Fri., July 7	1:49	7:56	14:24	20:12
	2 5	13 6	3 2	12 6
Sat., July 8	2:33	8:37	15:15	21:00
	3 1	13 3	3 4	12 1
Sun., July 9	3:25	9:27	16:16	22:02
	3 5	13 1	3 5	11 8
Mon., July 10	4:25	10:31	17:19	23:17
	3 8	13 0	3 4	11 9
Tues., July 11	5:34	11:44	18:28	24:31
	3 8	13 3	2 8	
Wed., July 12	0:31	6:46	12:54	19:34
	12 4	3 4	13 9	1 9
Thurs., July 13	1:36	7:53	13:56	20:33
	13 3	2 5	14 8	0 7
Fri., July 14	2:35	8:52	14:52	21:26
	14 5	1 3	15 6	-0 5
Sat., July 15	3:30	9:45	15:47	22:14
	15 5	0 2	16 4	-1 4
Sun., July 16	4:23	10:34	16:39	23:00
	16 4	-0 6	16 8	-1 9
Mon., July 17	5:14	11:21	17:31	23:45
	17 0	-1 0	16 9	-1 9

DATE.	Time and height of high and low water.			
Tues., July 18	6:02	12:07	18:20	24:33
	17 2	-0 9	16 6	
Wed., July 19	0:30	6:40	12:56	19:06
	-1 4	17 0	-0 4	15 9
Thurs., July 20	1:16	7:34	13:45	19:53
	-0 5	16 3	0 5	14 9
Fri., July 21	2:06	8:19	14:37	20:42
	0 8	15 3	1 5	13 7
Sat., July 22	2:58	9:08	15:32	21:36
	2 0	14 0	2 5	12 5
Sun., July 23	3:55	10:03	16:32	22:44
	3 2	13 1	3 4	11 7
Mon., July 24	4:56	11:01	17:36	23:53
	4 1	12 3	3 9	
Tues., July 25	0:00	6:02	12:21	18:43
	11 2	4 6	12 0	4 0
Wed., July 26	1:12	7:09	13:25	19:46
	11 3	4 6	12 2	3 6
Thurs., July 27	2:09	8:07	14:17	20:39
	11 8	4 2	12 6	2 9
Fri., July 28	2:56	8:57	15:01	21:21
	12 3	3 5	13 1	2 2
Sat., July 29	3:37	9:39	15:41	22:00
	13 0	2 8	13 6	1 5
Sun., July 30	4:14	10:17	16:18	22:34
	13 5	2 2	14 0	1 0
Mon., July 31	4:48	10:52	16:53	23:07
	14 0	1 7	14 3	0 8

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.  
 The time used is Greenwich standard, for the meridian 78° W. The hours of the day are numbered consecutively from 00 (midnight) to 23 (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

Rainfall from June 1 to 10, inclusive.

STATIONS.		Maximum in one day.	Date.	Total for period.
Pacific Section—				
Balboa	Ins.			Ins.
Balboa Heights	.72	8		1 62
Miraflores	.69	70		2 04
Pedro Miguel	.96	10		2 39
San Francisco	.93	2		2 40
San Pedro	.79	8		2 52
Central Section—				
Culebra	1.50	8		2 43
Canal Zone	.70	8		2 32
Empire	1.02	8		2 73
Gamboua	.61	8		2 76
Juan Mina	.67	8		3 17
La Chorrera	2.46	7		5 81
*Vigia	2.81	8		6 00
Frijoles	1.80	8		3 95
*Monroe Lirio	3.60	8		4 90
Atlantic Section—				
Catun	2.33	8		3 72
*Brazos Brook	2.16	8		4 95
Colon	1.11	8		1 90

\*Standard rain gage—readings at 5 p. m. daily.  
 Automatic rain gage at unstarred stations—values midnight to midnight.

Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.		Arrives.	
Vessel.	Line.	Sails.	Arrives.
Santa Marta	U. F. C.	June 7	June 14
Metapan	U. F. C.	June 10	June 19
Almirante	U. F. C.	June 14	June 21
Almirante	P. R. K.	June 15	June 22
Cristobal	P. R. K.	June 16	June 23
Pastores	U. F. C.	June 17	June 25
Zacapo	U. F. C.	June 21	June 28

(Continued on page 372.)



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., June 11, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
June 5	Chile	British	Pacific Steam Navigation Co.	Cristobal	Valparaiso	General	1,109	4,040	2,628
June 5	Limari	Chilean	South American S. S. Co.	Cristobal	Valparaiso	General	1,157	3,631	2,421
June 5	Guernsey	Norwegian	Damask Acties Guernsey	New Orleans	Mejillones	Ballast		4,418	3,280
June 5	S. O. Barge No. 93	American	Standard Oil Company	Cristobal	San Francisco	Ballast		2,635	2,195
June 6	Uroyoli	Peruvian	Peruvian Steamship Line	Cristobal	Callao	General		4,278	2,206
June 6	Oak Branch	British	Nantius Steamship Co.	Baltimore	Callao	Coal and coke	6,726	4,810	3,741
June 6	Euryades	British	Alfred Holt & Company	Wilmington	Vladivostok	General	7,500	6,844	4,931
June 6	Cushing	American	Standard Oil Company	Tuxpan	Pisagua	Oil in bulk	8,493	6,978	4,569
June 8	Cauca	British	Pacific Steam Navigation Co.	Cristobal	Guayaquil	General		1,557	998
June 8	Delacor	Danish	Orient Steamship Company	New York	Chinkiang	Case oil	5,865	4,732	3,437
June 10	Son Jose	American	Pacific Mail Company	Cristobal	San Francisco	General		2,337	1,617
June 10	Penrith Castle	British	Lancashire Shipping Company	Newport News	Vladivostok	Barbed wire	5,465	4,363	3,321
June 10	Toyohashi Maru	Japanese	Nippon Yusen Kabushiki K'sha	Wilmington	Vladivostok	General	8,500	7,696	5,538

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

June 5	Dorset	British	Federal Steam Navigation Co.	Wellington	Avonmouth	General	7,500	9,009	6,406
June 6	Prolet	American	United States Navy	Manila	Hampton Roads	Navy supplies	300	11,143	6,749
June 6	Dogola	British	Pacific Steam Navigation Co.	Valparaiso	Liverpool	General	5,697	5,951	4,491
June 6	Curaco	British	N. Y. & Pacific S. S. Co.	Junin	New York	Nitrates, general	9,107	6,503	4,612
June 6	Svathesk	British	Strath Steamship Line	Mejillones	Norfolk	Nitrates	6,710	4,773	3,565
June 6	Hualago	Peruvian	Peruvian Steamship Line	Callao	Colon	General	2,371	4,538	2,430
June 7	Minnesota	American	American-Hawaiian Line	Antofagasta	Boston	Nitrates	8,601	7,016	4,785
June 8	Chimu	British	N. Y. & Pacific S. S. Co.	Antofagasta	Charleston	Nitrates, copper	6,500	4,925	3,725
June 9	Nissei Maru	Japanese	Okazaki Kisen Kaisha	Antofagasta	New Orleans	Nitrates	3,908	3,336	2,319
June 10	Yelivita	Chilean	Braun & Blanchard	Calita Buena	Cristobal (orders)	Nitrates	2,260	2,327	1,613
June 10	Kim	Norwegian	P. Johannessen	To-o-olla	Norfolk	Nitrates	10,160	7,552	5,605
June 10	Carpenteria	British	British India Steam Nav. Co.	Lyttleton, N. Z.	Colon (orders)	General	4,300	8,108	5,703
June 10	Lompoc	British	C. T. Boxters	Taitai	Colon (orders)	Ballast		7,488	5,342

## ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

June 10	Artison	American-Hawaiian Line	Newport News	June 11	Isthmion	American-Hawaiian Line	Rio de Janeiro
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## EXPECTED ARRIVALS FROM PACIFIC.

June 13	Jamaica	Pacific Steam Nav. Co.	Buenaventura	June 13	Paja California	Acties Baja California	Antofagasta
June 13	Quintero	Pacific Steam Nav. Co.	Guayaquil	June 15	Cocan Maru	Hachiro Kisen Kaisha	Chilean ports
June 14	Bolboa	Amer-Mex S. F. Trading Co		June 16	Tenato Maru	Goshi Kishi Kishimoto S	Antofagasta
June 13	City of Para	Pacific Mail S. S. Co.	San Francisco	June 16	Lord Derby	Occident & Orient Nav. Co.	Chilean ports
June 13	Los Angeles	Union Oil Co.	San Francisco	June 18	Florentino	Tolcath Steamship Co.	Chilean ports
June 13	Australian		Chilean ports	June 20	Matilda	Acties Matilda	Chilean ports

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
June 9	Manuel Colo	Spanish Line	Barcelona	June 5	Kilpatrick	United States Army	New York
June 10	Flandreux	French Line	Bordeaux	June 7	Neptun	Leyland Line	Gilveston
				June 10	Siskiyou	E. K. Wood Lumber Co.	New Orleans
*EXPECTED ARRIVALS.				*EXPECTED DEPARTURES.			
June 17	Coronado	Elders & Fyffes	Port Limon	June 12	Mannet Calro	Spanish Line	Barcelona
				June 16	Flandre	French Line	Bordeaux
				June 17	Coronado	Elders & Fyffes	Bristol via Kingston
					Siskiyou	E. K. Wood Lumber Co.	Unknown

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

*ARRIVALS.				*DEPARTURES.			
June 7	Guernsey	W. Wilhelmssens	High seas	June 9	Guernsey	W. Wilhelmssens	Taitai
June 3	Sir Francis (launch)	Thomas Drake	Seattle, San Diego				

\*Other than ships passing through the Canal.

(Continued from page 371.)

Alliance	P. R. R.	June 22	June 29	Santa Marta	U. F. C.	June 22	June 29	Heredia	U. F. C.	June 28	July 3
Calamara	U. F. C.	June 24	July 2	Metapoa	U. F. C.	June 26	July 4	Turrialba	U. F. C.	July 1	July 8
Carrillo	U. F. C.	June 28	July 5	Panama	P. R. R.	June 29	July 5	Parismina	U. F. C.	July 5	July 10
Colon	P. R. R.	June 29	July 5	Almirante	U. F. C.	June 29	July 6	CRISTOBAL-COLON TO NEW ORLEANS.			
CRISTOBAL-COLON TO NEW YORK.				NEW ORLEANS TO CRISTOBAL-COLON.				Heredia	U. F. C.	June 18	June 23
Adance	P. R. R.	June 15	June 22	Turrialba	U. F. C.	June 10	June 17	Turrialba	U. F. C.	June 18	June 26
Carrillo	U. F. C.	June 15	June 22	Parismina	U. F. C.	June 14	June 19	Parismina	U. F. C.	June 25	June 30
Tenadores	U. F. C.	June 19	June 26	Atenas	U. F. C.	June 17	June 24	Atenas	U. F. C.	June 25	July 3
Cristobal	P. R. R.	June 22	June 29	Cartago	U. F. C.	June 21	June 26	Cartago	U. F. C.	July 2	July 7
				Abongoret	U. F. C.	June 24	July 1	A bangoret	U. F. C.	July 2	July 10



## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

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Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Preparing for the Construction of a New Pier at Cristobal.

The mole in the rear of the new piers at Cristobal is being extended to provide an approach to an additional pier, to be constructed 300 feet beyond Pier 7 and to be known as Pier 6. A trestle is being driven along the axis of the mole and earth and rock from the borrow pit at Mount Hope are dumped from it. At the same time a pipeline suction dredge is cleaning the slip between Piers 7 and 8 to the full depth of 41 feet; and spoil from this work is delivered through a 24-inch pipeline, extending out the south side of the mole and discharging ahead of the trestle, on the center line of the extension. The extension will be made wide enough to provide for 10 parallel railway tracks.

Plans in connection with this work are being prepared in the office of the Engineer of Docks, and Pier 6 is to be constructed in general on the plans of Pier 7, now nearing completion; but there will be slight modifications, based on the experience gained in the construction of Pier 7. Like Pier 7 the new pier is to be 1,000 feet long by 212 feet in width. Pier 8 has the same length, but a width of 208 feet; the difference in width is based on a different spacing of the supporting caissons.

Terminal Office Building at Balboa to Be Ready July 15.

It is expected that the new Pacific terminal office building, situated at the head of the slip between Pier 18 and the quay wall at

Balboa, will be ready for occupancy on July 15. The offices of the Captain of the Port and the customs service for Balboa are preparing to occupy the third floor, and the receiving and forwarding agency of the Panama Railroad will have the first floor. All of the 15 rooms on the second floor have been rented for offices to steamship agents and other maritime interests.

In the construction of the similar building at Cristobal, adjacent to the entrance to the new concrete piers, the walls have been erected to the second story, and forms for the floor slab of the second floor are being placed at present. Work on this building was begun on April 4.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday June 19, amounted to 254,218 cubic yards. In addition, 23,950 cubic yards were rehandled by dredges in the course of disposing of spoil, but this is not reported as primary excavation; rehandling is part of the work of disposal, like hauling in barges to the dumping grounds, but primary excavation represents so much material taken out of the prism.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Cascadas .....	15-yard dipper .....	55,135
Gamboua .....	15-yard dipper .....	85,415
Paraiso .....	15-yard dipper .....	62,215
Coroza .....	Ladder .....	3,335
No. 83 .....	Pipeline suction .....	9,108
No. 89 .....	Pipeline suction .....	23,950
No. 84 .....	Pipeline suction .....	8,900

The aggregate of primary excavation from the bases of the Culebra slides since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the hour of midnight on June 19, 1916, has amounted to 14,992,636 cubic yards. This has been an average of 743,283 cubic yards per month.

In the current fiscal year, beginning with July 1, 1915, the total primary excavation from the Cut has amounted to 10,869,270 cubic yards up to midnight of June 19. This has been an average of 30,618 cubic yards per day.

#### Sailings of Panama Railroad Ships.

The steamship *Cristobal* of the Panama Railroad Steamship Line was delayed in her sailing from New York, scheduled for June 8, and did not clear until June 18. She is due to arrive at Cristobal on Sunday, June 25. On account of this delay, giving no ship out of New York in the week when the *Cristobal* was supposed to sail, and consequently no arrival at Cristobal last week, there is no sailing from Cristobal on Thursday, June 22.

The *Panama* sailed from New York on time on June 15 and is expected at Cristobal in the morning of Thursday, June 22. She is due to sail for New York on June 29. The date of sailing of the *Cristobal* can not be stated at this time.

#### NEWSHIPS FOR LUMBER TRADE.

"Artisan" and "Arborean" of American-Hawaiian Line Have Space for Large Deck Loads.

Two new ships of the American-Hawaiian Line, designed especially for the lumber trade, have recently made their maiden voyages through the Canal. Both are engaged at present in carrying nitrates from Chilean ports to the United States; their diversion to this trade, however, is regarded as temporary and on account of the high freights prevailing on nitrates because of the demand for them in the manufacture of explosives.

The first to pass through the Canal was the *Artisan*, making her maiden voyage to Arica with coal, and clearing from Balboa on June 13. The *Arborean*, a sister ship, arrived at Balboa from Talal on June 17, carrying 9,000 tons of nitrates to Norfolk. After bunkering with fuel oil she entered the Canal on the same day for transit. This was her first homeward voyage; outward, she left Baltimore in April with coal for Buenos Aires, after the delivery of which she proceeded to Talal by way of the Strait of Magellan.

The ships are similar in construction to the type known as the "west coast lumber schooner," but their size is unusual for this type. Each is 389 feet six inches in length by 54 feet six inches beam, with a depth of 32 feet six inches, and is registered at 5,550 tons gross. The essential feature in construction for the lumber trade was the placing of the engines and most of the housing well aft, leaving a long, broad deck clear, except for the masts, for the loading of lumber. The bridge, with the captain's quarters, is of skeleton construction and lumber can be loaded beneath it practically as well as on the open deck, all the way forward to the fore-castle. The ship can carry approximately two and one-half million feet of lumber on deck, and about an equal quantity in the hold. She has a dead weight capacity of approximately 9,500 tons. Her hatches will allow 80-foot timbers to be loaded in the hold.

Under the rules in force at present for the collection of tolls at the Canal, these ships will be charged not more than the equivalent of \$1.25 per net registered ton. As their net registered tonnage is 3,663 and their net tonnage according to the rules for measurement for the Panama Canal (originally determining the charge, at \$1.20 per ton) is 4,329, they will go through for considerably less than the charges under the original plan. The charge on Panama Canal basis, without a deck load, would be \$5,194.80 for the vessel if not in ballast. On the basis of United States net tonnage it will be \$4,578.75. In addition, all the deck load will go through free.

The original rules for the measurement of vessels for the levying of tolls provided that tolls should be levied upon a net tonnage which should represent the actual earning capacity of

the ship, in units of tons of 100 cubic feet. Space occupied by deck load, being a part of the cargo-carrying capacity of the ship at the time of transit, was to be charged for at the same rate as the interior cargo-space, namely, \$1.20 per ton of 100 cubic feet, or 2.83 cubic meters.

To avoid the endless complications which would have arisen if the Canal had attempted to take cognizance of the nature of cargo in levying tolls, the basis of actual cargo-carrying capacity was adopted. This is the fundamental principle at Suez and is the usual Canal principle where commercial expediency has not dictated departure from the practice, and discrimination with respect to cargoes, in competition with land transportation.

Section 8 of the Panama Canal Act, however, provided that the amount of the tolls levied on a ship should not be in excess of the equivalent of \$1.25 per net registered ton. Shippers carrying deck loads brought this to the attention of the Government, claiming that the aggregate of charges on interior space and deck load should not be greater than the equivalent of \$1.25 times the registered net tonnage of the ship as found by applying the United States rules of measurement. The Attorney General decided that the factor of the United States registered tonnage should be considered; and that while tolls would continue to be levied on net Canal tonnage, at \$1.20 per net ton for loaded vessels, and also \$1.20 per 100 cubic feet of deck load, the amount collectible should not exceed \$1.25 per net ton, United States registry measurement.

Following this ruling, deck loads are charged for sometimes, and sometimes not, dependent on whether the sum of the Canal tonnage plus deck load tonnage, multiplied by \$1.20, is less or greater than the vessel's net registered tonnage multiplied by \$1.25.

#### Collier "Ulysses" Sails with Record Cargo.

The Canal collier *Ulysses*, pressed into service to carry cargo from Cristobal to New York in order to relieve the congestion of goods transferred on the Isthmus from west coast carriers for shipment to the United States, sailed in the forenoon of Tuesday, June 20, carrying 14,161 tons of cargo. This, as far as is known, is the largest cargo which any ship has ever carried into or out of an Isthmian port or through the Canal.

#### Civil Service Examination.

The following examination will be held about July 23, 1916; announcement No. 828 concerning the same is posted at clubhouses and post-offices: Laboratory aid in seed testing (male and female); \$600 to \$720 a year.

## CANAL WORK IN MAY.

Monthly Report of the Acting Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., June 15, 1916.

The Honorable the Secretary of War,  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of May, 1916:

#### Department of Operation and Maintenance.

**Lock operation and maintenance.**—In addition to the usual maintenance, operation, and repair work at the locks, the following was the status of work done at the places named:

**Pedro Miguel.**—Installation of machinery for operation of regulating valves, completed; assembling regulating valves for upper end, 50 per cent completed.

**Miraflores.**—Applying bitumastic protective coating to gates in east chamber, 93 per cent completed; track turnout, lower east level, completed; assembly of valves for south end of locks, completed; assembly of valves for north end of locks, commenced; grading work, lower wing wall on east side of locks, completed; removal of tracks from Miraflores Dam, completed.

**Gatun.**—Construction of concrete steps in east backfill slope near storehouse, and cement walk in front of storehouse, completed.

The following commercial lockages were made:

Locks.	Lock-ages.	Vessels.
Gatun.....	110	127
Pedro Miguel.....	126	129
Miraflores.....	126	129

**Electrical Division.**—The net output of the power plants was: Gatun hydroelectric station, 3,757,050 kilowatt-hours; Miraflores steam station, 43,890 kilowatt-hours; total 3,800,940 kilowatt-hours.

The usual maintenance, operation, and repair work was carried on, and construction work was continued for the Canal and the Army.

**Municipal Engineering Division.**—In addition to the usual maintenance, operation, and repair work, the following were the principal items of construction work in progress: Construction of water and sewer systems and roads for the Coast Artillery posts at Fort Randolph and Fort Sherman; installation of air, oil, and water lines at Cristobal coaling station and Mount Hope oil handling plant; installation of 6-inch water line for fire protection in Balboa yard; construction of sidewalks and asphaltic concrete pavement in

the vicinity of the Panama Railroad freight station in Panama City; construction of asphaltic concrete streets at the new Balboa ice plant, and the new Ancon Hospital buildings; and the extension of the Balboa townsite to provide for new quarters to be constructed on the "Marine reservation." All uncompleted work on pavements and pipe lines and similar work at Balboa terminals that was incomplete on April 30, was turned over to the Municipal Engineering Division on May 1, upon the abolition of the Pacific terminals subdivision of the Division of Terminal Construction, which work was prosecuted during the month. It included cleaning up work around the dry dock, pavement on and around Pier 18, the taking up of pipe lines that were no longer required around the Pacific terminals, and other miscellaneous items of work.

**Division of Meteorology and Hydrography.**—The rainfall for the month was above normal at nine stations and deficient at nine stations, and ranged from 14.23 inches at Brazos Brook to 8.41 inches at Monte Lirio, the maximum precipitation recorded on any one day being 5.42 inches, at Balboa on the 26th instant. The estimated rainfall over the Gatun Lake watershed was 15 per cent below the 6-year normal, and over the Chagres River basin, above Alhajuela, 17 per cent below the 15-year normal, and totaled 10.93 inches and 10.51 inches, respectively. The Chagres River discharge at Alhajuela was 20 per cent below the 15-year normal, and furnished 51 per cent and 43 per cent respectively, of the net and total yields; and the Gatun Lake watershed net and total yields were 11 per cent and four per cent, respectively, below the 6-year May normal. Gatun Lake varied in elevation from 86.51 on the 17th to 85.90 on the 5th, averaging 86.26, and Miraflores Lake varied from 54.47 on the 23rd to 53.54 on the 13th, and averaged 53.97. Four seismic disturbances were recorded at Balboa Heights during the month, but no damage was reported as a result of any of them.

#### Division of Terminal Construction.

##### PACIFIC TERMINALS.

**Dry dock and entrance pier.**—Twenty-five cubic yards of concrete were placed in filling around the valves and gate moving machinery covers. Considerable work was done in drilling the concrete floors and coping for the blocking system, cleats, capstans, and hand rail stanchions, 4,741 lineal feet of holes and 1,962 lineal feet of slots being drilled. There were 38 cleats set in the coping, weighing, with their anchor bolts, 11,522 pounds. The concrete slabs for the footwalks on the dry dock gate were poured, but the stanchions had not been placed at the end of the month. The erection of structural steel and pumping machinery was completed and the remaining work consists in making the final alignments and adjustments, painting, and testing machinery. The control table and electrical installations are about 60 per cent completed. Work on the entrance pier consisted of some electrical wiring and other miscellaneous items.

**Cooling plant.**—At the unloader wharf the capstan pit at station 6 plus 50 was been completed so far as it can be until the installation of the capstan, 23 cubic yards of reinforced concrete being used in the pit. In the re-loader wharf 250 lineal feet of horizontal fenders were built, and the riprap slope wall behind the dock was completed. At the coal pocket, the last pipe pile required for the

#### Deceased Employees.

Name.	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Juan Renteria.....	90200	Colombia.....	Camp Bierd....	P. R. R. ....	June 11, 1916.
Victor Welsh.....	110558	Barbados.....	Colon.....	P. R. R. ....	June 15, 1916.
Manassa Bernard.....	110454	Jamaica.....	Colon.....	P. R. R. ....	June 13, 1916.
James Parks.....	98835	Jamaica.....	Colon.....	P. R. R. ....	June 13, 1916.
Francisco Santana.....	87878	Canary Islands	Colon.....	P. R. R. ....	June 12, 1916.
Fred White.....	79621	Jamaica.....	Colon.....	P. R. R. ....	May 31, 1916.
Alfred Brown.....	74173	Jamaica.....	Colon.....	Terminal Const.	June 10, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



viaduct foundations was driven, and 128 cubic yards of concrete were used in filling and capping the piles and for the conveyor hopper foundation. The last masonry plate for the viaduct was set on May 11, and the foundations turned over for the erection of the steel. The erection of the remaining portion was started the following day and the riveting was completed on May 23rd, 104 tons of steel being erected during the month, bringing the total steel in the completed viaduct to 361 tons. At the transformer house, the erection of the north bay was started on May 1, and completed on May 12, and the riveting was completed on May 18th, 19.5 tons of steel being erected, bringing the total steel in the completed transformer house to 73 tons. The placing of the hy-rib for the sides of the transformer house was started on May 11, and 75 per cent completed at the end of the month. Work on the rubble wall at the west end of the coal pocket continued and 56 cubic yards of rubble were placed. A cable anchorage for use in moving the berm cranes was built at the west end of the north berm crane track and consists of a large eye-bolt embedded in nine cubic yards of mass concrete poured in the ground. For the duct lines leading to the reloader wharf, 36 cubic yards of reinforced concrete were placed and 908 lineal feet of tile duct used, 226 lineal feet of duct line being built. The erection of steel under Washington order No. 40483 amounted to 183.50 tons, making 744 tons to date. The erection of the conveyor tower was started on May 2 and completed on May 8, and the riveting was completed on May 22, the total steel in the tower amounting to 60 tons. The corrugated iron covering for the roof and sides of the conveyor tower was completed. The riveting of the wharf bunker was completed on May 10th, 5,794 rivets being driven in May, making a total of 21,100 rivets in the completed wharf bunker. The corrugated iron roofing and sides of the bunker and the downspouts were erected complete, but not painted.

**Docks**—On quay wall c-d two caisson braces were placed, and on quay wall d-e the pipe outlet boxes were grouted up on the face of the wharf. On pier No. 18, the special anchorages at bents Nos. 20, 25, 30, and 35 were completed, 42 cubic yards of reinforced concrete being placed around the bents. The gaps left in the retaining walls around the center section of the pier were closed, 75 cubic yards of mass concrete being used. The backfill was completed with 865 cubic yards of coral, and the paving was completed with 311 square yards of brick and 233 square yards of wood block pavement. The riveting of the sheeting on both the top and bottom sections of the sheets for covering the doors was 98 per cent completed, and the erection of the housings was 85 per cent completed. The erection of the doors proper began on May 23, and at the end of the month the top and bottom sections were in place in 16 openings along the south side of the pier.

**Excavation and filling**—The total excavation for the month amounted to 50 cubic yards, and was used in backfilling the dry dock duct line trench. One thousand three hundred and eighty-one cubic yards of filling and embankment were placed, 1,000 cubic yards of which were coral used in the center section of pier No. 18.

The greater part of all of the foregoing work was accomplished by the forces of contractors,

or by other divisions under work requests.

#### ATLANTIC TERMINALS.

**East Breakwater**—Two thousand seven hundred and three cubic yards of run-of-bank rock from Sosa Hill, and 1,040 cubic yards of soft rock from the Mount Hope borrow pit were dumped in the breakwater fill. Two thousand three hundred and eighty-nine blocks, containing 28,018 cubic yards of concrete, were placed by derrick barge, and 729 concrete blocks, containing 6,866 cubic yards of concrete, were plowed from cars, making a total of 31,884 cubic yards placed and plowed during the month.

**Concrete blocks**—Pouring of blocks for the East Breakwater continued during the month as follows:

Place.	Blocks poured.	Volume (cubic yards.)	Remaining to be poured (cubic yards.)
Walker & Torbert (contractors).....	1,695	20,849	30,246
Coco Solo.....	1,023	9,207	16,894
Cristobal coaling plant	1,238	6,561	6,684
Colon (P. R. R. forces)	804	2,251	Comb.
<b>Totals.....</b>	<b>4,760</b>	<b>38,868</b>	<b>53,822</b>

**Coaling plant**—All but 20 of the creosoted tender piles for reloader wharf were driven; approximately 20 per cent of the chocking and framing for this wharf was accomplished; and all concrete work for wharf bunker was completed. The two stocking and reclaiming bridges are completely assembled. The stucco work on office tower under Washington order No. 40483 was completed and 26,500 pounds of steel were placed in the feeder hopper and conveyor for the wharf bunker. The reloaders are structurally complete with the exception of a few miscellaneous items. On May 13 reloader No. 1 was given a "shake-down" run; a barge was brought under the tower and approximately 300 tons of coal run over conveyor or belts through tower into barge. The contractor under Washington order No. 40587 was engaged during the month in adjusting engines, spotting and scraping engines, making adjustment in 50-ton hopper of tower No. 4; placing roof over stair landings on conveyor floors of all towers; and on various other items of work necessary to put the unloading towers into acceptable condition. The standard gage track scales and scale house were completed, adjusted, and tested. The dredge *Marmot* was engaged during the month in widening the coaling plant slip to 300 feet.

All of the foregoing, with the exception of the filling in connection with the East Breakwater, was performed by contractors, or other divisions under work requests.

The Division of Terminal Construction was abolished at the close of business May 31, 1916, and the remaining inspection and construction forces, formerly under the supervision of the Engineer of Terminal Construction, were directed to report to the Engineer of Maintenance.

#### Marine Division.

One hundred and twenty-nine vessels passed through the Canal, 60 northbound and 69 southbound. Of this total, 27 were of American register and 65 of British register. Fourteen vessels were measured, and 86 vessels were inspected to see whether their certificates conformed to the rules, and such changes made therein as were necessary. The United States net equivalent tonnage was computed on 24 vessels. Statements showing vessels making

the transit of the Canal in both directions are appended hereto.\*

#### Dredging Division.

The total excavation for the month, including earth, rock, and gravel, was 1,409,275 cubic yards, exclusive of 180,193 cubic yards rehandled and not credited. Of this total, 108,094 cubic yards of material were removed from the Balboa inner harbor, 7,206 cubic yards of earth and 3,750 cubic yards of rock were removed from the Canal prism between Miraflores Locks and the sea, 10,050 cubic yards of original excavation from the Canal prism in Miraflores Lake, 98,863 cubic yards of earth, and 1,035,040 cubic yards of rock from Gaillard Cut, and 31,716 cubic yards of earth and 52,809 cubic yards of rock from the Cristobal coaling station. On May 31, 1916, there remained to be removed from the Canal prism 775,710 cubic yards of earth, and 1,814,287 cubic yards of rock construction excavation. The excavation of sand and gravel from the Chagres River continued, and 3,354 cubic yards of sand, 346 cubic yards of No. 1 gravel, 946 cubic yards of No. 2 gravel, and 51,011 cubic yards of run-of-bank gravel, were excavated.

The slides in Gaillard Cut continued active during the month.

The rock breaker *Vulcan* was engaged the entire month in breaking the rock shoal at Station 2261 to Station 2267 east, near the old Panama Railroad steel dock at Balboa, 1,141 holes being broken over an area of 21,900 square feet, with a total penetration of 3,794 lineal feet and a theoretical breakage of 2,250 cubic yards. The drill barge *Teredo* No. 2 worked in the Canal prism at the Pacific end, 600 holes being driven over an area of 15,000 square feet, with a total penetration of 10,546 lineal feet, and a theoretical breakage of 9,760 cubic yards. Hydraulic graders Nos. 1, 2, and 3, were engaged the entire month at Station 1770, grading, ditching, maintaining ditches, and moving and repairing pipe lines broken by slides.

The work of destroying water hyacinths continued.

#### Mechanical Division.

Shop orders authorized during the month numbered 862, an increase of 29 as compared with the previous month: those left over from April numbered 717, and those carried forward into June numbered 607. The output of the foundry was 202,195 pounds of iron, 157,878 pounds of steel, and 27,012 pounds of brass. Hoisting was done on 4,101 pieces of equipment, and shop and field repairs were made on 6,961 pieces, including 518 cars repaired in shop. During the month, work on the air compressor barge to supply air for drills in Gaillard Cut was completed and the barge was put into service. The completion of this barge permitted the *Caribbean* being removed from this duty and sent to the dry dock at Cristobal for completion of the alterations for converting her into a cattle boat for the Supply Department. At the Balboa oil plant, the installation of the second 10-inch oil line from the pump house on the trestle to the oil crib was completed, and the bottom and lower strake of the new 55,000-barrel oil storage tank No. 5 was completed. At the Mount Hope oil

\*The information contained in these tables has been published in the weekly reports in THE CANAL RECORD. The statements are therefore not printed.

Five of the vessels making the transit were in the military service of the Government and 124 were commercial ships.

plant, the Texas Company completed its fire walls around tanks Nos. 10 and 41.

#### Building Division.

In addition to the usual maintenance, operation, and repair work, the following is the approximate status of the Canal structures in course of construction in the districts named:

Item.	Per cent completed.
Arcon-Balboa—	
Ball on refrigerating plant.....	100
Unit of Ancon Hotel group.....	10
Terminal office building.....	10
Concrete bachelor quarters, Ancon.....	95
Ancon laundry.....	75
Swimming pool, Balboa clubhouse.....	100
Bath house at swimming pool.....	10
Eu Ling No. 25, Balboa shops.....	98
Building No. 29, Ball on shops.....	96
Panama Railroad station, Chorrillo.....	99
Brick work at Miraflores power house.....	85
Concrete coal bunker and unloader wharf, Balboa coaling plant.....	5
Roofs on concrete barges, Dock 17.....	75
Corozal-Darien—	
Mess hall at Miraflores Locks.....	50
Mess hall at Pedro Miguel Lock.....	60
Gatun-Colon—	
Office building for coaling station.....	75
Storehouse, Colon Hospital.....	75
Terminal office building.....	15
Ice cream and milk-bottling plant.....	36
Remodeling American consulate.....	100
Remodeling Cristobal commissary.....	100
American Bible Society building, work resumed and building.....	65

#### Supply Department.

The force report for the period ended May 24, 1916, showed a total of 23,593 employees of The Panama Canal and the Panama Railroad Company, of whom 3,479 were white Americans and 20,114 laborers. Of the latter, approximately 79 were Europeans and the remainder West Indian negroes. There was a decrease of 252 Americans and an increase of 211 West Indian negroes, making a net decrease of 41.

The occupants of Government quarters numbered 6,813 Americans, of whom 3,727 were men, 1,524 women, and 1,562 children; and 10,066 West Indians, of whom 5,840 were men, 1,723 women, and 2,503 children.

The value of material received during the month was \$932,009.44. It came forward in 26 steamers, and the total weight of cargo, exclusive of lumber and piling, was 25,368 tons. Some of the principal items were 674,716 feet, board measure, of lumber, 339,931 bags of cement, and 593,400 pounds of coke.

The Balboa oil plant handled 152,362.06 barrels of fuel oil, and the Mount Hope plant handled 7,963.15 barrels, the greater part of which in each instance having been handled for The Panama Canal.

#### Health Department.

**General**—No case of yellow fever, smallpox, or plague, originated on or was brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 33,023, was 9.45 per thousand per year, as compared with 8.02 for the preceding month and 10.41 for the corresponding month of last year. Thirty deaths occurred in the Canal Zone.

**Employees**—The health of employees continued good. The number of names on the payrolls for the month was 34,393. On this basis, the admission to hospitals and quarters, 821, gave a rate of 285.45 per thousand, as compared with 207.70 for the preceding month and 307.28 for the corresponding month of last year. The admission rates to hospitals and quarters for malaria were: Whites, 20.64; blacks, 8.87; and Americans, 14.02. The

total number of deaths from all causes was 15. Of these, 10 died from disease, or 3.49 per thousand, as compared with 6.38 per thousand for the preceding month and 2.43 for the corresponding month of last year. No American employees died from disease or from accidents during the month.

#### Accounting Department.

The cash balance in Canal construction appropriations on May 31, 1916, was \$7,732,670.36, and in the fortifications appropriations \$1,117,752.15. The payrolls for May, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$927,414.05, and the fortifications roll amounted to \$30,153.32. Payments by the Disbursing Clerk in Washington amounted to \$924,061.18, and by the Paymaster on the Isthmus, \$1,211,826.63. Payment of \$244,439.56 was also made to the Panama Railroad Company for commissary books. Collections on the Isthmus amounted to \$1,608,530.01, of which \$974,496.21 was repaid to appropriations, \$240,589.30 was commissary collections and other trust funds, and \$393,444.50 was miscellaneous receipts to be covered into the treasury. Of the miscellaneous receipts, \$370,345.04 was collected on account of tolls. Collections by the Disbursing Clerk at Washington amounted to \$37,466.31, and deposits in the sum of \$246,403.80 were made with the Assistant Treasurers to be applied in payment of tolls and other charges against vessels using the Canal. Requisitions for purchases in the United States amounted to \$661,738.75, as against \$1,357,889.92 for the preceding month, the total for the fiscal year being \$7,538,749.59. Canal revenue collections and miscellaneous funds received amounted to \$171,183.40, and disbursements under the same heading amounted to \$84,066.92.

#### Executive Department.

##### DIVISION OF CIVIL AFFAIRS.

One hundred and thirty-nine licenses of all kinds were issued. Eighteen estates were received for administration and 23 settled, the total cash received during the month amounting to \$387.66, and the total value of the estates closed was \$952.14. At the port of Balboa 105 vessels entered and 106 vessels cleared and at the port of Cristobal 146 vessels entered and 137 vessels cleared.

**Postal service**—Postmasters remitted on account of money order fees, stamp sales, second-class mail collections, postal due collections, and box rent receipts, \$7,239.54. Money orders issued during the month aggregated \$275,931.33. Of this total, \$82,425 represented the value of deposit money orders issued without fee in lieu of postal savings certificates. Deposit money orders were paid to the value of \$103,290 and postal savings certificates to the value of \$5,727. The balance of postal savings deposits, represented by unpaid certificates and deposit money orders, aggregated \$392,197, as compared with \$418,789 at the close of the preceding month.

##### POLICE AND FIRE DIVISION.

Three hundred and seventeen arrests were made, of which total 284 were males. Fifty-four convicts were confined in the penitentiary at the close of the month. Nine persons were deported, six of whom were convicts who had completed their sentence in the penitentiary, and three of whom were prisoners who had served their terms in jail.

Three fires occurred, and the property of The Panama Canal suffered damage to the

extent of \$60; private property, the property of the Panama Railroad, and the property of the United States Army suffered no damage.

#### COURTS.

In the District Court 70 cases were settled; 10 civil, 27 probate, and 21 criminal cases were filed; and 109 cases of all kinds were pending at the close of the month. In the magistrate courts 15 civil and 318 criminal cases were disposed of.

#### DIVISION OF SCHOOLS.

The total enrollment was 1,600 for the white schools and 1,039 for the colored schools. In the white schools the net enrollment was 1,357, the average daily attendance 1,060.5, and the average number belonging, 1,087.6. In the colored schools the net enrollment was 775, the average daily attendance, 441.8, and the average number belonging, 510.

#### Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including rehandled cargo and cargo stevedored, amounted to 250,335 tons, of which 237,465 tons were handled at the Colon agency. The following quantities of coal were bunkered in steamers: Colon agency, 24,687 tons; Balboa agency, 5,584 tons; total, 30,271 tons.

In connection with the work on pier No. 7, 15,025 paving brick were laid on the floor of the pier, and 1,277,625 pounds of structural steel for the pier shed were erected.

Sixteen thousand nine hundred and nine cubic yards of soft rock fill from the Mount Hope borrow pit were placed in the fill in the rear of the fire station at Cristobal.

Work was resumed on the preliminary borings for the extension of the mole at Cristobal docks on May 4, and two holes were drilled, consisting of 195.9 lineal feet of wash drilling and 14.9 lineal feet of diamond drilling. The total number of holes drilled to date is 12, consisting of 926.5 lineal feet of wash drilling and 96 lineal feet of diamond drilling.

Respectfully,

CHESTER HARDING,

Acting Governor.

#### Final Work on Swimming Pool at Balboa.

The new concrete swimming pool in the rear of the Canal clubhouse at Balboa is ready to be placed in service as soon as the fence enclosing it and the bath house shall have been completed. This will be of woven wire fencing, similar to that used on farms in the United States, stretched between lengths of galvanized iron piping. Connections have been made with the condensing system of the new refrigerating plant at Balboa to supply the pool with the salt water used in condensing. The water is to be pumped originally from an intake 20 feet below low tide level at the head of the slip between Pier 18 and the quay wall, in the inner harbor.

The pool is to be used for the swimming and diving contests on the Fourth of July, and is to be placed in use not later than July 1. Lines have been painted on the bottom to mark the courses for racers who, swimming with their faces under water and their eyes open, can keep directly over the lines. A diving tower has been built at the deep water end of the pool, and will remain as part of the permanent equipment.



## PANAMA RAILROAD COMPANY.

## TIME TABLE FOR PASSENGER SERVICE ON JULY 4, 1916.

Supplement No. 1 to Current Time Table No. 23, Effective from 2.15 a. m., Tuesday, July 4, to 2.30 a. m., Wednesday, July 5, Only.

## MAIN LINE.

SOUTHWARD.									NORTHWARD.								
FIRST CLASS.									FIRST CLASS.								
2d class	STATIONS.								STATIONS.								2d class
201	123	121	119	117	115	113	*111		110	112	114	116	*118	120	122		202
A. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	A. M.	Leave	A. M.	A. M.	P. M.	P. M.	P. M.	A. M.	A. M.		A. M.
2.30	11.05	9.05	7.10	5.10	11.05	9.15	7.15	Colon	8.55	10.55	12.45	6.50	10.45	12.45	1.55		10.45
2.30	11.10	9.10	7.15	5.15	11.10	9.20	7.20	Mount Hope	8.50	10.50	12.40	6.45	10.40	12.40	1.50		10.45
2.35	11.15	9.15	7.20	5.20	11.15	9.25	7.25	Mindi	8.45	10.45	12.35	6.40	10.35	12.35	1.45		10.37
2.50	11.20	9.20	7.25	5.25	11.20	9.30	7.30	Gatun	8.40	10.40	12.30	6.35	10.30	12.30	1.40		10.32
3.02	11.30	9.30	7.35	5.35	11.30	9.40	7.40	Quebrancha	8.30	10.30	12.20	6.25	10.20	12.20	1.30		10.15
3.06	11.35	9.35	7.40	5.40	11.35	9.45	7.45	Monte Lirio	8.25	10.25	12.15	6.20	10.15	12.15	1.25		10.10
3.10	11.40	9.40	7.45	5.45	11.40	9.50	7.50	Bonio	8.20	10.20	12.10	6.15	10.10	12.10	1.20		10.04
3.20	11.46	9.46	7.51	5.51	11.46	9.56	7.56	Frijoles	8.14	10.14	12.04	6.09	10.04	12.04	1.14		9.56
	11.53	9.53	7.58	5.58	11.53	10.03	8.03	Darien	8.07	10.07	11.57	6.02	9.57	11.57	1.07		
3.30	11.55	9.55	8.00	6.00	11.55	10.05	8.05	Caimito	8.05	10.05	11.55	6.00	9.55	11.55	1.05		9.32
	A. M.				P. M.												
3.42	12.04	10.04	8.09	6.09	12.04	10.14	8.14	Gambua	7.55	9.55	11.45	5.50	9.45	11.45	12.55		9.24
4.02	12.15	10.15	8.20	6.20	12.15	10.30	8.30	New Culebra	7.45	9.45	11.35	5.40	9.35	11.35	12.45		9.12
4.12	12.29	10.29	8.34	6.34	12.29	10.44	8.44	Pedro Miguel Jct.	7.33	9.33	11.23	5.28	9.23	11.23	12.33		9.00
5.05	12.35	10.35	8.40	6.40	12.35	10.50	8.50	Miraflores Lock	7.26	9.26	11.16	5.21	9.16	11.16	12.26		
	12.39	10.39	8.44	6.44	12.39	10.54	8.54	Corozal	7.21	9.21	11.11	5.16	9.11	11.11	12.21		8.50
5.17	12.43	10.45	8.48	6.48	12.43	11.00	8.00	Balboa Heights	7.15	9.15	11.05	5.10	9.05	11.05	12.15		8.39
	12.50	10.50	8.55	6.55	12.50	11.05	9.05	Panama	7.10	9.10	11.00	5.05	9.00	11.00	12.10		8.35
A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	Arrive	A. M.	A. M.	A. M.	P. M.	P. M.	P. M.	A. M.		A. M.
201	123	121	119	117	115	113	111		110	112	114	116	*118	120	122		202

\*Train No. 118, leaving Panama 9 p. m. for Colon, will make first stop at Gambua.

## PANAMA-LAS CASCADAS BRANCH.

SOUTHWARD.									NORTHWARD.								
FIRST CLASS.									FIRST CLASS.								
149	147	145	143	141	139	137	135	133	*131	STATIONS.							
A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	A. M.	A. M.	Leave	Arrive	A. M.	A. M.	A. M.	P. M.	P. M.	P. M.
1.35	12.25	10.25	7.15	4.30	1.10	10.50	9.00	7.00		Las Cascadas.	6.35		8.50	10.25	1.00	3.55	7.05
1.40	12.30	10.30	7.20	4.35	1.15	10.55	9.05	7.05		Empire.	6.28	6.40	8.44	10.19	12.55	3.48	6.58
1.45	12.35	10.35	7.25	4.40	1.20	11.00	9.10	7.10		Culebra.	6.55	6.35	8.39	10.14	12.50	3.43	6.53
2.00	12.50	10.50	7.40	4.55	1.35	11.15	9.25	7.25	7.15	Paraiso.	5.22	6.20	8.23	9.58	12.36	3.29	6.38
2.03	12.53	10.53	7.43	4.58	1.38	11.18	9.28	7.28	7.16	Pedro Miguel Jct.	5.19	6.19	8.20	9.55	12.33	3.26	6.35
2.09	12.59	10.59	7.49	4.54	1.44	11.24	9.34	7.34	7.20	Miraflores Lock	5.07	6.15	8.14	9.49	12.26	3.20	6.25
2.13	13.03	11.03	7.53	4.59	1.49	11.29	9.39	7.39	7.24	Corozal.	5.00	6.15	8.10	9.43	12.21	3.15	6.20
2.20	1.10	11.10	8.01	5.16	1.55	11.35	9.45	7.45	7.30	Balboa Heights	4.55	6.05	8.05	9.39	12.15	3.10	6.15
2.25	1.15	11.15	8.05	5.20	1.59	11.40	9.50	7.50	7.35	Panama	4.50	6.00	8.00	9.35	12.10	3.05	6.10
A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	A. M.	A. M.	Arrive	Leave	A. M.	A. M.	A. M.	P. M.	P. M.	P. M.
149	147	145	143	141	139	137	135	133	*131			130	132	134	136	138	140

\*Train No. 131, leaving Empire 7 a. m., carrying soldiers only, who participate in exercises.

Main line trains will wait at Pedro Miguel for connections for Las Cascadas branch trains; and Las Cascadas branch trains will wait for connections from main line trains, unless otherwise instructed.

## Subscription Lists in Campaign for Members for Red Cross.

Of the Red Cross subscription lists which have been sent out among the departments and divisions of the Canal organization in the campaign for increased membership, several have not been returned. The secretary of the Canal Zone chapter requests that they be returned to him at Balboa Heights for accounting purposes; but if there are prospects for more members the lists may be retained a little longer.

The bureau of membership of the central organization of the American Red Cross has issued a circular stating that on account of the great increase in members resulting from the campaign there has been difficulty in keeping up to date the entries for subscription to the *Red Cross Magazine*, which is sent to every member; and that this will account for the delay, if new members should not receive the magazine the first month after joining.

## OFFICIAL CIRCULARS.

## Charges for Electric Current.

THE PANAMA CANAL.

EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., June 12, 1916.

CIRCULAR NO. 678-8:

The rate for electric current furnished to individuals (nonemployees) and companies in the Canal Zone, and

to employees of The Panama Canal and Panama Railroad Company for commercial use, as prescribed in Circular 676-5, is hereby amended, effective July 1, 1916, as follows:

## CURRENT CONSUMPTION IN ONE MONTH.

	Per kilo-watt-hour.
First 100 kilowatt-hours.....	\$ .08
Next 200 kilowatt-hours.....	.06
Over 300 kilowatt-hours.....	.04

CHESTER HARDING,

Acting Governor.

## Classification of Survey Requests.

THE PANAMA CANAL.

EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., June 9, 1916.

CIRCULAR NO. 638-1:

1. In future, separate survey requests will be submitted to the Surveying Officer, covering the following classes of property, and no request will cover more than one class:

- China and glassware for subsistence use.
- Linen for subsistence, hotel, and hospital use.
- Plant items.
- Miscellaneous items, other than above.

2. All survey requests will be arranged alphabetically where practicable, items of property must be laid out for inspection by the Surveying Officer, in the same order that they appear on the survey requests.

CHESTER HARDING,

Acting Governor.

## Tickets for Trains on Fourth of July.

THE PANAMA CANAL.

EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., June 12, 1916.

To all concerned—1. No employees' 24-trip tickets nor regular complimentary passes of any kind will be

honored on Panama Railroad trains on July 4, except those which may be presented by officials of the Republic of Panama or a foreign country.

2. Enlisted men of the Army or Navy, in uniform, will not be required to present any form of transportation, but one of the following forms will be necessary for the passage of other persons:

- (a) Regular railroad tickets or mileage.
- (b) Fourth of July tickets, to which those who contributed to the celebration are entitled.
- (c) Official business trip passes.
- (d) 120-trip tickets, books stamped "Good on Sundays or holidays."

3. This notice is published sufficiently in advance to enable persons traveling on official business on July 4 to avail themselves of official business trip passes.

4. A schedule for the operation of trains on July 4 will be issued later.

CHESTER HARDING,

Acting Governor, The Panama Canal,

Second Vice President, Panama Railroad Co.

## Annual Report.

THE PANAMA CANAL.

EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., June 13, 1916.

## HEADS OF DEPARTMENTS AND DIVISIONS:

It is desired that annual reports for the fiscal year ending June 30, 1916, be submitted to this office not later than August 1, 1916.

The reports will be prepared in quintuplicate, on the same size and grade paper as that used for previous annual reports, namely,  $\frac{1}{4}$  by 14 inches. Reports will be submitted to the Governor by heads of departments and divisions covering the work under their jurisdiction, as follows: The Engineer of Maintenance; the Marine Superintendent; the Resident Engineer, Dredging Division; the Superintendent of the Mechanical Division; the Resident Engineer, Building Division; the



Chief Quartermaster; the Chief Health Officer; the Auditor; the Executive Secretary; the General Purchasing Officer and Chief of the Washington Office; and the Special Attorney.

Where certain duties or certain parts of the work have been transferred from one department or division to another, or where new departments or divisions have been created, the department or division in which the work or duties are lodged as of June 30, 1916, will submit report for the entire fiscal year, obtaining any necessary data from the official previously in charge of the work, or from the records maintained by him, if such official has left the service.

The official photographer will take appropriate photographs to illustrate the report. Heads of departments or divisions whose reports require illustration should notify this office immediately what photographs are desired, in order that the work may be properly planned. The photographs are intended to show the progress of the work, especially new features, and no photographs will be included if the subject has been sufficiently covered in a previous report.

#### ORGANIZATION CHARTS.

Organization charts of your respective departments and divisions, similar to those which have been published heretofore in the annual reports, will also be submitted. These must show the actual authorized organization as of July 1, 1916. Tracings of the charts above requested should be 21 inches from top to bottom inside of the border lines, the length is immaterial. There should be a 2-inch border for binding on the left hand side and a 1-inch border on the three remaining sides. Departments in which no draftsmen are employed may submit a rough draft of the organization chart, to be completed in this office.

#### INCREASES IN PAY AND ORGANIZATION.

The Sundry Civil Act, approved March 3, 1915, provides as follows:

"Except in cases of emergency, or conditions arising subsequent to and unforeseen at the time of submitting the annual estimates to Congress, and except for those employed in connection with the construction or permanent quarters, offices, and other necessary buildings, dry docks, repair shops, yards, docks, wharves, warehouses, and other necessary facilities and appurtenances for the purpose of providing coal and other materials, labor, repairs, and supplies, and except for the permanent operating organization under which the compensation of the various positions is limited by section four of the Panama Canal Act, there shall not be employed at any time during the fiscal year nineteen hundred and sixteen under any of the foregoing appropriations for the Panama Canal, any greater number of persons than are specified in the notes submitted respectively in connection with the estimates for each of said appropriations in the annual Book of Estimates for said year, nor shall there be paid to any such person during that fiscal year any greater rate of compensation than was authorized to be paid to persons occupying the same or like positions on the first day of July, nineteen hundred and fourteen; and all employments made or compensation increased because of emergencies or conditions so arising shall be specifically set forth, with the reasons therefor, by the governor in his report for the fiscal year nineteen hundred and sixteen."

It is desired that the information required be submitted to this office in not later than July 15, 1916, and that it be in tabulated form on paper eight by 14 inches, in accordance with the following outline:

#### EXPLANATION OF INCREASES TO ACCOMPANY ANNUAL REPORT FOR THE FISCAL YEAR 1916.

Designation.	Increase in Pay.		Increase in Numbers.		Explanation.	
	Rate authorized in organization July 1, 1914.	Increased to	Number authorized in 1916 Book of Estimates.	Increased to		
The statement herein required will cover only the gold forces.						Acting Auditor. THE PANAMA CANAL, EXECUTIVE DEPARTMENT, BALBOA HEIGHTS, C. Z., June 17, 1916. HEADS OF DEPARTMENTS AND DIVISIONS: Effective June 17, Mr. Ad. Faure will act as Auditor
Any increases that were explained in last year's report may be omitted from the present statement.						
CHESTER HARING, Acting Governor.						

#### Unauthorized Removal of Books from Clubhouse Libraries.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT, BALBOA HEIGHTS, C. Z., June 14, 1916.

To all employees of The Panama Canal and Panama Railroad—A recent inventory of the library books at the Balboa clubhouse shows that books are being removed from the clubhouse building without authority. A recent canvass of bachelor quarters in Balboa and Ancon resulted in recovering 40 of the missing books. In some instances as many as three clubhouse books were found among the private books of employees, of which

there was no record in the clubhouse that these books had been loaned out. The library regulations allow only one book to be loaned to one person at a time, for each deposit of \$1.50.

All employees of The Panama Canal and the Panama Railroad are hereby directed to return to the several clubhouses at once all clubhouse books in their possession which have not been regularly issued.

A further search for books both in bachelor and family quarters, will be made from time to time. Any employee in whose quarters or possession clubhouse books are found, except such as have been loaned out under library regulations, is subject to prosecution under the law and dismissal from the service.

CHESTER HARING, Acting Governor, The Panama Canal, Second Vice President, Panama Railroad Co.

#### Permits to Enter Military Reservations.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT, BALBOA HEIGHTS, C. Z., June 16, 1916.

#### HEADS OF DEPARTMENTS AND DIVISIONS:

As all permits to military reservations expire June 30, 1916, it is requested that you submit by June 25, the names of employees or your department or division whose duties necessitate frequent visits to the reservations.

It is desired to issue extended permits only as above outlined, and names of employees who make but occasional trips to reservations should not be submitted. These should be covered by individual request from head of department or division whenever necessity requires.

CHESTER HARING, Acting Governor.

#### Accountability for Nonexpendable Property Charged to Depot Commissary.

THE PANAMA CANAL, ACCOUNTING DEPARTMENT, BALBOA HEIGHTS, C. Z., June 16, 1916.

#### CIRCULAR NO. 124:

Circular No. 121, designating Mr. Beni L. Jacobson as an accountable official for nonexpendable property in the commissaries and Ancon laundry, is hereby revoked.

Effective July 1, 1916, Capt. F. H. Smith will assume accountability for all nonexpendable property charged to Depot Commissary.

Mr. Jacobson will cease to be an accountable official of the Panama Railroad upon effecting a transfer of his accountability to Captain Smith.

H. A. A. SMITH, Auditor, The Panama Canal.

Approved: CHESTER HARING, Acting Governor.

#### Closing Account of Superintendent, Cristobal Coaling Station.

THE PANAMA CANAL, ACCOUNTING DEPARTMENT, BALBOA HEIGHTS, C. Z., June 15, 1916.

To all accountable officials and storekeepers—It is requested that a special effort be made to promptly accomplish all invoices covering material and property transferred from the superintendent, Cristobal coaling station; also that invoices be prepared to cover material and property shipped to that official but not yet invoiced.

It is desired to close out this account at an early date.

AD. FAURE, Chief Accountant.

needed, submitted so that same can be filled prior to above date.

A. BRYAN, Storekeeper, Supply Department.

Approved: F. H. SMITH, Acting Chief Quartermaster.

#### Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 304, on Wednesday, June 28, 1916, beginning promptly at 8 a. m. for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, room No. 211, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, June 30, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

By direction of the chairman of the board. GEO. J. VANOGESLIE, Recorder, Board of Local Inspectors.

#### Proposals for Watch Inspection.

Sealed bids will be received in the office of the Acting Chief Quartermaster, The Panama Canal, Balboa Heights, Canal Zone, until 10 a. m., June 24, 1916, and then opened, for the services of a watch inspector, to inspect the watches of employees of The Panama Canal and Panama Railroad Company, and to make repairs to chronometers and master clocks. Copy of form of contract, containing specifications, and form of proposal, can be secured upon application to the office of the Acting Chief Quartermaster. Bids will be received only from first class watch makers and jewelers who are considered competent to perform the duties required, and who have an established business of this kind on the Isthmus. Bids must be accompanied by certified check, post-office money order, or cash, in amount of \$50 as a guarantee to enter into contract, should bid be accepted. Proposals should be marked "Proposal for watch inspection" and addressed to Acting Chief Quartermaster, Balboa Heights, C. Z.

#### Midirected Letters.

The following insignificantly addressed letters and papers have been received in the office of the Director of Posts and may be procured upon request of the addressees. Requests may be made by telephone, calling No. 182, Balboa:

Blake, W. M.	Pile, Dr. George
Cash, Robert	Ploesck, Mrs. E. N.
Cole, Iva	Rockley, P. L.
Curran, John	Sampson, James
Hamilton, John	Smith, William
Huebner, Julius E.	Thompson, Miss Emma
Livardis, Mrs. L. F.	Walker, Edgar
Lyle, Edward	Wotke, Peter
Mignell, S.	

#### Launch Service to Taboga.

The following is the schedule of the launch service between Balboa and Taboga Island:

From Balboa to Taboga—The launch Taboga sails from Balboa dredge landing to Taboga Island, including Sundays, at 9.30 a. m. On Saturdays, Sundays, and holidays an additional trip is made at 5.30 p. m.

From Taboga Island to Balboa—Daily, including Sundays, at 10.45 a. m.; Saturdays, Sundays, and holidays, an additional trip at 7 p. m.

Launch tickets are sold only at the dredge landing at Balboa and at the office of the Hotel Aspinwall.

COMMISSARY DEPARTMENT.

Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective June 13:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Gherkins, spiced, sour, qt.....	\$0.12	\$0.15
Gherkins, spiced, sour, 5-gal. keg.....	2.15	2.85
Gherkins, sweet, 5-gal. keg.....	6.90	6.20
Olives, queen, qt.....	.25	.30
Olives, queen, 5-gal. keg.....	.28	1.15
Olives, queen, 2-gal. keg.....	1.90	2.20
Olives, queen, 10-gal. keg.....	4.30	5.25
Olives, queen, 5-gal. keg.....	8.00	9.95
Pickles, sweet, mixed, qt.....	.25	.28
Pickles, sweet, mixed, 5-gal. keg.....	4.90	5.20
Pimentos, 55, tin.....	1.05	1.25
Sauce, tobasco, bot.....	.24	.34
Sugar, granulated, 55, sack.....	.31	.37

EFFECTIVE JUNE 14, 1916.

Sandals, pr.....	1.20	1.30
Boys' shoes, pr.....	3.10	3.60
Boys' shoes, pr.....	3.10	3.60
Children's shoes, pr.....	1.90	2.10
Children's shoes, pr.....	1.10	1.20
Girls' shoes, pr.....	2.20	2.60
Men's shoes, pr.....	4.70	4.90
Men's shoes, pr.....	5.20	5.90
Men's shoes, pr.....	3.70	4.00
Men's shoes, pr.....	4.95	5.65
Men's shoes, pr.....	5.35	5.80
Men's shoes, pr.....	6.16	6.60
Men's shoes, pr.....	5.25	6.00
Men's shoes, pr.....	3.15	3.35
Women's shoes, pr.....	2.00	2.20
Brush and dauber, set.....	.26	.34
Leggins, pr.....	.71	.95

EFFECTIVE JUNE 15, 1916.

Egg powder, (Egis), 2-oz., tin.....	.28	.25
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EFFECTIVE JUNE 19, 1916

Boats, sauce, ea.....	4.35	4.50
Chimneys, ea.....	.09	.11
Cots, folding, ea.....	2.35	2.55
Cups and saucers, set.....	.05	.06
Decanters, qt., ea.....	3.85	4.65
Decanters, pint, ea.....	4.65	3.70
Dishes, ea.....	2.85	2.95
Dishes, ea.....	1.25	1.30
Dishes, ea.....	.70	.80
Dishes, ea.....	5.35	5.50
Glasses, champagne, ea.....	.70	.95
Jugs, waife, ea.....	.70	.70
Jugs, ea.....	.40	.53
Jugs, ea.....	.28	.31
Kettles, ea.....	.66	.93
Kettles, ea.....	.33	.41
Knives, pocket, ea.....	.39	.45
Knives, pocket, ea.....	.80	.90
Knives, pocket, ea.....	.50	.57
Knives, pocket, ea.....	.98	1.10
Knives, pocket, ea.....	.73	.88
Mattresses, ea.....	4.60	4.35
Pans, pudding, ea.....	.16	.18
Plates, ea.....	.06	.08
Plates, ea.....	.53	.56
Plates, ice, ea.....	1.10	1.40
Plates, ea.....	2.50	.56
Platters, ea.....	2.30	2.60
Platters, ea.....	.24	.39
Platters, ea.....	.15	.25
Platters, ea.....	1.30	1.50
Pots, coffee, ea.....	.09	.11
Pots, coffee, ea.....	.34	.40
Pots, tea, ea.....	4.15	4.30
Pots, coffee, electric, ea.....	7.55	7.85
Saucepans, ea.....	.40	.58
Saws, ea.....	.80	.87
Scissors, pr.....	.25	.35
Stoves, electric, ea.....	5.30	5.80
Trunks, ea.....	13.50	14.85
Tubs, wash, ea.....	.84	.91

EFFECTIVE JUNE 22, 1916

Bats, cricket, ea.....	4.00	3.30
Bay rum, St. Thomas, bot.....	.25	.28
Bedsprads, ea.....	1.50	1.10
Belts, ea.....	.15	.10
Blankets, ea.....	.43	.53
Books, score, ea.....	.72	.55
Buttons, pearl, ea.....	.07	.05
Cloth, yd.....	.14	.12
Coats, rain, ladies', ea.....	4.75	5.00
Diaper, piece.....	.71	.97
Diaper, piece.....	.84	1.05
Envelopes, pkg.....	.02	.03
Flannel, yd.....	.28	.30
Gloves, wicket, ea.....	3.25	3.75
Gloves, batting, ea.....	2.60	2.20
Handkerchiefs, ea.....	.12	.19
Hats, felt, ea.....	1.35	1.40
Hats, straw, ea.....	2.35	2.20
Hats, straw, ea.....	2.35	2.20
Lawn, yd.....	.12	.12
Muslin, yd.....	.10	.12
Nets, hair, ea.....	.09	.12
Pin, book.....	.06	.09
Pique, yd.....	.16	.19

SHIPPING INFORMATION.

Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions for the period until July 31 are given in this table:

DATE.	Time and height of high and low water.			
	DATE.	Time and height of high and low water.	DATE.	Time and height of high and low water.
Wed., June 21.....	1:40	8:00	14:12	20:17
	-0.1	15.7	1.2	14.5
Thurs., June 22.....	2:35	8:50	15:10	21:13
	1.0	15.0	1.9	13.4
Fri., June 23.....	3:33	9:46	16:12	22:18
	2.1	14.1	2.6	12.6
Sat., June 24.....	4:33	10:49	17:13	23:29
	3.0	13.4	3.0	12.0
Sun., June 25.....	5:35	11:55	18:15	.....
	3.6	13.1	3.1	.....
Mon., June 26.....	6:39	6:42	12:55	19:16
	12.0	3.8	13.0	3.0
Tues., June 27.....	1:33	7:37	13:48	20:10
	12.1	3.7	13.1	2.6
Wed., June 28.....	2:28	8:29	14:34	20:57
	12.5	3.4	13.4	2.1
Thurs., June 29.....	3:12	9:14	15:17	21:39
	12.9	2.9	13.6	1.6
Fri., June 30.....	3:53	9:56	15:56	22:17
	13.2	2.5	13.9	1.2

JULY.

DATE.	Time and height of high and low water.			
	DATE.	Time and height of high and low water.	DATE.	Time and height of high and low water.
Sat., July 1.....	4:31	10:33	16:35	22:53
	13.5	2.2	14.0	1.0
Sun., July 2.....	5:08	11:10	17:12	23:28
	13.8	2.1	14.1	1.0
Mon., July 3.....	5:44	11:46	17:48	.....
	13.9	2.1	14.0	.....
Tues., July 4.....	0:02	6:18	12:22	18:23
	1.2	14.0	2.3	13.8
Wed., July 5.....	0:36	6:50	12:59	18:57
	1.5	13.9	2.5	13.5
Thurs., July 6.....	1:11	7:22	13:39	19:32
	2.0	13.8	2.9	13.1
Fri., July 7.....	1:49	7:56	14:24	20:12
	2.5	13.6	3.2	12.6
Sat., July 8.....	2:33	8:37	15:15	21:01
	3.1	13.3	3.4	12.0
Sun., July 9.....	3:25	9:27	16:16	22:02
	3.5	13.1	3.5	11.8
Mon., July 10.....	4:25	10:31	17:19	23:17
	3.8	13.0	3.4	11.9
Tues., July 11.....	5:34	11:44	18:28	.....
	3.8	13.3	2.8	.....
Wed., July 12.....	0:31	6:46	12:54	19:34
	12.4	3.4	13.9	1.9
Thurs., July 13.....	1:36	7:53	13:56	20:33
	13.3	2.5	14.8	0.7
Fri., July 14.....	2:35	8:52	14:52	21:26
	14.5	1.3	15.6	-0.5
Sat., July 15.....	3:30	9:45	15:47	22:14
	15.5	0.2	16.4	-1.4
Sun., July 16.....	4:23	10:34	16:39	23:00
	16.4	-0.6	16.8	-1.9
Mon., July 17.....	5:14	11:21	17:31	23:45
	17.0	-1.0	16.9	-1.9
Tues., July 18.....	6:02	12:07	18:20	.....
	17.2	-0.9	16.6	.....
Wed., July 19.....	0:30	6:49	12:56	19:06
	-1.4	17.0	-0.4	15.9
Thurs., July 20.....	1:16	7:34	13:45	19:53
	-0.5	16.3	0.5	15.9
Fri., July 21.....	2:06	8:19	14:37	20.3
	0.8	15.3	1.5	16.1
Sat., July 22.....	2:58	9:08	15:32	21:36
	2.0	14.0	2.5	12.5
Sun., July 23.....	3:55	10:03	16:32	22:44
	3.2	13.1	3.4	11.7
Mon., July 24.....	4:56	11:01	17:36	.....
	4.1	12.3	3.9	.....

DATE.	Time and height of high and low water.			
	DATE.	Time and height of high and low water.	DATE.	Time and height of high and low water.
Tues., July 25.....	0:00	6:02	12:21	18:43
	11.2	4.6	12.0	4.0
Wed., July 26.....	1:12	7:09	13:25	19:46
	11.3	4.6	12.2	3.6
Thurs., July 27.....	2:09	8:07	14:17	20:39
	11.8	4.2	12.6	2.9
Fri., July 28.....	2:56	8:57	15:01	21:21
	12.3	3.5	13.1	2.2
Sat., July 29.....	3:37	9:39	15:41	22:00
	13.0	2.8	13.6	1.5
Sun., July 30.....	4:14	10:17	16:18	22:34
	13.5	2.2	14.0	1.0
Mon., July 31.....	4:48	10:52	16:53	23:07
	14.0	1.7	14.3	0.8

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean selevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

Rainfall from June 1 to 17, Inclusive.

STATIONS.	Maximum in one-day.	Date.	Total for period.
<i>Pacific Section—</i>			
Balboa.....	<i>Ins.</i>	8	<i>Ins.</i>
Balboa Heights.....	.72	8	2.38
Miraflores.....	.69	10	2.74
Pedro Miguel.....	1.37	15	4.76
Rio Grande.....	2.08	15	5.48
<i>Central Section—</i>			
*Culebra.....	1.50	8	4.81
*Camacho.....	.95	16	4.56
Empire.....	1.02	8	4.41
Gambou.....	.91	13	4.99
*Juan Mina.....	.92	14	5.60
Alhajuela.....	2.46	7 & 13	11.03
*Vigia.....	2.81	8	8.99
Frijoles.....	1.80	8	6.57
*Monte Lirio.....	3.60	8	8.84
<i>Atlantic Section—</i>			
Gatun.....	2.33	8	6.16
*Brazos Brook.....	2.16	8	8.70
Coloa.....	2.57	14	5.80

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

Maximum Stages of the Chagres River, Gatun Lake and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the fortnight ending at midnight, Saturday, June 17, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gambou	Gatun Lake	Miraflores Lake.
Sun., June 4.....	120.55	94.98	86.50	86.46	54.00
Mon., June 5.....	129.45	95.86	87.86	86.40	54.00
Tues., June 6.....	127.70	93.00	85.86	85.54	50.00
Wed., June 7.....	126.50	93.42	85.86	85.47	54.00
Thurs., June 8.....	133.20	97.80	86.06	86.54	54.00
Fri., June 9.....	131.00	97.25	86.40	86.43	50.00
Sat., June 10.....	128.00	94.87	86.39	86.34	54.00
Sun., June 11.....	127.00	93.54	86.86	86.40	54.27
Mon., June 12.....	130.70	95.85	86.86	86.45	54.36
Tues., June 13.....	131.45	96.36	86.86	86.50	54.20
Wed., June 14.....	131.90	96.77	86.52	86.52	54.20
Thurs., June 15.....	128.95	94.90	86.40	86.41	54.26
Fri., June 16.....	129.25	94.80	86.51	86.49	54.35
Sat., June 17.....	128.10	93.88	86.51	86.50	54.20
Height of low water to nearest foot.....	125.0	91.0			

**Fuel.**  
Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., June 18, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	Cargo		Canal Tonnage	
						Nature	Tons	Gross	Net
June 12....	Artison.....	American....	American-Hawaiian Line.....	Newport News.....	Arica, Chile.....	Coal.....	8,535	6,173	4,329
June 12....	Isthmian.....	American....	American-Hawaiian Line.....	Trinidad.....	Toconilla.....	Ballast.....	.....	5,677	3,975
June 12....	Monari.....	British.....	Pacific Steam Navigation Co.....	Cristobal.....	Guayaquil.....	Ballast.....	.....	1,205	745
June 12....	Vine Branch.....	British.....	Nautilus Steam Navigation Co.....	London.....	General.....	.....	4,509	3,477	2,505
June 13....	Huallaga.....	Peruvian.....	Peruvia Steamship Line.....	Cristobal.....	Cairo.....	General.....	1,436	4,538	2,430
June 14....	Frankly.....	British.....	Palace Shipping Company.....	Norfolk.....	Mexijones.....	Coal.....	6,264	5,173	3,812
June 14....	Celia.....	British.....	New York & Pacific S. S. Co.....	New York.....	Arica, Chile.....	General.....	6,800	5,852	4,377
June 16....	Strathorn.....	British.....	Strathorn Steamship Co.....	Newport News.....	Pisagua.....	Ballast.....	.....	4,648	3,439
June 16....	Arna.....	Norwegian.....	Akties Arna.....	Norfolk.....	San Diego.....	Coal.....	8,284	6,253	4,693
June 17....	Jamaica.....	British.....	Pacific Steam Navigation Co.....	Cristobal.....	Buenaventura.....	General.....	527	1,170	620
June 17....	Edgar F. Luckenbach.....	American.....	Luckenbach Line.....	New York.....	Auckland.....	Case oil.....	10,435	8,134	6,262
June 17....	California.....	American.....	J. A. Hooper.....	Norfolk.....	Iquique.....	Ballast.....	.....	8,073	6,065
June 18....	City of Colombo.....	British.....	Norton Lilly & Company.....	New Zealand.....	General.....	.....	9,000	6,741	4,971
June 18....	Tuscan Prince.....	British.....	Prince Line, Ltd.....	New York.....	Vladivostok.....	General.....	7,000	6,741	5,024
June 18....	City of Para.....	American.....	Pacific Mail S. S. Company.....	Cristobal.....	San Francisco.....	General.....	.....	3,739	2,456

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

June 11....	City of Para.....	American.....	Pacific Mail S. S. Company.....	San Francisco.....	Colon.....	General.....	1,919	3,739	2,459
June 13....	Guatemala.....	British.....	Pacific Steam Navigation Co.....	Tehuacan.....	Colon.....	General.....	2,057	4,249	2,772
June 13....	Jamaica.....	British.....	Pacific Steam Navigation Co.....	Tehuacan.....	Colon.....	General.....	527	1,170	620
June 14....	Balboa.....	American.....	American Mexican Trading Co.....	Buenaventura.....	Colon.....	General.....	445	705	315
June 15....	Huasco.....	Chilean.....	South American S. S. Co.....	Tahuacan.....	Colon.....	General.....	2,499	4,563	3,121
June 16....	Paraiso.....	American.....	Long Beach S. S. Co.....	Batavia.....	Colon.....	General.....	163	1,401	933
June 16....	King Malcolm.....	British.....	Scottish S. S. Co.....	Portland.....	Norfolk.....	Wheat.....	6,595	4,814	3,642
June 17....	Elm Branch.....	British.....	Nautilus Steam Navigation Co.....	Guayaquil.....	London.....	General.....	4,741	3,499	2,530
June 17....	Newport.....	American.....	Pacific Mail S. S. Company.....	San Francisco.....	Colon.....	General.....	895	3,173	2,163
June 17....	Arborea.....	American.....	American-Hawaiian Line.....	Manila.....	Norfolk.....	Salt peter.....	9,033	6,146	4,329

## EXPECTED ARRIVALS FROM PACIFIC.

June 18....	Terrier.....	W. Wilhelmsens.....	Taltal.....	June 20....	Mithila.....	Anties Mithila.....	Chilean ports.
June 19....	Kintuck.....	China Mutual Steam Nav.....	So. Pacific ports.	June 20....	Leovidas.....	Ellerle S. S. Co.....	Chilean ports.
June 19....	Geon Maru.....	Hashimoto Kisen Kaisha.....	Chilean ports.	June 26....	Cipriani.....	Nelson, Donkin & Co.....	Chilean ports.
June 19....	Lord Derby.....	Ocidental & Orient Stea. N.....	Chilean ports.	June 31....	Haidra.....	Port Steamship Co.....	Chilean ports.
June 20....	Florentino.....	Polzeath Steamship Co.....	Chilean ports.	June 31....	Kidibia.....	Clyde Shipping Co.....	Chilean ports.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
June 13....	Magician.....	Harrison Line.....	Liverpool.
June 13....	Leonidas.....	United States Government.....	Coast ports.
June 17....	Coronado.....	Elders & Fyfe.....	Port Limon.

## \*DEPARTURES.

Date	Vessel	Line	For
June 13....	Manuel Cabo.....	Spanish Line.....	Barcelona.
June 14....	Leonidas.....	United States Government.....	New York.
June 15....	Siskiyew.....	E. K. Wool Lumber Co.....	Belize.
June 17....	Flanire.....	French Line.....	Bordeaux.
June 17....	Magician.....	Harrison Line.....	New Orleans.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS

June 12....	Burlington.....	Alaska Steamship Co.....	Antofagasta.
June 14....	Los Angeles.....	Union Oil Company.....	San Francisco.
June 15....	Yamato Maru.....	Gosha Kaisha K. S.....	Iquique.
June 15....	Baja California.....	A. O. Lindvig.....	Los Angeles.
June 17....	General Hubbard.....	Hubbard Steamship Co.....	Tacoma.
June 17....	Acajula.....	Pacific Steam Nav. Co.....	Salina Cruz.

## DEPARTURES.

June 12....	Burlington.....	Alaska Steamship Co.....	San Francisco.
June 16....	Los Angeles.....	Union Oil Company.....	Port San Luis.
June 16....	Yamato Maru.....	Gosha Kaisha K. S.....	Vladivostok.
June 16....	Baja California.....	A. O. Lindvig.....	Talara.
June 18....	General Hubbard.....	Hubbard Steamship Co.....	San Francisco.
June 17....	Acajula.....	Pacific Steam Nav. Co.....	Taboga.

\*Other than ships passing through the Canal.

in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$2; at Balboa, the price is \$1 more per ton, either form of delivery.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.65 at Cristobal and \$1.40 at Balboa. Prices from the corporations may be obtained on application to them.

## Sailings of Vessels in Regular Service with the United States.

Vessel.	Line.	Sails.	Arrives.
Panama.....	P. R. R.	June 15.....	June 22
Pastores.....	U. F. C.	June 17.....	June 25
Cristobal.....	P. R. R.	June 18.....	June 25
Zarapa.....	U. F. C.	June 21.....	June 28
Allencas.....	P. R. R.	June 22.....	June 29
Calamagres.....	U. F. C.	June 24.....	July 2
Carrillo.....	U. F. C.	June 28.....	July 5
Advance.....	P. R. R.	June 29.....	July 6

Tenadores.....	U. F. C.	July 1.....	July 9
Santa Marta.....	U. F. C.	July 5.....	July 12
Cristobal.....	P. R. R.	July 6.....	July 13
Metapan.....	U. F. C.	July 8.....	July 17
Almirante.....	U. F. C.	July 12.....	July 19
Colon.....	P. R. R.	July 13.....	July 19

## CRISTOBAL-COLON TO NEW YORK.

Santa Marta.....	U. F. C.	June 22.....	June 29
Metapan.....	U. F. C.	June 26.....	July 4
Panama.....	P. R. R.	June 29.....	July 5
Almirante.....	U. F. C.	June 29.....	July 6
Pastores.....	U. F. C.	July 3.....	July 10
Allencas.....	P. R. R.	July 6.....	July 12
Zarapa.....	U. F. C.	July 6.....	July 13
Calamagres.....	U. F. C.	July 10.....	July 17
Cristobal.....	P. R. R.	July 10.....	July 17
Carrillo.....	U. F. C.	July 13.....	July 20
Tenadores.....	U. F. C.	July 17.....	July 24
Advance.....	P. R. R.	July 20.....	July 27
Santa Marta.....	U. F. C.	July 20.....	July 27

## NEW ORLEANS TO CRISTOBAL-COLON.

Atenas.....	U. F. C.	June 17.....	June 24
Carriago.....	U. F. C.	June 21.....	June 26
Abanagres.....	U. F. C.	June 24.....	July 1
Heredia.....	U. F. C.	June 28.....	July 3
Turrialba.....	U. F. C.	July 1.....	July 8
Parismina.....	U. F. C.	July 5.....	July 10
Atenas.....	U. F. C.	July 8.....	July 15
Carriago.....	U. F. C.	July 12.....	July 17

## CRISTOBAL-COLON TO NEW ORLEANS.

Parismina.....	U. F. C.	June 25.....	July 30
Atenas.....	U. F. C.	June 25.....	July 3
Carriago.....	U. F. C.	July 2.....	July 7
Abanagres.....	U. F. C.	July 11.....	July 14
Heredia.....	U. F. C.	July 9.....	July 1
Turrialba.....	U. F. C.	July 9.....	July 17
Parismina.....	U. F. C.	July 16.....	July 21
Atenas.....	U. F. C.	July 16.....	July 24
Carriago.....	U. F. C.	July 23.....	July 28
Abanagres.....	U. F. C.	July 23.....	July 31



# CANAL



# RECORD

Volume IX.

BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, JUNE 28, 1916.

No. 45.

## The Canal Record

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Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### First Use of New Large Dry Dock at Balboa.

The first use of the new 1,000-foot dry dock at Balboa was made with the docking of the ladder dredge *Corozal* on Tuesday, June 27. The vessel was brought at high tide through the gap in the earth cofferdam which had protected the dry dock and its approach basin during construction, and moored in the dock in the afternoon of that day; but the pumping out of the dry dock did not begin until the morning of June 28.

The docking of the *Corozal* is an emergency measure, as the dredge has been leaking at several points in the hull and is in need of some renewed plates and new rivets. The time for its docking happened to coincide with the readiness of the dry dock pumping plant for the preliminary or tryout tests, so that it was possible to send the dredge to the dry dock instead of docking her in a lock chamber, as was done before.

The *Corozal* can not be docked in the old dry dock at Mount Hope. She was taken to that dock on March 3, 1914, from the Cut, but it was found that the draft of the vessel, with the ladder in extreme raised position, was slightly too great to permit her passing over the sill. On March 17 the dredge was taken to Gatun Locks and dry docked in the upper east chamber, where she remained until April 11, returning to the Cut after the completion of the repairs. The new dry dock at Balboa will be able to accommodate any ship now afloat, when the removal of the cofferdam

across the entrance shall have been completed.

Special cradles and keel blocks, adapted to the divided hull of the *Corozal*, were placed on the floor of the dry dock to receive her. The installation of the regular keel blocks, delayed by late arrival of material, is about 50 per cent completed.

### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, June 26, amounted to 217,840 cubic yards and 13,108 cubic yards of maintenance. The dredges also rehandled 30,114 cubic yards in disposing of spoil, but these figures are not included in the totals, which are for primary excavation and represent decrease of material in the Canal prism.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Casualas	15-yard dipper	53,551
Gambou	15-yard dipper	63,445
Paraíso	15-yard dipper	6,540
Corozal	Ladder	32,921
No. 83	Pipeline suction	4,243
No. 84	Pipeline suction	2,100
No. 86	Pipeline suction	30,114
Culebra	Seagoing suction	13,103

The aggregate of primary excavation from the bases of the Culebra slides since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the hour of midnight on June 26, 1916, has amounted to 15,210,476 cubic yards. This has been an average of 745,582 cubic yards per month.

In the current fiscal year, beginning with July 1, 1915, and now almost completed, the total primary excavation from the Cut has amounted to 11,100,218 cubic yards up to midnight of June 26. This has been an average of 30,663.6 cubic yards per day.

### Tug "Engineer" Being Overhauled at Paraíso.

The tug *Engineer*, which has been employed by the Marine Division in general work about the harbor of Cristobal and the Atlantic entrance to the Canal, was transferred on Monday, June 26, to Paraíso for a general overhauling. The steering quadrant is to be placed above deck, and doorways will be cut in some of the partitions, and at the same time the boilers will be washed down and placed in good order. The *Bohío* has been transferred to the Atlantic entrance to take the place of the *Engineer*.

### Charges for Rent, Fuel, and Electric Current.

Effective July 1, 1916, the President's Executive Order of January 15, 1915, relative to charges for rent, fuel, and electric current furnished employees of The Panama Canal and the Panama Railroad on the Isthmus, will again become operative.

A schedule of the rentals to be charged for the various quarters occupied by employees will be published in The CANAL RECORD of July 5, 1916, and the occupation of quarters

will be subject to the regulations contained in the Governor's circular No. 627-14, dated June 15, 1916, published in this issue.

Coal will be sold by the commissaries at 30 cents per 100 pounds, delivered to quarters in sacks, to be paid for by coupons, the same as other commodities sold by the commissaries, and kindling wood will be sold in the same manner at 10 cents per sack.

### New Pattern Storage Building at Balboa.

Owing to the large number of patterns which have been shipped to the Isthmus, the storage of which was not contemplated at the time the present pattern storage building (No. 11) at Balboa shops was designed, it has been found necessary to build a supplementary storage building, and plans are being made for a building 50 feet wide by 100 feet long, with concrete floor and galvanized iron roof.

A committee, consisting of the Acting Chief Health Officer, the Resident Engineer of the Building Division, the Acting Chief Quartermaster, and the Municipal Engineer, was appointed by the Governor to choose a site for this building and recommendation was made and approved that the building be located between buildings Nos. 37 and 24.

### Affrays during Election in Panama.

One child, a boy of 11 years, was killed and 19 persons were wounded, two seriously, in riots occurring in the city of Panama in the course of the election held on Sunday, June 25. The assembling of the Canal Zone police and the provost guard and one troop of cavalry of the United States forces on the boundary line directly after the principal affray prevented further disorder.

The principal affray occurred at about 3.30 p. m. Adherents of the party in opposition to the government party had assembled to the number of approximately 500 on the outskirts of the Calidonia district. Fifty-four Panamanian policemen were on guard to prevent the crowd from starting toward the city. At about three o'clock the police were withdrawn to the foot of the Calidonia bridge, and shortly afterward the crowd moved toward the city. As they drew near the bridge shots were fired in the air, and directly afterward the police and the crowd were firing on one another. The Secretary of Government and Justice, assisted by representatives of the Canal Zone police, induced the police of Panama to cease firing. Following the restoration of order the forces of the United States were held on the boundary until six o'clock; but at no time after their appearance was there need of intervention.

Three policemen were injured at Taboga. Reliable reports as to conditions in the interior provinces are not available. With the exception of a few minor fights, in which no one was injured seriously, the balloting in Colon passed off quietly.

## CANAL TRAFFIC IN MAY.

## Commodities Shipped through the Panama Canal in May, 1916.

Rate of Movement not Equal to That Directly Prior to Closing of Canal.

The number of oceangoing ships making the transit of the Canal in May was 129. Tugs and dredging equipment in the service of the Canal are not included in the totals. Five of the vessels making the transit were in the military service of the United States, and 124 ships were in regular commercial service.

Traffic from the Atlantic to the Pacific included 69 vessels (three in the Government military service), with an aggregate net tonnage, according to the rules for the measurement of vessels for the Panama Canal, of 215,473 tons. Their aggregate net tonnage according to the rules for measurement for registry in the United States was 170,401. The three military ships had an aggregate net tonnage of 5,189 tons, according to Panama Canal measurement. These included 20 colliers, carrying a total of 11,025 tons of coal. The aggregate cargo carried through the Canal from Atlantic to Pacific by all ships in May was 248,289 tons.

Traffic from the Pacific to the Atlantic included 60 vessels (three in military service of the Government), with an aggregate net tonnage of 179,070, according to Panama Canal measurement. The total net tonnage on the basis of measurement for United States registry was 143,188 tons. The three military ships, carrying no cargo, had aggregate net tonnage of 4,292. The total cargo moved through the Canal from Pacific to Atlantic during the month was 251,184 tons.

The totals for the movements were 129 ships, with Panama Canal and United States net tonnage of 251,184 and 213,589 tons, respectively, carrying 499,473 tons of cargo.

The nature and distribution of the cargo carried through the Canal in May are shown in the tabulation on the adjoining pages. The declarations furnished by the masters of vessels listed 141 different commodities. Of these, 12 were carried through the Canal in both directions.

Tolls collected on vessels entering from the Atlantic amounted to \$197,000.83, and from ships from the Pacific, to \$171,022.96, a total of \$368,023.79. Comparison with the earnings in the other months since the opening of the Canal to commercial traffic on August 15, 1914, is made herewith:

Month.	Tolls earned.
August 15-31, 1914.....	\$88,401.80
September.....	265,600.80
October.....	366,786.48
November.....	369,161.28
December.....	407,914.80
January, 1915.....	398,601.12
February.....	383,904.96
March.....	551,092.56
April.....	442,415.49
May.....	522,676.95
June.....	539,229.05
July.....	573,365.67
August.....	496,792.03
September.....	319,498.30
October.....	.....
November.....	.....
December.....	10,826.00
January, 1916.....	654.39
February.....	834.00
March.....	418.80
April.....	235,618.44
May.....	368,023.79

Total.....\$6,371,816.71

According to nationality, the traffic from the Atlantic to the Pacific was made up of 36 British ships; 13 American, five Norwegian, five Peruvian, four Chilean, four Japanese, one Dutch, and one Russian vessel. The traffic

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Acids.....	30	30	30	New York to Manila.
Antimony.....	110	110	110	Antofagasta to New York and Bordeaux.
Antimony ore.....	305	305	305	Antofagasta to Colon, 133 tons; Arica to Colon, 172 tons.
Asphalt.....	300	300	300	Liverpool to San Francisco.
Automobiles.....	256	256	256	New York to Batavia, 200; New York to Arica, 56 tons.
Balsam.....	3	3	3	Acapulco to Colon.
Bamboo.....	1,200	1,200	1,200	China and Japan to New York and Boston.
Barilla.....	151	151	151	Antofagasta to Fave and New York, 102 tons; Chile to Colon, 49 tons.
Bark.....	24	24	24	Chile to Cristobal.
Barley.....	3,573	3,573	3,573	San Francisco to Liverpool, 173 tons; Talcahuano to Great Britain, 3,400 tons.
Beans.....	17	17	17	Talcahuano to New York.
Beans, Lima.....	1	1	1	Paiza to Colon.
Beef.....	1,366	1,366	1,366	New Zealand to London.
Beef.....	44	44	44	Liverpool to San Francisco, 38 tons; Cristobal to Guayaquil, 6 tons.
Benzine.....	91	91	91	New York to Arica.
Bicarbonate of soda.....	20	20	20	Liverpool to San Francisco.
Borate.....	209	349	349	Antofagasta to Havre.
Borax.....	209	209	209	New York to Yokohama.
Brass.....	3	3	3	Cochimbo to New York.
Bricks.....	503	503	503	Glasgow to Tacoma.
Briquette.....	4,448	4,448	4,448	Birdie to Mollendo.
Butter.....	99	99	99	New Zealand to Liverpool.
Cacao.....	44	2,901	2,945	Guayaquil to Christiana, 49 tons; Tumaco to Colon, 40 tons; Guayaquil to Colon, 1,342 tons; Balboa to Colon, 450 tons; Valparaiso to Colon, 1,000 tons; Ecuador to Colon, 20 tons; Liverpool to San Francisco, 44 tons.
Canales.....	90	90	90	Cristobal to Guayaquil.
Canned goods.....	50	50	50	Sydney to Liverpool.
Fish.....	5,099	5,099	5,099	San Francisco to Liverpool, 5,074 tons; San Francisco to Colon, 25 tons.
Fruit.....	2,570	2,570	2,570	San Francisco to Liverpool.
Meat.....	4,135	4,135	4,135	New York to Batavia, 5 tons; Liverpool to Chile, 40 tons; New Zealand to Liverpool, 3,510 tons; New Zealand to London, 625 tons.
Carbid.....	483	483	483	New York to Batavia, 90 tons; New York to Arica, 10 tons.
Cart wheels.....	5	5	5	Cristobal to Guayaquil.
Casings.....	9	9	9	Valparaiso to New York.
Cascara.....	3	3	3	San Francisco to Liverpool.
Cement.....	1,703	1,703	1,703	New York to Batavia, 100 tons; New York to Chile, 313 tons; London to Peruvian ports, 1,200 tons; Cristobal to Guayaquil, 90 tons.
Chemicals.....	116	9	125	New York to Arica, 16 tons; New York to Chile, 100 tons; Tocopilla to Colon (orders), 8 tons; Peru to Colon, 1 ton.
Chrome.....	0.055	0.055	0.055	Newcastle to Glasgow.
Coal.....	51,000	5	51,000	Norfolk to San Diego, 7,025 tons; Swansea to Mollendo, 3,124 tons; Earlard to Taltal, 4,606 tons; Norfolk to San Francisco, 4,000 tons; Cardiff to Mejillones, 4,995 tons; Norfolk to Mejillones, 8,435 tons; Sewalls Point to Iquique, 6,834 tons; Newport News to Mejillones, 2,653 tons; Cardiff to Esquimalt, 4,275 tons; Norfolk to Taltal, 4,655 tons; Liverpool to Peruvian ports, 400 tons; Newcastle to Glasgow, 5 tons.
Coffee.....	6,674	6,674	6,674	Central American ports to Christiana, 4,417 tons; Buenaventura to Colon, 97 tons; Corinto to Colon, 314 tons; Guayaquil to Colon, 16 tons; Central American ports to Colon, 530 tons; Callao to Colon, 1,000 tons; Ecuador to Colon, 300 tons.
Coke.....	11,570	11,570	11,570	Norfolk to Chile, 2,068 tons; Baltimore to Callao, 2,369 tons; Norfolk to Caldero, 2,849 tons; Baltimore to Valparaiso, 4,284 tons.
Copper.....	1	6,814	6,815	New York to Batavia, 1 ton; Valparaiso to New York, 397 tons; Chile to Colon, 1,784 tons; Valparaiso to Colon, 1,077 tons; Callao to Colon, 1,578 tons; Sydney to Liverpool, 500 tons; Valparaiso to Cristobal, 1,108 tons; Talcahuano to Colon, 305 tons; Lota to Colon, 65 tons.
Copper ore.....	1,810	1,810	1,810	Valparaiso to New York, 239 tons; Iquique to Colon, 15 tons; Antofagasta to Colon, 774 tons; Salaverry to Colon, 104 tons; South America to Colon, 148 tons; T. Lahuno to Colon, 130 tons; Lota to Colon, 400 tons.
Copper matte.....	308	308	308	Cochimbo to New York.
Copper regulus.....	115	115	115	Antofagasta to Colon.
Copra.....	238	238	238	Sydney to Liverpool, 200 tons; New Zealand to London, 38 tons.
Cotton.....	2,307	1,848	4,155	New York to Batavia, 100 tons; New York to Vladivostok, 1,402 tons; New York to Chile, 800 tons; Cristobal to Guayaquil, 5 tons; Paiza to New York, 90 tons; Salaverry to Colon, 52 tons; Sydney to Liverpool, 50 tons; Los Angeles to Liverpool, 300 tons; Paiza to Colon, 59 tons; Valparaiso to Colon, 25 tons; Callao to Colon, 1,044 tons; Talcahuano to Colon, 95 tons; Peru to Colon, 100 tons; Lota to Colon 33 tons.
Cyanide.....	7	7	7	Cristobal to Guayaquil.
Dyes.....	497	497	497	Mazatlan to Colon.
Earthenware.....	1,500	1,500	1,500	Liverpool to Los Angeles and San Francisco.
Electrical supplies.....	67	67	67	Baltimore to Valparaiso.
Explosives.....	328	328	328	New York to Manila, 225 tons; New York to Vladivostok, 103 tons.
Flour.....	2,962	2,962	2,962	Vallejo to Bordeaux.
Fru t, dried.....	626	626	626	San Francisco to Christiana.
Fruit, fresh.....	1	1	1	Lota to Colon.
Fuelers earth.....	100	100	100	London to San Francisco.
Gas tubes.....	3	3	3	Ecuador to Colon.
Gasoline.....	1,225	1,225	1,225	Port Arthur to Manila, 596 tons; New York to Arica, 229 tons; New York to Auckland, 400 tons.

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
General cargo.....	70,368	10,426	80,794	Cristobal to Callao, 3,911 tons; Cristobal to Guayaquil, 1,144 tons; New York to Manila, 5,800 tons; New York to Shanghai, 4,216 tons; New York to Vladivostok, 7,720 tons; Cristobal to Buenaventura, 56 tons; Cristobal to Valparaiso, 3,754 tons; New York to Vladivostok, 12,800 tons; St. Johns to New Zealand, 8,905 tons; Cristobal to Buenaventura, 400 tons; Cristobal to Peruvian ports, 1,100 tons; New York to Arica, 2,226 tons; Newport News to Antofagasta, 6,000 tons; New York to Auckland, 900 tons; Cristobal to Salina Cruz, 838 tons; New York to Mollendo, 4,000 tons; New York to China, 630 tons; Baltimore to Valparaiso, 890 tons; Cristobal to west coast ports, 538 tons; Cristobal to Punta Arenas, 864 tons; Liverpool to Los Angeles, 190 tons; Cristobal to Valparaiso, 2,717 tons; Valparaiso to New York, 37 tons; Callao to Colon, 3,423 tons; Salina Cruz to Colon, 2 tons; Sydney to Liverpool, 10 tons; San Francisco to Liverpool, 35 tons; Buenaventura to Colon, 6,161 tons; Valparaiso to Colon, 76 tons; New Zealand to London, 11 tons; Talcahuano to Colon, 669 tons; Peru to Colon, 2 tons.
Glue.....		10	10	Valparaiso to New York.
Glycerine.....		8	8	Mexico to Colon.
Gold.....		7	7	Salaverry to Colon, 6 tons; South America to Colon, 1 ton.
Grease.....	55		55	Port Arthur to Manila.
Gums and copal.....		19	19	New Zealand to Liverpool.
Hardware.....	305		305	New York to Batavia, 300 tons; Cristobal to Guayaquil, 5 tons.
Hats.....		6	6	Ecuador to Colon, 3 tons; Talcahuano to Colon, 1 ton; Peru to Colon, 1 ton; Lota to Colon, 1 ton.
Hay.....		25	25	Chile to Cristobal, 5 tons; Lota to Cristobal, 20 tons.
Hemp.....		490	490	New Zealand to London.
Honey.....		207	207	Valparaiso to Colon, 33 tons; San Francisco to Liverpool, 173 tons; New Zealand to London, 1 ton.
Hops.....		78	78	San Francisco to Liverpool, 50 tons; New Zealand to London, 28 tons.
Iodine.....		135	135	Valparaiso to New York, 13 tons; Chile to Colon, 43 tons; Antofagasta to New York, 10 tons; Talcahuano to Colon, 45 tons; Iquique to Colon, 19 tons; Lota to Colon, 5 tons.
Iron.....		4,150	4,150	Cruz Grande to Philadelphia.
Ivory nuts.....		1,441	1,441	Tumaco to Colon, 140 tons; Guayaquil to Colon, 704 tons; South America to Colon, 12 tons; Ecuador to Colon, 535 tons.
Jute.....	75		75	Cristobal to Guayaquil.
Kapok.....		18	18	San Francisco to New York.
Lead.....	370		389	New York to Batavia, 370 tons; Valparaiso to New York, 4 tons; Salaverry to Colon, 9 tons; Lota to Colon, 6 tons.
Leather.....		96	96	Guayaquil to Colon, 91 tons; Ecuador to Colon, 5 tons.
Liquors.....	116		116	New York to Batavia, 35 tons; New York to Arica, 20 tons; London to Chile, 30 tons; London to San Francisco, 31 tons.
Lumber.....		384	384	Puget Sound to Liverpool, 255 tons; Corinto to Colon, 130 tons.
Malt.....	28		28	Cristobal to Guayaquil.
Manganese.....		97	97	Central America to Colon.
Manufactured goods:				
Iron and steel.....	15,292		15,292	New York to Batavia, 3,000 tons; New York to Yokohama, 530 tons; New York to Vladivostok, 3,797 tons; New York to Chile, 1,130 tons; New York to Australia, 5,000 tons; Baltimore to Valparaiso, 467 tons; New York to Valparaiso, 46 tons; New York to Singapore, 1,200 tons; Liverpool to Chile, 150 tons; Liverpool to Vancouver, 18 tons.
Machinery.....	7,259		7,259	New York to Batavia, 200 tons; New York to Kobe, 13 tons; New York to Vladivostok, 2,894 tons; New York to Chile, 1,115 tons; New York to New Zealand, 3,000 tons; Liverpool to Valparaiso, 37 tons.
Railroad material.....	6,852		6,852	New York to Batavia, 30 tons; New York to Kobe, 500 tons; New York to Vladivostok, 5,120 tons; New York to Arica, 65 tons; Baltimore to Valparaiso, 337 tons; New York to Singapore, 800 tons.
Miscellaneous.....		15	15	Southern America to Colon.
Textiles.....	5,799		5,799	New York to Vladivostok, 4,111 tons; Liverpool to Chile, 1,050 tons, 638 tons; New York to Seattle to Liverpool.
Milk, condensed.....		140	140	Arica to New York, 27 tons; Chile to Cristobal, 240 tons.
Minerals.....		267	267	New Zealand to London.
Mutton.....		1,415	1,415	Cristobal to Guayaquil.
Nails, wire.....	70		70	Talara to Vallo, 2,664 tons; New York to Arica, 176 tons.
Naptha.....	176		2,840	Chile to Baltimore, 11,500 tons; Antofagasta to Delaware, 8,750 tons; Iquique to Norfolk, 5,800 tons; Iquique to Norfolk, 6,923 tons; Tocapilla to New York, 8,653 tons; Mejillones to Merisilles, 6,878 tons; Mejillones to New York News, 6,783 tons; Calita Colosa to Baltimore, 8,490 tons; Mejillones to Norfolk, 5,900 tons; Talcahuano to Port Vendres, 6,000 tons; Iquique to Norfolk, 10,800 tons; Tocapilla to France, 5,463 tons; Iquique to Philadelphia, 3,611 tons; Mejillones to New Orleans, 6,800 tons; Talcahuano to Norfolk, 8,150 tons; Tocapilla to New York, 8,160 tons; Antofagasta to Russia, 6,200 tons; Tocapilla to Bordeaux, 6,621 tons; Calita Colosa to Norfolk, 3,015 tons; Talcahuano to France, 6,550 tons; Mejillones to Great Britain, 7,303 tons.
Nitrates.....		150,350	150,350	

(Continued on page 384.)

from the Pacific to the Atlantic was made up of 29 British, 14 American, five Chilean, five Peruvian, four Norwegian, one Dutch, one Japanese, and one Swedish vessel. Of the 129 ships making up the total traffic, 65 were British, 27 American, 10 Peruvian, nine Chilean and nine Norwegian, five Japanese, two Dutch, one Russian, and one Swedish.

The aggregate net tonnages of the ships of the several nationalities passing through the Canal, as determined by the rules for measurement for the Panama Canal, were as follows:

Nationality	No. of ships	Canal net tonnage	No. of ships	Canal net tonnage	No. of ships	Canal net tonnage
British.....	36	116,305	29	87,954	65	204,259
American.....	13	37,038	14	41,906	27	78,944
Norwegian.....	5	20,703	4	14,782	9	35,485
Peruvian.....	5	12,738	5	12,643	10	25,371
Chilean.....	4	11,997	5	13,518	9	24,615
Japanese.....	4	11,156	1	2,302	5	13,458
Dutch.....	1	4,961	1	1,974	2	6,935
Russian.....	1	1,475	.....	.....	1	1,475
Swedish.....	.....	.....	1	4,001	1	4,001
Total.....	69	215,473	60	179,070	129	394,543

Supplement No. 2 to Circular No. 500-B, Covering Charges for Stevedoring and Transferring Cargo, Etc., issued January 29, 1916, Effective March 1, 1916.

1. Paragraphs 4 and 5 of Item 4, wherein a rate of 10 cents per bill-of-lading ton is provided for, are hereby amended to read, 5 cents per bill-of-lading ton.

2. This is effective July 1, 1916.

S. W. HEAD,  
Acting Superintendent.

Approved:

CHESTER HARDING,  
Second Vice President.

Paragraphs 4 and 5 of Item 4, referred to above, were originally as follows:

4. On all cargo refused by the second connecting steamer, storage will be charged per bill-of-lading ton, per day at the rate of 10 cents instead of three (3) cents (the minimum charge being for not less than one ton), from and including the day of departure of the second connecting steamer up to the time delivery is accepted by the final carrier.

5. On all cargo refused by the first connecting steamer because of space being occupied by or reserved for other cargo, or for any reason other than that above indicated, storage will be charged per bill-of-lading ton, per day at the rate of 10 cents from and including the day of departure of the first connecting steamer, up to the time delivery is accepted by the final carrier.

The reference in paragraph 4 "instead of three (3) cents" is to a provision in the preceding paragraph, as follows:

3. On all cargo refused by the first connecting steamer because its entire capacity is filled with cargo that has been loaded at the Panama Railroad Company's wharves, storage will be charged per bill-of-lading ton per day at the rate of three cents from and including the day of departure of such first connecting steamer up to the time that delivery is accepted by the second connecting steamer of such final carrier.

Following the announcement of the intended closing of the Hotel Aspinwall on Taboga Island, numbers of Canal employees and their families made visits to the island over the week-ends of the last two weeks. On Sunday, June 25, the hotel had 112 patrons. The hotel will be closed with the end of business on Friday, June 30, to reopen on February 1, 1917.



(Continued from page 383.)

Commodity.	Atlantic to Pacific	Pacific to Atlantic.	Total.	Remarks.
Nuts.....		21	21	Mexico to Colon.
Oil, crude.....	15,479	3,775	19,254	Tampico to Pisagua, 6,800 tons; New York to Kobe, 460 tons; New York to Arica, 349 tons; Tuxpan to Pisagua, 7,830 tons; Talara to Yall, 3,775 tons.
Oil, lubricating.....	1,505		1,505	New York to Batavia, 800 tons; Port Arthur to Manila, 5 tons; New York to China, 200 tons; New York to China, 500 tons.
Oils, mineral.....	55		55	London to China.
Oils, vegetable.....	1,118	437	1,555	Port Arthur to Manila, 770 tons; New York to Auckland, 150 tons; London to San Francisco, 78 tons; Cristobal to Guayaquil, 15 tons; New York to Arica, 105 tons; California to London, 437 tons.
Ores, miscellaneous.....		40	40	Lota to Colon.
Paper.....	4		4	Cristobal to Guayaquil.
Peas.....		92	92	Cornel to Chile, 49 tons; New Zealand to London, 43 tons.
Pencil slats.....		45	45	San Francisco to Liverpool.
Petroleum.....	40,592	8,150	48,742	New York to China, 5,430 tons; New Orleans to Sydney, 6,260 tons; New Orleans to Shanghai, 6,829 tons; New York to Batavia, 1,500 tons; New York to Shanghai, 12,225 tons; Port Arthur to Manila, 1,965 tons; New York to Arica, 1,780 tons; New York to Australian ports, 2,000 tons; New York to Singapore, 740 tons; New York to Chile, 1,812 tons; San Francisco to London, 8,150 tons.
Quicksilver.....	3		3	Valparaiso to Colon.
Quillay bark.....		58	58	Valparaiso to New York.
Raisins.....	200		200	New York to Batavia.
Ratania.....		17	17	Arica to Liverpool, 2 tons; Valparaiso to Colon, 13 tons; Chile to Colon, 2 tons.
Rice.....		40	40	San Francisco to Colon.
Rosin.....	325		325	New York to Kobe, 75 tons; New York to Vladivostok, 250 tons.
Rubber.....	15	124	139	New York to Kobe, 15 tons; Arica to New York, 2 tons; Peru to Colon, 1 ton; Tamaco to Colon, 29 tons; Mollendo to Colon, 2 tons; Guayaquil to Colon, 6 tons; Corinto to Colon, 6 tons; San Francisco to Colon, 13 tons; Talcahuano to Colon, 10 tons; Peru to Colon, 21 tons; Lota to Colon, 34 tons.
Salmon paste.....		70	70	San Francisco to Liverpool.
Salt.....	4		4	Cristobal to Guayaquil.
Srap, metal.....		39	39	Acjutilla to Colon, 1 ton; Chile to Colon, 7 tons; Lota to Colon, 31 tons.
Screens, Chinese.....		4	4	Kobe to New York.
Seed.....		21	21	Valparaiso to New York, 11 tons; New Zealand to London, 10 tons.
Sjedis.....		13	13	Central America to Colon.
Silver.....		8	8	Talait to Colon, 7 tons; Chile to Colon, 1 ton.
Silver ore.....		15	15	Inguque to Colon, 1 ton.
Silver sulphide.....		17	17	Antofagasta to New York, 2 tons; Arica to Colon, 7 tons; Chile to Colon, 8 tons.
Skins and hides.....		1,972	1,972	Valparaiso to Colon, 112 tons; Calle to Colon, 1,027 tons; Sedro to Liverpool, 50 tons; Sala, erry to Colon, 1 ton; Corinto to Colon, 75 tons; Guayaquil to Colon, 7 tons; South America to Colon, 62 tons; Ecuador to Colon, 59 tons; Talcahuano to Colon, 30 tons; Peru to Colon, 20 tons; Lota to Colon, 137 tons.
Soap.....	75		75	Liverpool to San Francisco, 70 tons; Cristobal to Guayaquil, 5 tons.
Straw, matting.....		2	2	Guayaquil to Colon.
Sugar.....	1	6,526	6,527	New York to Yokohama, 1 ton; Callao to Colon, 5,751 tons; Central America to Colon, 775 tons.
Sulphur.....	75		75	New York to Vladivostok.
Table relishes.....	126		126	London to San Francisco.
Tallow.....		885	885	Sydney to Liverpool, 80 tons; New Zealand to London, 805 tons.
Tartar.....		2	2	Chile to Cristobal.
Textiles, miscellaneous.....	8	1,214	1,214	London to San Francisco.
Tin.....		75	75	Wellington to London.
Tin ore.....		47	47	Mollendo to Colon, 15 tons; Lota to Colon, 60 tons.
Tin plate.....	800		800	Antofagasta to Cristobal.
Tobacco.....		419	419	New York to Batavia, 500 tons; New York to Vladivostok, 399 tons.
Trivet gear.....	400		400	Mazatlan to Colon.
Tow.....		15	15	New York to Chile.
Tungsten.....		37	37	New Zealand to London.
Twine.....	6		6	Callao to New York, 11 tons; Callao to Colon, 5 tons; Chimbote to Colon, 12 tons; Talcahuano to Colon, 3 tons; Lota to Colon, 4 tons.
Wax.....		17	17	Cristobal to Guayaquil.
Wheat.....		700	700	Valparaiso to New York, 3 tons; Valparaiso to Colon, 7 tons; Chile to Colon, 2 tons; Lota to Colon, 5 tons.
Wines.....	61	5	66	Sydney to Liverpool.
Wire fencing.....	4,184		4,184	New York to Shanghai, 3 tons; Liverpool to San Francisco, 54 tons; Lota to Colon, 3 tons.
Wood, hard.....		15	15	New York to Vladivostok.
Woolfram.....		129	129	Lota to Colon.
Wool.....		3,709	3,709	Arica to New York, 52 tons; Chile to New York, 28 tons; Arica to Colon, 13 tons; Talcahuano to Colon, 30 tons; Lota to Colon, 6 tons.
Zinc.....		26	26	Valparaiso to New York, 67 tons; Peru to Colon, 39 tons; Valparaiso to New York, 253 tons; Talcahuano to Colon, 43 tons; Callao to Colon, 42 tons; New Zealand to Liverpool, 690 tons; Callao to Colon, 22 tons; Valparaiso to Colon, 25 tons; New Zealand to London, 2,003 tons; Chile to Cristobal, 81 tons; Lota to Cristobal, 244 tons.
Totals.....	248,289	251,184	499,473	Valparaiso to Liverpool.

One hundred and forty-one commodities; 12 commodities going in both directions.

## In Readiness for the Fourth of July.

Preparations for the official celebration of the Fourth of July at Balboa are about completed. The fireworks have arrived from the United States, the order of the horse show, the athletic and aquatic contests, and the automobile and motorcycle parade has been arranged, the baseball teams have had the first game of the championship series, and the official programs are on the press. Arrangements are being made to accommodate ten thousand visitors.

The patriotic exercises proper will be held near the land end of Pier 18, beginning at 11 a. m. They will be begun with music by one of the military bands; followed by the reading of the Declaration of Independence, by Major Herbert A. White; the address of the day by Colonel Chester Harding; and closed with the singing of "The Star-spangled Banner" by the audience.

Free lunch will be furnished at noon on Pier 18. In addition, the subsistence branch of the Supply Department is arranging to serve a 30-cent meal at Balboa at noon and in the evening, a 30-cent lunch at the Ancon restaurant and a 40-cent *table-d'hote* dinner there in the evening.

An information bureau will be established at the Balboa Heights station of the Panama Railroad. The central headquarters of the committees will be in the magistrate's court room, on the Prado below the Administration Building.

## Luncheon for Officials on the Fourth of July.

Following the patriotic exercises to be held on Pier 18 at Balboa on the morning of the Fourth of July, a luncheon will be served at the Tivoli Hotel to the President of Panama and the cabinet, the diplomatic corps, Panama Canal and Army and Navy officials, and the members of the executive committee of the official celebration. Invitations are being issued by mail.

## Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below. Information concerning the same is posted at clubhouses and post-offices, as per the numbers of announcements indicated:

Field matron (female); \$600 to \$840 a year; examination about August 13, 1916; No. 857.

Calculating machine operator (male and female); \$900 to \$1,200 a year; examination about July 23, 1916; No. 829.

Accounting and statistical clerk (male); \$1,200 to \$1,620 a year; examination about August 13-14, 1916; No. 851.

## Accommodations for Horses in Chorrillo Stables.

Following the completion of a large addition to the stables operated by the Panama Railroad Company in the Chorrillo district of the city of Panama, the stables are now able to take care of privately owned saddle horses. The old corral in Ancon, lying between the old courthouse and the Masonic Temple, is to be removed. The "new corral" in Ancon, on the Bishop's Hollow road, is filled to capacity, but employees who have been keeping their animals in the old corral may transfer them to the Chorrillo corral.

The Chorrillo corral has accommodations for 580 animals. The recently completed addition provided 334 stalls.

OFFICIAL CIRCULARS.

Charges for Electric Current for Employees in Quarters.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., June 20, 1916.

CIRCULAR No. 676-9:

1. All previous rates for electric current for employees of The Panama Canal or the Panama Railroad for personal use are amended by the following rates, effective July 1, 1916:

METERED SERVICE.

2. The charge for metered electric current used on lighting circuits and on mixed lighting, heating and power circuits will be two cents per kilowatt-hour.
3. The charge for metered electric current used on heating and power circuits only, will be one cent per kilowatt-hour.
4. Separate meters for heating and power will be installed in quarters equipped with electric ranges and circulating water heaters, and may be installed on power equipment when deemed advisable by the Electrical Engineer.
5. The minimum charge for metered electric current will be 50 cents per month.

FLAT RATES FOR UNMETERED HOUSES.

6. The occupants of bachelor quarters will be charged 50 cents per month each for electric current.
7. The occupants of family quarters containing five 16-candlepower equivalents or less will be charged at the rate of 25 cents per month, per equivalent, with a minimum charge of 50 cents per month.
8. The occupants of family quarters containing over five 16-candlepower equivalents will be charged according to the following formula: \$1 plus six cents each for the total number of 16-candlepower equivalents.
9. Electrical appliances, such as irons, heaters, etc., will be charged for in addition to lighting at the present established rates.

CHESTER HARDING,  
Acting Governor.

Employees to Keep out of Panama and Colon during Elections.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 22, 1916.

To all concerned—All employees of The Panama Canal and the Panama Railroad Company are instructed to remain away from Panama and Colon during the progress of the municipal elections on Sunday, July 25, and of the national elections, on Sunday, July 9.

CHESTER HARDING,  
Acting Governor, The Panama Canal,  
Second Vice President, Panama Railroad Co.

Quarters for Gold Employees.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., June 15, 1916.

CIRCULAR No. 627-14: (Superseding all circulars of the 627 series)

1. Pursuant to the provision of the Executive Order of January 15, 1915, the operation of which was suspended by the Executive Order of May 25, 1915, rent will be charged for all quarters occupied by gold employees of The Panama Canal, the Panama Railroad, other departments of the United States Government, contractors, or others who may be permitted to occupy such quarters, effective July 1, 1916, and the following regulations will govern the assignment of quarters and the collection of rent therefor.

APPLICATIONS.

2. Applications for original assignment to quarters, or for transfer, must be made on the forms provided for that purpose, and should show the date of the employee's last entrance into the service, rate of salary, and the maximum and minimum rental he is willing to pay. This application must be approved by the head of the department in which the applicant is employed and certified by the Executive Secretary as to the employee's personnel record. Where two or more applicants' length of service is the same, salary received will determine preference. An applicant will not be offered an assignment to a house not falling within the minimum and maximum stated in his application.
3. Applications for original assignment to quarters in a district will be placed on one list according to the date of employee's last entrance into the service, and opposite each man's name will be indicated the maximum and minimum rate of rental the employee states in his application he is willing to pay.
4. A list showing all applications on file for each district will be posted in the office of the district quartermaster and will be open for inspection.
5. An employee may, at the request of the head of his department, file an application for family quarters at

or transfer his application to, a district other than that in which he is employed.

6. All applications of employees working within a district will take precedence over applications of any employees working elsewhere.

7. Applications for transfer of quarters within a district must be filed in writing with the district quartermaster, and the rule governing original assignments will be applied. Applications for transfer from within a district will be placed on the assignment list according to date of employee's last entrance into the service.

ASSIGNMENTS.

8. All houses on which the rental is fixed at \$25 or more per month and all houses or apartments necessary for firemen, nurses, or others requiring special assignment, will be considered as special houses, and an assignment will be made by the Chief Quartermaster, and in case of houses rented for \$15 or more per month, assignments will be approved by the Governor. All other quarters will be assigned by the district quartermaster to the employees entitled thereto under the regulations.

9. An applicant on the waiting list for family quarters, when he becomes eligible for assignment, will be given an opportunity to refuse three separate and distinct tenders of quarters, the rental of which is within the limits he states in his application. If he does not accept the third tender, his application will be cancelled and he will not be allowed to file a new application for similar quarters for a period of 10 days.

10. When an assignment has been made in conformity with these rules, it will stand until the quarters are accepted or rejected by the employee, or until the time within which to accept or reject the tender has expired. When an employee forfeits family quarters through failure to occupy them within the prescribed time, no new application for family quarters shall be filed within 15 days after the quarters previously assigned are forfeited or released.

11. Employees will be required to accept or reject tender of quarters within seven days from date of tender. Family quarters will be assigned to widow or widower employees having dependent children residing with them, in the same order as to married employees. Dependent children under this rule will not include sons more than 18 years of age in normal health, nor sons or daughters who are working and earning \$40 per month or more.

12. Houses coming within the official class, the rental for which is \$15 or more per month, may be assigned to bachelors by district quartermasters.

13. Family quarters may, with the approval of the Chief Quartermaster, be assigned to bachelors with dependent relatives, if there are no other applications on file. In such cases the employees to whom assignments are made, will not be permitted to transfer to other quarters, except in the absence of other applicants entitled to the quarters.

14. Assignments of family quarters may be made to aliens, only after all other applicants have been assigned. This applies to aliens appointed in the United States or on the Isthmus.

15. All family quarters distinctly and definitely within hospital grounds shall be regarded as for the use of doctors and nurses only, but the assignment of same shall remain under the jurisdiction of the Chief Quartermaster. Applicants for hospital quarters can not file applications for quarters outside of hospital grounds.

16. The rules applying to assignment of family quarters, their transfer, retention, etc., shall be applicable to bachelor quarters, so far as practicable.

17. Exchanges in assignments between employees in different districts will be permitted when such exchange does not interfere with the rights of other employees. These exchanges will be referred to the Chief Quartermaster for approval.

18. As it is at times necessary for employees, in order to hasten recovery from injury or illness incurred in line of duty, to return temporarily to the United States, and by reason of such absence to surrender family quarters, the application of such employees may be placed at the head of the list for assignment to the first quarters vacated after their return for duty, when rental is within the limits stated by the employee in his application for quarters, provided the employee's sojourn in the United States was upon recommendation of the Medical Examining Board.

OCCUPATION OF QUARTERS.

19. When family quarters are assigned to an employee whose family is not on the Isthmus, he will be allowed 61 days from the date of tender in which to occupy the quarters. This does not apply in the case of transfers.

20. An employee who has accumulated leave in excess of 61 days and who is granted this leave at the time he is tendered quarters on original assignment, may, upon application at the time of submitting request for leave of absence, be allowed time for occupancy of his quarters equal to the amount of leave granted, but in no case to exceed a total of 90 days from the date of tender of quarters.

VACATION OF QUARTERS.

21. Employees on termination of service may occupy quarters for the balance of the month, providing rent for the entire month has been paid, and in case the remainder of the month is less than 10 days from the date of termination, the employee will be allowed additional time in the next month to make up the 10-day period. Rent will be charged for all time that quarters are held under this provision.

22. A widow without children can hold quarters after the death of her husband, until arrangements can be made for her departure, rental to be charged for such time.

23. Whenever by reason of temporary decrease of work, or other cause, employees have been furloughed without pay for a period not exceeding 30 days, they will retain the right to hold quarters during that period upon payment of full rental.

24. The service of employees discharged or resigned, who secure immediate employment in some other department or division, shall be considered continuous so far as quarters are concerned, and the employee may hold his quarters under this condition and remain on the waiting list as of original date. Cases of this nature, however, should be referred to the Chief Quartermaster for decision.

25. Family quarters may be held during the absence of the employee to whom assigned, or his family, or both simultaneously, for two distinct periods in any service year, not to exceed a total of 120 days for both periods, or 90 days for one period. Employees in arranging for leaves of absence for themselves, or vacations for their families, must be governed accordingly. The two periods can not be taken advantage of continuously or allowed to overlap, either during the absence of both employee and family at the same time, or of either separately. The two periods must be regarded as entirely separate and distinct, and the quarters must be re-occupied both by the employee and his family before the first period of absence, before they can be vacated, without forfeiture, for the second period of absence.

RENTAL RATES.

26. Rates of rent for all quarters will be fixed by the Chief Quartermaster with the approval of the Governor, and a list showing approved rates for all quarters will be posted on bulletin boards at the offices of the district quartermasters.

27. All rentals are payable in advance to the Collector of The Panama Canal, or his deputy. Remittances should be made by check, or by order, or by postal money order, or by paying cash at the Collector's office in the Administration Building at Balboa Heights or the deputy collector's office in Cristobal. If rents, or charges for electric current, are not paid by the close of business on the 15th of the month, penalties of \$1 and 50 cents, respectively, will be charged, and the assignment to quarters may be cancelled if circumstances are such as to warrant this action being taken.

28. Policemen, firemen, and nurses, who are required for the good of the service to live in police stations, fire houses, and nurses' quarters, respectively, will be charged one-half of the regular rates. Policemen and firemen who pay rent for family quarters and are required to sleep at their stations will not be charged rent for their station quarters.

29. The provisions contained in the foregoing section do not apply to employees for whom special quarters have been constructed so that they may be convenient to their work, but applies only to employees who are required to live in designated quarters so that they will be within reach in sudden emergencies of fire, riot, disorder, or other public calamity.

30. When quarters are vacated a refund for the fractional part of the month will be made to the employee of one-thirtieth of the amount of the charge for the electric current for each day remaining in the month. Refunds will be made by the Collector or deputy collector, upon presentation of the receipt for the amount paid, together with a release from the quarters assigned by the district quartermaster. Refunds will not be made for fuel, but employees may dispose of any fuel on hand to other employees if desired.

31. Rent and current charges will begin on the day the quarters are accepted, and the charge for the fractional part of a month will be one-thirtieth of the regular monthly rate for each day remaining in the month.

32. Full rental and electric light charges will be made for quarters during any period that they are not occupied by the employee to whom they are assigned, whether this period be the time held for occupancy on original assignment, or during an employee's absence on vacation, or any other cause. An employee who, however, during any of said periods, sublet his quarters to any other gold employee, but in that event he will not be permitted to charge more than the established rate of rent for such temporary occupancy, plus not to exceed 25 per cent thereof, if the sublessee is permitted to use the personal property and household utensils of the employee to whom the quarters are regularly assigned. An employee may also sublet a part of the quar-



ters assigned to him to another gold employe, during the time he is occupying the remaining part by himself and family, but in such cases he will not be permitted to charge more than one-half of the regular rental, for the occupancy of a part of his quarters. Written notification must be made in advance to the district quartermaster of an employe's desire to avail himself of the provisions of this section.

34. Receipts for rent will be given on prescribed forms and must be shown on demand to the properly authorized representative of The Panama Canal.

35. A bachelor quartered elsewhere than in the immediate vicinity of his work will not be entitled to a reduction in rent, but may be granted free transportation until between his quarters and this official station if no quarters are available in the district in which he works.

36. An employe whose duties require him to be quartered at more than one town shall pay rent only for the quarters in the town considered his headquarters and when this can not be determined, he shall pay only the higher rental. When family quarters are occupied in such case, the rate for the family quarters will govern.

37. An employe occupying bachelor quarters in the immediate vicinity of his work and holding an assignment to family quarters elsewhere, solely for his convenience and at his request, will be charged full rental for both quarters. Such employes, however, will be given a weekly round-trip pass to visit their families, if they so desire.

38. An employe who is regularly assigned to family quarters at his place of work will be required to pay rent for bachelor quarters while awaiting assignment to family quarters at a new station to which he is permanently transferred. If transferred temporarily for the good of the service no additional rental will be charged for the bachelor quarters occupied temporarily.

#### FUEL AND ELECTRIC CURRENT.

39. The rents which will be established from time to time for quarters, do not include the use of electric current, or the furnishing of fuel, and separate charges will be made therefor.

40. Coal and kindling wood will be sold and delivered by the commissaries at such rates as may be fixed by the Chief Quartermaster.

41. Electric current will be furnished at such rates, and subject to such conditions, as may be approved by the Governor.

42. The use of electrical appliances in quarters is prohibited, except under such terms and conditions as shall be established and published from time to time.

#### FURNITURE.

43. The allowance of furniture for regular family quarters will be as follows: 1 range, 2 kitchen chairs, 1 chiffonier, 1 sideboard, 1 dining table, 1 kitchen table, 2 center tables, 1 dresser, 1 double bed, 1 refrigerator, 6 dining chairs, 1 dining table, 3 wicker rockers.

In houses for which the rental is \$25 per month or more, the following additional articles are authorized: 3 dining chairs, 1 morris chair, 2 towel racks, 1 parlor desk, 2 parlor chairs, 1 chiffonier, 1 porch swing, 1 parlor wicker rocker, 1 serving table, 1 dresser, 1 double porch seat.

44. Nonhousekeeping quarters will be provided such furniture as may be available, but in no case more than is provided above for regular family quarters.

45. The issue of beds, mattresses, and one dresser in excess of this allowance, is authorized to families with children. Employes moving from one house to another in the same district will be permitted to take with them, at their own expense, beds, mattresses, and refrigerators.

46. When an employe living in family quarters desires to use his own furniture exclusively, a reduction of \$2 per month will be made in the rent. No reduction will be made however, unless all Panama Canal furniture including refrigerators, but excepting stoves, is released.

#### RENTAL OF QUARTERS TO NONEMPLOYEES.

47. The following surcharges will be added to the regular schedule of rentals, when quarters are rented to other than employes of The Panama Canal or Panama Railroad Company:

(a) Contractors, and their employes, officers and enlisted men of the Army, Navy, and Marine Corps, officers and employes of other branches of the United States Government:

Bachelor quarters..... 50 per cent  
Family quarters..... 80 per cent

(b) Outside parties who have no connection with the Panama Canal, the Panama Railroad Company, contractors, or the various branches of the United States Government:

Bachelor quarters..... 125 per cent  
Family quarters..... 250 per cent

48. No charge will be made for electric current in quarters when the surcharges mentioned in the foregoing section are added to the regular rental.

49. The above surcharges will be remitted when quarters are rented to officers and enlisted men of the

Army, Navy, and Marine Corps, or other branches of the United States Government service, and the repairs to the buildings occupied are made by the interests occupying same; but in such cases, the regular charge will be made for electric current consumed. No surcharges will be added to the rental of quarters which may be assigned to ministers or representatives of charitable organizations, but charge will be made for electric current in such quarters.

50. The foregoing provisions do not give any of the above-mentioned classes of nonemployes any rights to assignments to quarters. Bachelor quarters, if available, may be rented to any of the above classes, except that assignments under subdivision (b) will only be made with the approval of the Chief Quartermaster, and assignments of family quarters to nonemployes will be made only with the approval of the Governor. The surcharges mentioned above are applicable to both gold and silver quarters.

#### GENERAL.

51. All sanitary regulations, and all regulations promulgated by the Chief Quartermaster, must be complied with.

52. Should any of the rules and regulations herein contained not be complied with, occupants of quarters will be subject to immediate ejectment and no allowance will be made on account of rental paid for the unexpired balance of the month.

53. The wife constitutes the family of an employe, and no consideration can be given applications for family quarters for occupancy by other members of a family than the wife, except from widows and widowers having dependent children living with them, as herein provided, or unless there are no other applications on file.

54. No alterations or additions will be made to any house by the occupant, without the approval of the Chief Quartermaster, and then only at his own expense.

55. Employes having five or more dependent children living with them, and who have received an assignment to family quarters in due course, or who have been reached for assignment, will be given preference over all other applicants for transfers to certain designated houses in each district. The numbers of these houses will be on file with the district quartermaster in each district and list of same will be posted with lists of applications. Dependent children under this rule will not include sons more than 18 years of age in normal health and not orphans or daughters who are working and earning \$40 per month or more.

56. The publication of an approved schedule of rentals for family and bachelor quarters in THE CANAL RECORD, shall be considered sufficient notice of the same to all employes interested, and the nonreceipt of monthly bills shall not relieve the occupant of paying the rental for the quarters occupied by him in accordance with the provisions of this circular.

CHESTER HARDING,  
Acting Governor.

#### "Retired" and "Bad Order" Cars.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 23, 1916.

#### HEADS OF DEPARTMENTS AND DIVISIONS:

Notwithstanding the numerous circulars and bulletins which have been issued from time to time concerning the loading of "retired" and "bad order" cars, the Panama Railroad is repeatedly receiving cars of this class containing shipments for line points.

The practice of loading these cars for shipment outside of terminals is dangerous, and must be discontinued at once. Any violation of these instructions will be reported to this office, in order that proper measures may be taken to have it stopped.

CHESTER HARDING,  
Acting Governor, The Panama Canal,  
Second Vice President, Panama Railroad Co.

#### Appointment.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., June 12, 1916.

#### CIRCULAR NO. 661-29:

Effective July 1, 1916, Lieut. Col. Deane C. Howard, Medical Corps, U. S. Army, is appointed Chief Hospital Officer, vice Lieut. Col. Charles F. Mason, Medical Corps, U. S. Army, relieved from duty with The Panama Canal.

CHESTER HARDING,  
Acting Governor.

#### Transfer of Quarters.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 20, 1916.

To all concerned—Before applications for transfer of quarters can be properly considered for assignment, it is necessary that the district quartermaster be advised the date of the employe's last entrance into the service,

the rate of pay, and maximum and minimum rental to be paid.

Employes will, therefore, make their applications on the regular form for quarters, which must be approved by the head of the department in which the applicant is employed, and certified by the Executive Secretary as to the employe's personnel record.

CHESTER HARDING,  
Acting Governor.

#### Acting Electrical Engineer.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 15, 1916.

To all concerned—Effective June 17, and during the absence of Captain W. H. Rose, Electrical Engineer, in the United States on official business, Mr. Hartley Rowe, Electrical Superintendent, will perform the duties of the Electrical Engineer, as Acting Electrical Engineer.

CHESTER HARDING,  
Acting Governor.

#### Officials in Charge at Pacific Locks.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 13, 1916.

To all concerned—During the absence of Mr. R. H. Whitehead on leave, effective June 15, 1916, the duties of superintendent, Pacific Locks, will be performed by Mr. W. R. Holloway, and those of assistant superintendent by Mr. Geo. L. Viberg.

CHESTER HARDING,  
Acting Governor.

#### Reports of Transfers of Rolling Stock.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 15, 1916.

#### CIRCULAR NO. 123:

To all concerned—Effective reports for the month for June, 1916, form A-346, "Report of transfers of rolling stock", will be prepared in quintuplicate as in the past, however, distribution is amended as follows:

One copy shall be sent to the Chief Quartermaster. One copy shall be sent to the Auditor.

Two copies shall be sent to the Superintendent, Mechanical Division.

One copy shall be retained for the files.

In order that the Mechanical Division may receive their copies in time to assess the charges in connection with any piece of equipment against the department using it during the preceding month, it is requested that copies be forwarded not later than the morning of the 2nd of the month following.

H. A. A. SMITH,  
Auditor, The Panama Canal.

Approved:  
CHESTER HARDING,  
Acting Governor.

#### Charges for Care of Horses and Ponies at Corrals.

THE PANAMA CANAL,  
SUPERVISOR DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 17, 1916.

To all concerned—Effective July 1, 1916, the charge for the care and forage of horses and ponies at Panama Canal corrals will be as follows:

Horses..... \$17.50 per month  
Ponies..... 10.50 per month

In the case of Army horses stabled at Canal corrals, the present practice of invoicing the cost of the forage used, and charging a flat rate for the care of the horse per month, will continue, which stabling charge is hereby set at \$3.00 per month, effective July 1, 1916.

F. H. SMITH,  
Acting Chief Quartermaster.

#### Information as to Vessels Owned by The Panama Canal and the Panama Railroad Company.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 23, 1916.

#### HEADS OF DEPARTMENTS AND DIVISIONS:

Please forward to this office, in duplicate, not later than July 3, a statement of all vessels owned by The Panama Canal and the Panama Railroad Company under your charge on June 30, 1916. This statement should give the information called for by the several heads on the attached form.\*

This information is required by the Department of Commerce for inclusion in the 1916 edition of "Merchant Vessels of the United States."

C. A. McILVAINE,  
Executive Secretary.

\*The form referred to has ruled spaces for the designation of: Name of vessel; class; material; gross tons; length, breadth, and depth; when and where built; when and where purchased; estimated value; complement, officers and men; where employed.



COMMISSARY DEPARTMENT.

Increase of Price of Meat Purchased in United States.

The extensive increase in the cost of fresh meats purchased in the United States has compelled the commissary branch of the Supply Department to advance the prices on choice and special beef and lamb, mutton, veal, and pork, effective June 29.

The successful operation of the abattoir at Cristobal has made possible the continuance of the present prices on native beef.

Current retail prices of fresh meat are given below:

The prices are increased by 10 per cent for sales to commercial and foreign naval vessels, and by 20 per cent for sales to yachts:

FRESH BEEF.		Price.
Beef, suet, special, per lb.	.....	\$.03
Beef suet, native, per lb.	.....	.....
Soup beef, special, per lb.	.....	.....
Soup beef, native, per lb.	.....	.....
Soup bone, special, per lb.	.....	.....
Soup bone, native, per lb.	.....	.....
Stew beef, native, per lb.	.....	.....
Stew beef, native, per lb.	.....	.....
Chuck roast (3 lbs. up), native, per lb.	.....	.....
Rib roast, 2d cut (3 lbs. up) special, per lb.	.....	.....
Rib roast, 2d cut (3 lbs. up), native, per lb.	.....	.....
Rib roast, 1st cut (3 lbs. up), special, per lb.	.....	.....
Rib roast, 1st cut (3 lbs. up), native, per lb.	.....	.....
Pot roast, special, per lb.	.....	.....
Pot roast, native, per lb.	.....	.....
Rump roast, special, per lb.	.....	.....
Rump roast, native, per lb.	.....	.....
Porterhouse roast, choice, per lb.	.....	.....
Porterhouse roast, special, per lb.	.....	.....
Porterhouse roast, native, per lb.	.....	.....
Chuck steak, native, per lb.	.....	.....
Round steak, bottom, special, per lb.	.....	.....
Round steak, bottom, native, per lb.	.....	.....
Round steak, top, special, per lb.	.....	.....
Round steak, top, native, per lb.	.....	.....
Sirloin steak, special, per lb.	.....	.....
Sirloin steak, native, per lb.	.....	.....
Sirloin steak, choice cut, special, per lb.	.....	.....
Sirloin steak, choice cut, native, per lb.	.....	.....
Rump steak, special, per lb.	.....	.....
Rump steak, native, per lb.	.....	.....
Porterhouse steak (14 lbs. up), choice, per lb.	.....	.....
Porterhouse steak (14 lbs. up), special, per lb.	.....	.....
Porterhouse steak (14 lbs. up), native, per lb.	.....	.....
Porterhouse steak, short, choice, per lb.	.....	.....
Porterhouse steak, short, special, per lb.	.....	.....
Porterhouse steak, short, native, per lb.	.....	.....
Tenderloin steak, special, per lb.	.....	.....
Tenderloin steak, native, per lb.	.....	.....
Tenderloin steak, western, special, per lb.	.....	.....
Rib steak, native, per lb.	.....	.....
FRESH MEATS.		
Lamb, chops, per lb.	.....	.....
Lamb, chops, shoulder, per lb.	.....	.....
Lamb, legs, 5 to 8 lbs., per lb.	.....	.....
Lamb, shoulder, trimmed, not less than 3 1/2 lbs., per lb.	.....	.....
Lamb, stewing, per lb.	.....	.....
Mutton, chops, short cut, per lb.	.....	.....
Mutton, chops, shoulder, per lb.	.....	.....
Mutton, leg, 8 to 10 lbs., per lb.	.....	.....
Mutton, shoulder, trimmed, not less than 5 lbs., per lb.	.....	.....
Mutton, stewing, per lb.	.....	.....
Pork, hams, fresh, footnote, per lb.	.....	.....
Pork, loins, chops, or roast, per lb.	.....	.....
Pork, shoulders, fresh (see footnote), per lb.	.....	.....
Veal, chops, per lb.	.....	.....
Veal, chops, shoulder, per lb.	.....	.....
Veal, cutlets, per lb.	.....	.....
Veal, loin for roasting, per lb.	.....	.....
Veal, shoulder for roasting not under 4 lbs., per lb.	.....	.....
Veal, stewing, per lb.	.....	.....

\* Indicates advances from preceding list.  
† Indicates reduction from preceding list.  
‡ Not less than 1 ham or 1 shoulder of fresh pork will be sold.

Midirected Letters.

BALBOA, HIGHTS, C. Z., June 27, 1916.  
The following insufficiently addressed letters and papers have been received in the office of the Director of Posts, and may be obtained upon request of the addressees. Requests may be made by telephone, calling No. 182, Balboa:  
Burton, Joseph. Meyer, Sam.  
Downing, Jas. Porter, G.  
Fearon, Violet. Keece, Thomas  
Flynn, C. E. Roenitz, Chas. B.  
Grant, Mrs. Mabel. Sharples, J. H. M.  
Jordan, Jordan F. Shelton, H. T.  
Kammermeyer, J. Talbot, John E.  
Lawson, J. A. Unger, Frank  
McGahn, Garfield R.

\*Paper. †Special delivery.

SHIPPING INFORMATION.

Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions for the next six weeks are given in this table:

JUNE.		Time and height of high and low water.			
DATE.					
Wed., June 28.....	2:28 12.5	8:29 3.4	14:34 13.4	20:57 2.1	
Thurs., June 29.....	3:12 12.9	9:14 2.9	15:17 13.6	21:39 1.6	
Fri., June 30.....	3:53 13.2	9:56 2.5	15:56 13.9	22:17 1.2	

JULY.		Time and height of high and low water.			
DATE.					
Sat., July 1.....	4:31 13.5	10:33 2.2	16:35 14.0	22:53 1.0	
Sun., July 2.....	5:08 13.8	11:10 2.1	17:12 14.1	23:28 1.0	
Mon., July 3.....	5:44 13.9	11:46 2.1	17:48 14.0		
Tues., July 4.....	6:02 1.2	12:12 2.0	18:23 13.8		
Wed., July 5.....	6:36 1.5	12:59 13.9	18:57 13.5		
Thurs., July 6.....	7:22 2.0	13:39 13.8	19:32 13.1		
Fri., July 7.....	7:56 2.5	14:24 13.6	20:12 12.6		
Sat., July 8.....	8:37 3.1	15:15 13.3	21:00 12.1		
Sun., July 9.....	9:27 3.5	16:12 13.1	22:02 11.8		
Mon., July 10.....	10:31 3.8	17:19 13.0	23:17 11.9		
Tues., July 11.....	11:44 3.8	18:28 13.3			
Wed., July 12.....	6:42 12.4	12:54 3.4	19:34 13.9	1.9	
Thurs., July 13.....	7:53 13.3	13:56 2.5	20:33 14.8	0.7	
Fri., July 14.....	8:52 14.5	14:52 1.3	21:26 15.6	-0.5	
Sat., July 15.....	9:45 15.5	15:47 2.0	22:14 16.4	-1.4	
Sun., July 16.....	10:34 16.4	16:39 -0.6	23:00 16.8	-1.9	
Mon., July 17.....	11:21 17.0	17:31 -1.0	23:45 16.9	-1.9	
Tues., July 18.....	6:02 17.2	12:07 -0.9	18:20 16.6		
Wed., July 19.....	6:49 -1.4	12:56 17.0	19:06 -0.4	15.9	
Thurs., July 20.....	7:34 -0.5	13:45 16.3	19:53 0.5	16.9	
Fri., July 21.....	8:19 0.8	14:37 15.3	20:36 1.5	13.	
Sat., July 22.....	2:58 2.0	9:08 14.0	15:32 2.5	21:36 12.5	
Sun., July 23.....	3:55 3.2	10:03 13.1	16:32 3.4	22:44 11.7	
Mon., July 24.....	4:56 4.1	11:01 12.3	17:36 3.9		
Tues., July 25.....	0:00 11.2	6:02 11.6	12:21 12.0	18:43 4.0	
Wed., July 26.....	1:12 11.3	7:09 11.6	13:25 12.2	19:46 3.6	
Thurs., July 27.....	2:09 11.8	8:07 12.4	14:17 12.6	20:39 2.9	
Fri., July 28.....	2:56 12.3	8:57 3.5	15:01 13.1	21:21 2.2	
Sat., July 29.....	3:37 13.0	9:39 2.8	15:41 13.6	22:00 1.5	
Sun., July 30.....	4:14 13.5	10:17 2.2	16:18 14.0	22:34 1.0	
Mon., July 31.....	4:48 14.0	10:52 1.7	16:53 14.3	23:07 0.8	

AUGUST.

DATE.	Time and height of high and low water.			
Tues., Aug. 1.....	5:21 14.6	11:26 1.4	17:28 14.4	23:39 0.8
Wed., Aug. 2.....	5:52 14.6	12:00 1.4	18:01 14.4	
Thurs., Aug. 3.....	6:11 1.0	12:22 14.7	18:33 1.5	14.2
Fri., Aug. 4.....	6:44 1.3	12:52 14.6	19:07 1.8	13.9
Sat., Aug. 5.....	7:18 1.8	13:24 14.5	19:44 2.2	13.4
Sun., Aug. 6.....	7:50 2.4	14:02 14.1	20:27 2.7	
Mon., Aug. 7.....	8:19 3.1	14:39 13.6	21:03 3.2	12.8
Tues., Aug. 8.....	8:49 3.7	15:10 13.1	21:39 3.4	12.2
Wed., Aug. 9.....	9:01 4.0	15:01 13.0	17:58 3.1	

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.  
The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0 (midnight) to 23 (11:00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

Rainfall from June 1 to 24, Inclusive.

STATIONS.		Maximum in one day.	Date.	Total for period.
Pacific Section—				
Balboa.....	Ins.	.72	8	3.52
Balboa Heights.....	Ins.	.69	10	3.65
Miraflores.....	Ins.	1.23	15	5.08
Pedro Miguel.....	Ins.	1.37	15	6.07
Rio Grande.....	Ins.	2.08	15	8.31
Central Section—				
*Culebra.....	Ins.	1.50	8	7.17
*Camacho.....	Ins.	1.50	24	6.81
Empire.....	Ins.	1.16	24	6.74
Gambou.....	Ins.	1.49	22	7.67
Juan Mina.....	Ins.	1.22	14	6.22
Alhajuela.....	Ins.	2.36	7 & 13	13.51
*Vigia.....	Ins.	2.81	8	12.65
Frioles.....	Ins.	1.80	8	7.09
*Monte Lirio.....	Ins.	3.60	8	8.80
Atlantic Section—				
Gatun.....	Ins.	2.33	8	7.59
*Brazos Brook.....	Ins.	2.16	8	10.34
Colon.....	Ins.	3.09	23	10.21
*Encas del Toro.....	Ins.	1.18	18	4.84

\*Standard rain gage—readings at 5 p. m. daily.  
Automatic rain gage: at unstarred stations—values midnight to midnight.  
†Standard rain gage—readings at 8 a. m. daily.

Maximum Stages of the Chagres River, Gatun Lake and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, June 24, 1916:

DAY AND DATE.		STATIONS.				
		Vigia	Alhajuela	Gambou	Gatun Lake	Miraflores Lake.
Sun., June 18.....	127.60	93.75	6.918	45.54	50.00	
Mon., June 19.....	126.15	93.05	6.80	44.54	50.00	
Tues., June 20.....	126.61	92.486	52.16	43.53	93	
Wed., June 21.....	127.00	93.186	54.6	43.54	27	
Thurs., June 22.....	120.83	95.186	54.6	43.54	35	
Fri., June 23.....	128.65	95.7986	45.6	43.53	92	
Sat., June 24.....	129.70	95.10	6.5186	45.54	47	
Height of low water to nearest foot.....		125.0	91.0			

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., June 25, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
June 20....	<i>Florence Luckenbach</i>	American	Luckenbach Steamship Line....	New York.....	New Zealand.....	General.....	4,000	5,835	4,506
June 20....	<i>Heraclides</i>	Norwegian	Bruusgaard Kosterul.....	Newport News.....	Taitai.....	Ballast.....	.....	5,404	3,937
June 20....	<i>Paraiso</i>	American	Long Beach Steamship Co.....	Cristobal.....	San Francisco.....	General.....	.....	1,400	933
June 21....	<i>Guatemala</i>	British	Pacific Steam N. W. Co.....	Cristobal.....	Guayaquil.....	General.....	1,886	4,249	2,772
June 21....	<i>Balboa</i>	American	American Mex. Ste. Trd. Co.....	Cristobal.....	Turkey.....	General.....	.....	703	3,152
June 21....	<i>City of Norwich</i>	British	South American S. S. Co.....	Cristobal.....	Vulparaíso.....	General.....	1,537	4,563	3,121
June 22....	<i>Beckenham</i>	British	Norton Lilly & Company.....	New York.....	Vladivostok.....	General.....	9,009	7,675	5,814
June 22....	<i>Jason (collier)</i>	British	British Steamship Co. Ltd.....	Norfolk.....	Mejillones.....	Coal.....	6,591	4,943	3,508
June 22....	<i>Amar</i>	American	United States Government.....	Norfolk.....	San Francisco.....	Coal, naval stores.....	10,321	11,363	6,446
June 22....	<i>Newport</i>	American	Royal Dutch West India Mail.....	Curacao.....	Guayaquil.....	Ballast.....	.....	2,442	1,616
June 24....	<i>Hesperos</i>	Norwegian	Pacific Mail Company.....	Cristobal.....	San Francisco.....	General.....	.....	3,173	2,163
June 24....	<i>Stella</i>	Dutch	Bruusgaard Kosterul.....	Newport News.....	Tacoma.....	Ballast.....	.....	5,678	4,214
June 24....	<i>Don Benito</i>	British	Royal Dutch West India Mail.....	Port Talbot.....	Liverpool.....	General.....	3,367	2,884	1,917
June 24....	<i>Acajula</i>	British	Buenos Aires & Pac. Railway Co.....	Cristobal.....	Esquimalt.....	Coal.....	4,990	4,243	3,101
June 24....	<i>Kafue</i>	British	Pacific Steam Navigation Co.....	Cristobal.....	Buenaventura.....	General.....	830	1,219	627
June 24....	<i>Sorala</i>	British	Norton Lilly & Company.....	New York.....	Honolulu.....	General.....	6,900	7,901	5,253
June 25....	<i>City of Durham</i>	British	Pacific Steam Navigation Co.....	Norfolk.....	Millen Jo.....	Coal.....	5,734	4,782	3,346
June 25....	<i>Urubamba</i>	Peruvian	Norton Lilly & Company.....	New York.....	San Francisco.....	General.....	7,350	5,974	4,499

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

June 19....	<i>Terrier</i>	Norwegian	W. Wilhelmsens.....	Taitai.....	Colon (orders)...	Nitrates.....	8,201	5,495	4,032
June 20....	<i>Lord Derby</i>	British	Occidental & Oriental S. S. Co.....	Antofagasta.....	Miraflores.....	Nitrates.....	6,101	4,829	3,588
June 20....	<i>Acajula</i>	British	Pacific Steam N. W. Co.....	Tobago.....	Colon (orders)...	Café, balsam.....	20	1,219	627
June 20....	<i>Alfred Noble</i>	Norwegian	Concordia S. S. Company.....	Uniquis.....	Colon (orders)...	Nitrates.....	8,491	6,036	4,297
June 21....	<i>Imperial</i>	British	South American S. S. Co.....	Vulparaíso.....	Colon.....	General.....	1,103	3,621	2,397
June 21....	<i>Kinloch</i>	British	China Mutual Steam Nav. Co.....	Iquique.....	Colon (orders)...	Nitrates.....	5,611	4,978	3,416
June 22....	<i>Rancagua</i>	Chilean	Chilean Government.....	Mejillones.....	Norfolk.....	Nitrates.....	7,811	6,968	4,058
June 22....	<i>Anglo Australian</i>	British	Nitrate Producers S. S. Co.....	New Caledonia.....	Colon (orders)...	Oil, cottonseed.....	5,019	4,794	3,485
June 22....	<i>Santa Catalina</i>	American	Atlantic & Pacific S. S. Co.....	Uniquis.....	New York.....	Nitrates.....	8,549	6,657	4,409
June 24....	<i>Bradford</i>	American	Standard Oil Company.....	Tulara.....	New York.....	Crude naphtha.....	7,611	7,236	5,398
June 25....	<i>Urubamba</i>	Peruvian	Peruvian Steamship Co.....	Cillao.....	Colon.....	General.....	3,733	4,957	3,118

## ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

June 25....	<i>Ribera</i>	Bolton Steam Shipping Co.	Cardiff, Kingston.						
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## EXPECTED ARRIVALS FROM PACIFIC.

.....	<i>Mathilda</i>	Mathilda Steamship Co.	Chilean ports.	June 26....	<i>Ellerie</i>	Ellerie S. S. Company.....	Chilean ports.
.....	<i>Gosan Maru</i>	Hashimoto Kisen Kabushiki	Chilean ports.	June 26....	<i>Caspian</i>	Nelson, Donkin & Co.....	Chilean ports.
.....	<i>Florentino</i>	Polsoth Steamship Co.	Chilean ports.	June 30....	<i>Harlequin</i>	Port Steamship Co.....	Chilean ports.
June 25....	<i>John A. Hooper</i>	Sudden & Christenson.....	Antofagasta.	June 33....	<i>Kalibia</i>	Clyde Steamship Co.....	Chilean ports.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
June 25....	<i>Perou</i>	French Line.....	Saint Nazaire.	June 30....	<i>Perou</i>	French Line.....	Saint Nazaire.
June 25....	<i>Iliaca (cutter)</i>	U. S. Government.....	St. Thomas.	.....	<i>Itasca</i>	U. S. Government.....	.....

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS

## DEPARTURES.

June 20....	<i>California (yacht)</i>	C. B. Stockler.....	San Diego.	June 24....	<i>Clapet No. 2</i>	National Navigation Co....	Pedregal.
June 23....	<i>Clapet No. 2</i>	National Navigation Co....	Panama.				

\*Other than ships passing through the Canal.

## Sallings of Vessels in Regular Service with the United States.

## NEW YORK TO CRISTOBAL-COLON.

Vessel	Line	Sails	Arrives
<i>Zacapa</i>	U. F. C.	June 21.....	28
<i>Alfonso</i>	P. R. R.	June 22.....	29
<i>Calamarez</i>	U. F. C.	June 24.....	2
<i>Carrillo</i>	U. F. C.	June 28.....	5
<i>Admiral</i>	P. R. R.	June 29.....	6
<i>Tenadores</i>	U. F. C.	July 1.....	9
<i>Santa Marta</i>	U. F. C.	July 5.....	12
<i>Cristobal</i>	P. R. R.	July 6.....	13
<i>Metapan</i>	U. F. C.	July 8.....	17
<i>Almirante</i>	U. F. C.	July 12.....	19
<i>Colon</i>	P. R. R.	July 13.....	19
<i>Pastores</i>	U. F. C.	July 15.....	23
<i>Zacapa</i>	U. F. C.	July 19.....	26
<i>Alfonso</i>	P. R. R.	July 20.....	26

## CRISTOBAL-COLON TO NEW YORK.

<i>Panama</i>	P. R. R.	June 29.....	5
<i>Almirante</i>	U. F. C.	June 29.....	6
<i>Pastores</i>	U. F. C.	July 3.....	10
<i>Alfonso</i>	U. F. C.	July 6.....	13
<i>Calamarez</i>	U. F. C.	July 10.....	17
<i>Cristobal</i>	P. R. R.	July 10.....	17
<i>Carrillo</i>	U. F. C.	July 13.....	20
<i>Tenadores</i>	U. F. C.	July 17.....	24
<i>Admiral</i>	P. R. R.	July 20.....	27
<i>Santa Marta</i>	U. F. C.	July 24.....	31
<i>Metapan</i>	U. F. C.	July 24.....	31
<i>Colon</i>	P. R. R.	July 27.....	Aug 3
<i>Almirante</i>	U. F. C.	July 27.....	Aug 3

## NEW ORLEANS TO CRISTOBAL-COLON.

<i>Abengares</i>	U. F. C.	June 24.....	1
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<i>Heredia</i>	U. F. C.	June 28.....	3
<i>Turrialba</i>	U. F. C.	July 1.....	8
<i>Parishina</i>	U. F. C.	July 5.....	10
<i>Atenas</i>	U. F. C.	July 8.....	15
<i>Carliago</i>	U. F. C.	July 12.....	17
<i>Abengares</i>	U. F. C.	July 15.....	22
<i>Heredia</i>	U. F. C.	July 19.....	24
<i>Turrialba</i>	U. F. C.	July 22.....	29
<i>Parishina</i>	U. F. C.	July 26.....	31

## CRISTOBAL-COLON TO NEW ORLEANS.

<i>Carliago</i>	U. F. C.	July 2.....	7
<i>Abengares</i>	U. F. C.	July 2.....	10
<i>Heredia</i>	U. F. C.	July 9.....	14
<i>Turrialba</i>	U. F. C.	July 9.....	17
<i>Parishina</i>	U. F. C.	July 16.....	21
<i>Atenas</i>	U. F. C.	July 16.....	24
<i>Carliago</i>	U. F. C.	July 23.....	28



## The Canal Record

Official publication of The Panama Canal.

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The paper is published free to United States Government departments, representatives of foreign governments, public libraries, and employees of The Panama Canal and the Panama Railroad Company whose names are on the gold roll.

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Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### The "Corozal" Removed from Dry Dock.

The ladder dredge *Corozal*, which is the first vessel to have made use of the new 1,000-foot dry dock at Balboa, was removed from the dock shortly after 3 p. m., on Saturday, July 1, and returned to the Cut. The dock was flooded successfully, with the tide at an elevation of approximately four and one-half feet above mean sealevel, and the *Corozal* was warped down to the entrance, where she was taken in tow by a tug and handled through the gap in the cofferdam across the approach basin.

#### New Oil Tanks Under Construction at Terminals.

Four new oil tanks, to provide an aggregate storage of 200,000 barrels, are under construction in the farms connected with the terminal plants. Two of 55,000 barrels capacity are being built by The Panama Canal, one at Balboa and one at Mount Hope, for the storage of crude oil. These tanks are approximately 30 feet in elevation by 150 feet in diameter and are similar to the 55,000 barrel tanks now in service.

The West India Oil Company is building two tanks at Balboa. One, for crude oil, is to have a capacity of 65,000 barrels and will be the largest tank on the Isthmus. The other, designed for Diesel oil, will have a capacity of 25,000 barrels.

The total capacity of the tanks in service at present is as follows: At Balboa, crude oil, 379,000 barrels; Diesel oil, 35,000 barrels; gasoline, 5,000 barrels. At Mount

Hope, crude oil, 519,000 barrels; gasoline, 5,000 barrels.

#### The Return of the "Siberia" to the Pacific Trade.

The steamship *Siberia*, formerly of the fleet of the Pacific Mail Steamship Company, and sold by the latter to the Atlantic Transport Company, for service between Great Britain and New York, passed through the Canal on July 1 on her way back to the Pacific under the house flag of the Toyo Kisen Kaisha. She has been registered in Yokohama and will be operated in the service between the United States and the Far East.

The *Siberia* is the largest ship to have passed through the Canal since its reopening. She is 552 feet in length by 63 feet beam and was drawing 29 feet forward and 29 feet seven inches aft at the time of passing through the Cut. Excepting the sister ships *Finland* and *Kroonland*, the *Siberia* is the largest ship which has ever passed through the Canal. Her displacement tonnage is rated at 18,000.

The *Siberia* came to Balboa from San Francisco on October 10, 1915, but was unable to make the transit of the Canal on account of the slides. She and her sister ship, the *Korea*, which had arrived at Balboa one week before, proceeded to the Atlantic by way of the Strait of Magellan. The *Korea* is expected to return through the Canal within a short time, having likewise been sold to the Toyo Kisen Kaisha.

The price of the *Korea* and *Siberia* in the recent sale is reported as \$2,000,000 each. When they were sold last October by the Pacific Mail the company received slightly over \$5,000,000 for the two and also the *China* and the *Manchuria* and the *Mongolia*. The *Manchuria* and the *Mongolia* are larger and finer ships than the *Siberia*; they are rated at 28,000 tons displacement.

The *Siberia* is carrying a general cargo, amounting to 6,579 tons, from New York direct to Vladivostok. She has no passengers but is carrying a crew of 146. She took 1,000 tons of coal at Balboa.

#### Post-office at Fort Grant.

A post-office has been established at Fort Grant, beginning its service on July 1. It serves the residents of Fort Grant, composed almost entirely of soldiers and their families living at the Pacific entrance fortifications, who have heretofore received their mail through the Balboa post-office. The Fort Grant office will handle ordinary and registered mail, but no money order business will be transacted in the office at present. Mail should be addressed "Fort Grant, Canal Zone."

A timetable of the operation of labor trains over the section of the Panama Railroad south of Paraiso is published in this issue, page 391. It includes the schedules of the shuttle train which is operated for pay passengers only between Fort Grant and Panama.

### TIDES AT PANAMA AND COLON.

Hydrographic Office's Explanation of Difference in Range on Sides of Isthmus.

The Hydrographic Office of the Navy Department has published, on the back of the pilot charts for May, 1916, answers to various letters of inquiry which, as the office states, "frequently possess an interest for many besides the inquirer." Among the inquiries was a request for an explanation of the great difference in the range of tides at Panama and Colon. This is the answer:

"The cause of the tides is found in the periodic disturbance of the ocean on account of the periodic differences of attraction of the moon, and to a lesser degree of the sun, upon the waters of the earth. The tide-producing force of the moon upon a particle of unit mass is the difference between the moon's attraction upon the given unit mass and the moon's attraction upon the entire earth. The vertical components of the attractions of the tide-producing bodies can not create any sensible disturbance on the oceans; but the horizontal components of such attractions, tending to produce horizontal movements oscillating back and forth on the surface of the earth, are effective in the production of the tides, and, by acting upon portions of the oceans that are susceptible of taking up stationary oscillations in approximate unison with the period of the tide-producing attractions, give rise to the dominant tides.

"By a stationary oscillation is meant the kind of motion which is set up in a tank or other artificial vessel of water when one end is raised and lowered at regularly timed intervals. High water at one end of such a rectangular body of water occurs when it is low water at the other end, if the simplest mode of oscillation be under consideration. Between the two ends is a line, styled the 'nodal line,' along which there is neither rise nor fall, but across which the horizontal motion of the liquid particle is comparatively great. In order that a large and regular oscillation may be maintained it is necessary that the natural period of the basin of water be very nearly equal to the period of the applied forces, just as a resonator must have certain dimensions if a particular musical tone is to be reinforced by its presence.

"Of course the tides at Panama and Colon, being produced by oscillation in strips of two oceans which are separated from each other by a continental barrier, have no connection or mutual influence. Panama is situated at one end of an oscillating strip of the Pacific Ocean, where the rise and fall would naturally be greatest. Colon, on the other hand, is situated on the extension of a well-known nodal line setting out into the Atlantic from the Virgin Island in the Lesser Antilles. And all over the Caribbean Sea the time and range of the tide indicate that this sea is affected by the tide-producing attractions of the moon



and sun more as it it were a basin by itself, like Lake Superior, in which the same equilibrium type of tide appears."

It may be added that the tidal range within the Gulf of Panama is increased appreciably by the formation of the gulf, which is that of a reentrant angle. The convergence of water through a wide opening (the mouth of the Gulf, between Cape Mala and the eastern shore of the Gulf, near the Colombian border) into a gulf narrowing toward its upper end, tends to increase the height of the tide. Such a condition is notable in the Bay of Fundy, where the mean tide level is as much as 25 feet above the plane of predictions. (At Colon it is 4 foot).

At Taboga and Balboa, near the head of the Gulf of Panama, the mean tide level is 8.1 feet above the plane of predictions, while at Cape Mala, at the mouth, it is 6.5 feet above. At Buenaventura, Colombia, the mean tide level is 6.6 feet above the plane of predictions, and similarly at Bahia Honda, lying beyond the entrance to the Gulf to the westward, on the coast of the province of Veraguas, Republic of Panama, the height of the mean tide level above the plane of predictions is 5.5 feet. This means that the range of the tide within the Gulf of Panama is about a third greater than the range along the coast not far beyond the mouth of the gulf.

## NOTICE TO MARINERS.

Cape Mala Light Extinguished.

Owing to an accident by fire, the Cape Mala Light is not working and will remain extinguished for a few days until a temporary light can be installed at this place.

The above has been issued as circular No. 643-24, under date of July 3, 1916.

Supplement No. 3 to Circular No. 500-B, Covering Charges for Stevedoring and Transferring Cargo, etc., Issued January 29, 1916, Effective March 1, 1916.

The Panama Railroad Company has issued the following supplement to circular No. 500-B, under date of June 17, 1916:

1. The application of the tariff rates provided for crannage, stevedoring, and freight handling on actual weights has resulted in vouchers being rendered for as little as four cents.

2. Effective July 1, the minimum amount of any receivable voucher for cranaage will be 15 cents, and the minimum for stevedoring or transferring will be 25 cents.

S. W. HEALD,

CHESTER HARDING, *Acting Superintendent.*  
*Second Vice President.*

### Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below. Information concerning the same is posted at clubhouses and post-offices, as per the numbers of the announcements indicated:

Ordnance draftsman (male); \$3.28 to \$7.04 a day; examination July 18, 1916; No. 853.

Dairy husbandman (male); \$1,800 to \$2,500 a year; examination August 8, 1916; No. 878.

An examination will be held for the position of clerk, Panama Canal service, in room 308, Administration Building, Balboa Heights, probably on Sunday, September 10, 1916.

Application forms may be secured from

## STATEMENT OF CANAL EXCAVATION TO JUNE 1, 1916.

"Work" Excavation, including Construction and Maintenance, May, 1916.

<i>Atlantic section—</i>	<i>Cubic yds.</i>
Wet excavation—terminals.....	84,525
<i>Central section—</i>	
Gaillard Cut (including slides).....	1,133,903
<i>Pacific section—</i>	
Wet excavation—Miraflores Lake.....	10,050
Wet excavation—inner harbor.....	19,045
Wet excavation—Pacific entrance.....	19,956
<b>Total.....</b>	<b>1,258,479</b>
Construction "wet".....	122,994
Maintenance "wet".....	1, 35,485
<b>Total.....</b>	<b>1,258,479</b>

### Summary of Wet "Work" Excavation Charged to Maintenance.

By months.	Atlantic entrance	Gaillard Cut	Mt. St. Lake	Pacific entrance	Balboa In. harb.	Total
July 1, 1914, to Dec. 31, 1915.	1,258,016	10,658,771	8,662	74,357		11,999,806
January, 1916.		1,000,000		40,456		1,040,456
February, 1916.		1,039,950		29,181		1,069,131
March, 1916.		1,442,834				1,442,834
April, 1916.		1,847,088		8,622		1,855,710
May, 1916.		1,133,903		1,582		1,135,485
<b>Total.</b>	<b>1,258,016</b>	<b>16,012,233</b>	<b>8,662</b>	<b>154,231</b>	<b>26,900</b>	<b>17,719,058</b>

### Summary of Wet "Work" Excavation Charged to Construction.

Location.	Remaining April 1, 1916.	Remaining May 1, 1916.	Excavated during Month.
Pacific entrance.....	792,671	783,297	9,374
Balboa inner harbor.....	770,550	751,505	19,045
Miraflores Lake.....	265,000	255,550	10,050
Canal to Pedro Miguel.....	1,551,150	1,531,150	20,000
Cristobal coaling station.....	234,424	153,599	84,525
<i>Mile 3-4.....</i>	<i>33,629</i>	<i>33,629</i>	<i>0</i>
<i>Mile 4-5.....</i>	<i>162,486</i>	<i>162,486</i>	<i>0</i>
<i>Mile 5-6.....</i>	<i>135,000</i>	<i>135,000</i>	<i>0</i>
<i>Mile 6-Gatun Locks.....</i>	<i>17,225</i>	<i>17,225</i>	<i>0</i>
<i>Mile 27-28.....</i>	<i>500</i>	<i>500</i>	<i>0</i>
<i>Mile 28-29.....</i>	<i>500</i>	<i>500</i>	<i>0</i>
<i>Mile 29-30.....</i>	<i>50,000</i>	<i>50,000</i>	<i>0</i>
<b>Total.....</b>	<b>4,036,535</b>	<b>3,913,511</b>	<b>122,994</b>

## Canal Excavation to June 1, 1916.

By French companies.....	78,146,960 cu. yds.
French excavation useful to present Canal.....	29,908,000 cu. yds.
By Americans—	
Dry excavation.....	130,378,364
Wet excavation.....	118,117,979
<b>Total.....</b>	<b>448,477,303</b>
May 1 to December 31, 1900.....	248,520,343 cu. yds.
January 1 to December 31, 1905.....	1,799,227
January 1 to December 31, 1906.....	4,948,497
January 1 to December 31, 1907.....	15,765,290
January 1 to December 31, 1908.....	37,427,235
January 1 to December 31, 1909.....	35,096,166
January 1 to December 31, 1910.....	31,437,677
January 1 to December 31, 1911.....	31,603,899
January 1 to December 31, 1912.....	30,529,299
January 1 to December 31, 1913.....	27,177,960
January 1 to December 31, 1914.....	13,640,501
January 1 to December 31, 1915.....	13,222,373
January 1 to May 31, 1916.....	6,109,197
<b>Total.....</b>	<b>248,520,343 cu. yds.</b>

## Deceased Employees.

<i>Name.</i>	<i>Check No.</i>	<i>Native of</i>	<i>Isthmian residence.</i>	<i>Employed by</i>	<i>Date of death.</i>
Richard Amey.....	89380	Barbados.....	Colon.....	P. R. R.....	June 18, 1916
Clarence Gittens.....	22515	Barbados.....	Panama.....	Dredging Div.....	June 17, 1916
Joshua Goodridge.....	73900	Barbados.....	Colon.....	Mar. Eng.....	June 17, 1916
Geo. Robinson.....	25782	Jamaica.....	Panama.....	Mech. Div.....	June 20, 1916
Harold Watson.....	38147	Jamaica.....	Palo Seco.....	Health Dept.....	June 17, 1916

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

the secretary of the local board and must be filled out and filed with this board not later than August 15, 1916.

An application for the position of stenographer and typewriter, Panama Canal service, will be held in the near future, the exact date not known.

Application forms for the stenographer and

typewriter examination may be secured at once and filed with this board as soon as completed.

The approximate date of the stenographer and typewriter examination will appear in a later issue of THE CANAL RECORD.

The manuals for the fall examinations for 1916 are now ready for distribution.

All trains daily except 501, 504, 511, 512, 517, 519, 523, 524, which are discontinued on Saturdays and holidays.  
 \*Commuter fares must be paid before departure and annual passes not accepted for transportation on trains 521, 521, 522, 527, 523, 532, 533, 534, 535, 537, 538, 539, 511, 512, and 543, nor in cars marked "Panama-Fort Grant" on trains 513, 515, 516, and 518.  
 †Day passengers only.  
 Baggage from Balboa steamship connections will be handled on trains 508, 510, and 516.

## RENTAL OF QUARTERS.

Charges for House, Apartment, or Room to Be Paid by Employes.

The monthly charges for rental of quarters to gold employes of The Panama Canal or the Panama Railroad, effective July 1, 1916, are published below. They are arranged by districts, beginning with Ancon-Balboa, and placed in geographical order across the Isthmus, and in each district the houses are grouped as family quarters and bachelor quarters, with special types of house indicated individually. The conditions governing the rental of quarters were set forth in circular No. 627-14, published in THE CANAL RECORD of last week.

## ANCON-BALBOA DISTRICT.

House.	Family Quarters.	Type.	Per apartment.
12	P. R. R.	.....	\$6.00
112	24-Rev.	.....	35.00
104	24-Rev.	.....	35.00
105	24-Rev.	.....	26.00
106	6-Rev.	.....	20.00
108	6-Rev.	.....	20.00
110	17-Rev.	.....	12.50
111	17-Rev.	.....	12.50
114	17-Rev.	.....	12.50
116	15-Rev.	.....	9.00
118	17-Rev.	.....	12.50
120	17-Rev.	.....	12.50
122	17-Rev.	.....	12.50
123	17-Rev.	.....	12.50
125	17-Rev.	.....	12.50
126	17-Rev.	.....	12.50
127	17-Rev.	.....	12.50
128	17-Rev.	.....	12.50
129	17-Rev.	.....	12.50
130	17-Rev.	.....	12.50
132	17-Rev.	.....	12.50
139	22-Rev.	.....	30.00
139a	Servant's quarters	.....	518
141	26-Rev.	.....	50.00
141a	Servant's quarters	.....	524
143	22-Rev.	.....	50.00
143a	Servant's quarters	.....	519
144	20-Rev.	.....	35.00
145	8-Rev.	.....	31.50
148	8-Rev.	.....	31.50
150	17-Rev.	.....	12.50
151	20-Rev.	.....	26.00
153	8-Rev.	.....	31.50
155	20-Rev.	.....	26.00
157	10-Rev.	.....	18.00
159	Governor's residence	.....	55.00
159a	Servant's quarters	.....	561
161	27-Rev.	.....	12.50
201	17-Rev.	.....	9.50
202	Concrete fire station	.....	5.00
211	17-Rev.	.....	18.00
211	21-Rev.	.....	18.00
232	Special	.....	5.00
259	13-Rev.	.....	10.00
261	13-Rev.	.....	10.00
263	13-Rev.	.....	20.00
267	Old French	.....	10.00
269	Old French	.....	6.00
271	Old French	.....	20.00
273	13-Rev.	.....	20.00
275	Old French	.....	20.00
276	Catholic parsonage	.....	8.25
277	17-Rev.	.....	9.50
279	17-Rev.	.....	9.50
281	27-Rev.	.....	10.00
282	17-Rev.	.....	9.50
283	17-Rev.	.....	9.50
285	Old French	.....	10.00
286	Old French	.....	25.00
288	Old French	.....	10.00
288	13-Rev.	.....	50.00
290	13-Rev.	.....	32.00
301	3-Rev.	.....	25.00
303	8-Rev.	.....	25.00
305	8-Rev.	.....	25.00
307	8-Rev.	.....	25.00
309	8-Rev.	.....	26.00
311	25-Rev.	.....	50.00
313	25-Rev.	.....	50.00
315	14-Rev.	.....	6.00
317	14-Rev.	.....	6.00
320	14-Rev.	.....	10.00
321	14-Rev.	.....	10.00
322	19-Rev.	.....	10.00
323	14-Rev.	.....	6.00
324	17-Rev.	.....	9.50
325	17-Rev.	.....	9.50
326	10-Rev.	.....	17.00
327	17-Rev.	.....	9.50
329	17-Rev.	.....	9.50
331	Special	.....	9.50
336	17-Rev.	.....	7.00
337	Post-office	.....	9.00
341	Old French	.....	17.00
343	17-Rev.	.....	9.50
352	17-Rev.	.....	8.00
353	1-Rev.	.....	9.00

358	5-Rev.	7.00	643	15-Rev.	9.00
364	14-Rev.	6.00	644	27-Rev.	12.50
402	23-Rev.	29.00	645	17-Rev.	12.50
404A	.....	10.00	647	17-Rev.	12.50
404B	.....	10.00	607	Parsonage	Privately owned.
406	.....	10.00	711	Concrete	.....
406	.....	8.50	712	Concrete	.....
407	Converted barracks	9.50	713	Concrete	.....
408	.....	9.50	714	Concrete	.....
409	.....	9.50	715	Concrete	.....
410	.....	9.50	716	Concrete	.....
411	.....	9.50	717	Concrete	.....
412	.....	9.50	718	Concrete	.....
413	.....	9.50	719	Concrete	.....
415	Converted barracks	8.50	720	Concrete	.....
417	.....	9.50	741	Concrete	.....
418	Converted barracks	8.50	742	Concrete	.....
419	.....	9.50	743	Concrete	.....
420	Converted barracks	8.50	744	Concrete	.....
421	.....	9.50	745	Concrete	.....
423	Converted barracks	8.50	746	Concrete	.....
424	.....	9.50	748	Concrete	.....
425	.....	9.50	750	Concrete	.....
426	.....	6.00	752	Concrete	.....
427	.....	5.00	754	Concrete	.....
429	Portable	5.00	757	Concrete	.....
430	.....	6.00	758	Concrete	.....
431	Portable	5.00	760	Concrete	.....
433	Portable	5.00	761	Concrete	.....
436	.....	8.02	762	Concrete	.....
449	Special	4.00	763	Concrete	.....
451	.....	9.00	764	Concrete	.....
454	.....	9.50	767	Concrete	.....
456	.....	7.69	769	Concrete	.....
458	.....	8.25	771	Concrete	.....
460	.....	8.25	773	Concrete	.....
501	Converted barracks	6.00	777	Concrete	.....
502	.....	6.00	779	Concrete	.....
503	.....	6.00	780	Concrete	.....
505	.....	6.00	782	Concrete	.....
506	.....	6.00	783	Special	A, B 7.00; C, D \$8
507	.....	6.00	784	Concrete	.....
508	.....	6.00	785	Concrete	.....
509	.....	6.00	786	Concrete	.....
510	.....	6.00	787	Concrete	.....
511	.....	6.00	789	Concrete	.....
512	Converted barracks	6.00	790	Concrete	.....
513	Converted barracks	6.00	791	Concrete	.....
514	Converted barracks	6.00	793	Concrete	.....
517	Converted barracks	6.00	794	Concrete	.....
517	Portable	5.00	796	Concrete	.....
518	Portable	5.00	798	Concrete	.....
520	Portable	5.00	799	Concrete	.....
521	Portable	5.00	800	Old radio station	.....
524	5-Rev.	7.00	802	Post-office	.....
526	Converted barracks	6.00	811	14-Rev	7.00
526	Portable	5.00	812	14-Rev	7.00
528	Converted barracks	6.00	813	14-Rev	7.00
530	Converted barracks	6.00	814	14-Rev	7.00
532	Converted barracks	6.00	815	14-Rev	7.00
534	Converted barracks	6.00	816	14-Rev	7.00
537	Converted barracks	6.00	817	14-Rev	7.00
539	Converted barracks	6.00	818	14-Rev	7.00
541	Converted barracks	6.00	819	14-Rev	7.00
541	Converted barracks	6.00	820	14-Rev	7.00
549	Converted asylum	8.00	821	14-Rev	7.00
561	Converted asylum	8.00	822	14-Rev	7.00
563	Converted asylum	8.00	824	14-Rev	7.00
564	Converted asylum	8.00	826	14-Rev	7.00
568	Converted asylum	7.00	827	14-Rev	7.00
569	Converted asylum	8.00	828	14-Rev	7.00
570	Converted asylum	9.50	847	8-Rev	25.00
571	Converted asylum	9.00	848	19-Rev	10.00
572	Converted asylum	9.00	850	19-Rev	10.00
574	Converted asylum	8.00A-7.00B	853	14-Rev	6.00
575	Converted asylum	7.00	854	14-Rev	6.00
576	Converted asylum	8.00A-7.00B	856	14-Rev	6.00
580	Converted barracks	6.00	857	14-Rev	6.00
582	Converted barracks	10.00	1054	.....	5.00
584	Converted barracks	7.00	1055	.....	5.00
587	17-Rev.	12.50	1056	.....	5.00
586	14-Rev.	6.00	1059	.....	5.00
587	11-Rev.	12.50	1060	.....	5.00
588	14-Rev.	7.00	1061	.....	5.00
590	17-Rev.	7.00	1062	.....	5.00
592	17-Rev.	12.50	1063	.....	5.00
593	17-Rev.	12.50	1065	.....	5.50
594	17-Rev.	12.50	.....	.....	.....
595	17-Rev.	12.50	.....	.....	.....
596	17-Rebuilt	11.00	No. 496X	.....	2.00
598	.....	11.00	No. 056X	.....	2.00
599	4-Rev.	13.00	No. 056X	.....	2.00
600	4-Rev.	13.00	No. 112	.....	2.00
601	4-Rev.	13.00	.....	Old fire station	2.00
604	4-Rev.	13.00	352	Old French	8.00
608	4-Rev.	13.00	.....	Quarantine Station	.....
610	4-Rev.	13.00	1360	10-Rev.	20.00
611	4-Rev.	13.00	1061	17-Rev. special	10.00
612	4-Rev.	13.00	1062	17-Rev.	12.50
614	17-Rev.	12.50	1301	(Entire house)	45.00
615	4-Rev.	13.00	.....	Coronal	.....
616	27-Rev.	12.50	79	14-Rev.	6.00
617	4-Rev.	13.00	540	17-Rev.	9.50
618	Converted barracks	6.00	541	17-Rev.	9.50
619	Converted barracks	6.00	541	10-Rev.	17.00
620	Converted barracks	6.00	545	17-Rev.	12.50
621	Converted barracks	6.00	546	17-Rev.	9.50
622	Converted barracks	6.00	.....	Bachelor Quarters	.....
624	Converted barracks	6.00	203	Nurses' quarters	*Nurses, \$3 per bed; girl bachelors, \$1.50 per bed.
626	Converted barracks	6.00	.....	.....	.....
628	Concrete	16.00	217	Doctors' quarters	.....
630	Concrete	16.00	.....	.....	.....
632	Concrete	16.00	.....	.....	.....
634	Special	8.00	.....	.....	.....

\*\$10.00 if house is modified.

†\$15 for end rooms on second and third floors; \$4.50 for remaining rooms on second and third floors; and \$2 per bed on first floor.



[illegible]

23	17	9.50	1406	French	4.50
24	17	9.50	1407	French	4.50
208	27	10.00	1409	French	4.50
70	P. C.	7.00	1411	French	4.50
117	P. C.	10.00	1412-A	French	7.25
121	P. C.	7.00	1412-B	French	8.00
164	P. C.	7.00	1413-A	French	5.50
177	P. R. R.	6.00	1413-B	French	5.50
196	P. R. R.	10.00	1413-D	French	5.50
259	P. C.	5.50	1414-A	French	9.00
63	18	5.00	1414-B	French	10.00
64	18	5.00	1500	P. C.	4.50
<i>Monte Lirio.</i>					
133	P. R. R. railroad station	4.00	1511	French	4.50
135	P. R. R. section house	4.00	1605	P. R. R.	5.75
227	P. R. R. section house, Frijoles	8.01	1607	P. R. R.	5.50
134	Police station (per bed)	2.00	1608	P. R. R.	5.50
<i>Bachelor Quarters.</i>					
4	5 (per room)	5.40	1610	14	5.50
6	5 (per room)	5.40	1612	14	5.50
9	5 (per room)	5.40	1613	14	5.50
61	5 (per house)	24.00	1709	14	5.50
140A	14 (per bed)	*1.50	1710	14	5.50
67	Police station (per bed)	2.00	1712	14	5.50
183	Fire station (per bed)	7.00	1713	14	5.50
163	School (per bed)	*1.50	1720	14	5.50
<i>*Girls.</i>					
<b>CRISTOBAL.</b>					
<i>Family Quarters.</i>					
		Per apart-			
100	P. C.	5.00	1812	14	5.50
202	P. C.	12.50	1814	14	5.50
204	P. C.	15.00	1816	14	5.50
206	P. C.	12.50	1818	14	8.00
208	P. C.	30.00	1901	French	4.50
210	13	21.75	1903	French	4.50
312	14	6.00	1905	French	4.50
314	French	11.75	1907	French	4.50
400	P. R. R.	6.00	1922	P. R. R.	9.00
401	P. R. R.	8.50	5130	Social	6.00
404	P. R. R.	6.00	7039	15	10.00
406	P. R. R.	8.75	7041	P. R. R.	6.00
408	P. R. R.	8.75	7045	P. R. R.	6.00
410-B	P. R. R.	26.00	7057	14	6.00
412	P. R. R.	9.50	7058	27	10.00
414	P. R. R.	7.50	027	(3) Box cars	4.00
416	P. R. R.	8.75	030		
418	P. R. R.	9.75	370		
420	P. R. R.	20.00	056X	(1) Box cars	3.00
422-A	P. R. R.	13.50	551	(2) Box cars	3.00
422-B	P. R. R.	10.00	312-B		
422-C	P. R. R.	10.00	312-D		
434	P. R. R.	9.50	506	P. R. R.	(T)
501	P. R. R.	6.00	509	P. R. R.	*1.50
503	P. R. R.	6.00	518	P. R. R.	5.40
509	P. R. R.	6.50	1094	P. C.	*2.00
510	P. R. R.	6.00	1101	French	*2.00
514	P. R. R.	5.00	1105	French	*2.00
570	P. R. R.	11.00	1109-B	French	*2.00
601	P. R. R.	7.00	1113-A	French	*2.00
602	P. R. R.	7.50	1203	P. C.	4.25
604	P. R. R.	8.50	1303	5	5.40
605	P. R. R.	7.50	1407-A	French	*2.00
608	P. R. R.	7.50	1412-B	French	*2.00
706	P. R. R.	6.50	1501	P. C.	4.50
708	P. R. R.	6.50	1503	P. C.	*2.00
710	P. R. R.	6.50	1512-A	French	*2.00
800-A	P. R. R.	6.00	1513-C	French	*2.00
800-D	P. R. R.	6.00	1604	P. C. (Y. M. C. A.)	3.00
800-E	P. R. R.	11.00	1608-A	14	*2.50
800-F	P. R. R.	10.00	1608-D	14	*2.50
804	P. R. R.	13.70	1705	18	4.00
806	P. R. R.	47.01	1711	18	4.00
806	P. R. R.	47.00	1713	18	4.00
807	P. R. R.	10.05	1715	18	4.00
901	P. R. R.	7.00	1802	P. R. R.	4.00
1000	P. R. R.	11.00	1804	P. R. R.	4.00
1032	P. R. R.	7.00	1806	P. R. R.	4.00
1063	French	10.00	1810	P. R. R.	4.00
1005	French	9.00	5065	P. C.	4.00
1067	French	9.00	7000	P. C.	3.00
1009	French	8.00	7018	P. C.	*2.00
1011	French	8.00			
1015	French	9.00			
1017	French	9.00			
1019	French	9.00			
1021	20	21.50			
1023	1	3.00			
1035-A	French	9.00			
1035-B	French	10.75			
1027	A	28.75			
1105	French	6.75			
1107	French	6.75			
1109	French	6.75			
1111-A	French	6.75			
1113	French	6.75			
1115	20	22.00			
1201	French	7.75			
1207	French	7.75			
1209	French	7.75			
1211	French	10.25			
1215-A	French	9.00			
1215-B	French	7.75			
1217	1	5.00			
1219-B	1	8.00			
1305	French	8.00			
1307-A	1	4.75			
1309	14	5.50			
1311	1	8.00			
1313	1	8.00			
1315	1	8.00			
1402	Special	9.00			
1404	French	4.50			

## Sallings of the "Colon" and the "Advance."

## THE PANAMA CANAL.

## EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., June 29, 1916.

To all concerned.—The steamship *Colon*, which was scheduled to sail from Cristobal on July 13, is undergoing repairs in the States which will prevent her arrival at the Isthmus in time to leave here before July 20, and in order that the weekly schedule may be maintained, the steamship *Advance* will take her place in sailing from Cristobal on July 13. Employees who have already forwarded their applications to this office for transportation on the steamship *Colon*, which was scheduled to sail July 13, will be considered as desiring transportation on the steamship *Advance*, unless this office is advised promptly that transportation is desired for July 20 or another date.

Preference for assignment on the steamship *Advance* will be given to persons who were originally booked for the steamship *Colon*.

Accommodations are still available on the steamship *Alfonso*, which sails from Cristobal July 6.

C. A. McILVAINE, Executive Secretary.

## Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 304, on Wednesday, July 12, 1916, beginning promptly at 8 a. m., for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the board, room No. 211, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeur licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration test for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination, as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gatun, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa shall present themselves at the office of the Captain of the Port; at Gatun, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examination for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, July 14, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

GEO. J. VANDERSLICE,

Recorder, Board of Local Inspectors.

## Misdirected Letters.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be obtained upon request of the addressees. Requests may be made by telephone, calling Balboa, No. 182: \*Bradley, Chas. W. McGlothlin, J. C. Buchanan, Johnathan Butler, Capt. J. H. Carter, C. E. A. Chambers, Joseph Ely, Harry Hansen, Glaf Harries, Miss Pauline Havers, Miss Aureta \*Puper.

## Maximum Stages of the Chagres River, Gatun Lake and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, July 1, 1916:

DAY AND DATE.	STATIONS.				
	Vigia	Alhajuela	Gatun Lake	Miraflores Lake	
Sun., June 25	128.55	93.34	85.86	46.54	14.27
Mon., June 26	127.26	92.06	84.57	45.34	13.02
Tues., June 27	126.56	92.06	84.57	45.34	13.02
Wed., June 28	127.05	93.20	86.38	46.40	14.20
Thurs., June 29	127.00	93.12	86.38	46.45	14.09
Fri., June 30	126.90	92.96	86.40	46.45	14.09
Sat., July 1	126.24	92.53	86.40	46.35	14.05

Height of low water to nearest foot 125 0 91 0

## OFFICIAL CIRCULARS.

## Payment of Rent, in Relation to Release from Quarters.

## THE PANAMA CANAL.

## ACCOUNTING DEPARTMENT.

BALBOA HEIGHTS, C. Z., July 1, 1916.

To district quartermasters and others concerned.—The following instructions issued by this office under date of March 13, 1915, are brought to your attention:

Hereafter in issuing release from quarters as required by circular No. 675-1 as amended by circular No. 675-2, such release should be given "Subject to payment of rent", unless the party to whom the release is given shall present to the district quartermaster a receipt showing the payment of rent up to the date of the release from quarters, and in such case notation should be made on the release that "Rent has been paid to....."

AD. FAURE,

Acting Auditor, The Panama Canal.

## COMMISSARY DEPARTMENT.

## Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, July 6, 1916:

FISH.	Price.
Fresh fish, per lb.	\$0.12
Turtle (wt. 100 to 200 lbs.), per lb.	.07
FRUITS.	
Coconuts, dry, ea.	.04
Coconuts, water, ea.	.05
Pineapples, ea.	.08
Sugar cane, ea.	.03
Plantain, ea.	.01
Mangos, medium, ea.	.01
Mangos, large, ea.	.02
Papaya, per lb.	.02
VEGETABLES.	
Celery, soup, per bunch.	.04
Ginger, per lb.	.05
Mint, per bunch.	.04
Onion, ea.	.00
Onions, green, per bunch.	.04
Parsley, per bunch.	.02
Radishes, per bunch.	.04
Spinach, per bunch.	.02
Squash, per lb.	.03
Tomatoes, per lb.	.04
Chayotes, each.	.03
Corn, green, per doz.	.18

\*Indicates advance from last list.

†Indicates reduction from last list.

## Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective June 22:

ARTICLE.	Old.	New.
Ribbon, yd.	\$0.12	\$0.18
Ribbon, yd.	.17	.21
Ribbon, yd.	.22	.29
Robes, bath, ea.	3.00	3.35
Serge, cream, yd.	1.70	2.05
Soap, bay rum, cake.	.07	.08
Ties, ea.	.35	.30
Ties, ea.	.17	.19
Towels, ea.	.16	.18
Voile, yd.	.18	.21
Voile, yd.	.37	.41
EFFECTIVE JULY 1, 1916.		
Oil, salad, 1-gal tin.	.53	.66
Oil, salad, 1-gal tin.	.95	1.20
Oil, salad, 5-gal. tin.	3.90	5.75

## Additions to Stock.

Pipes, briar, silver mounted, ea.	\$2.25
Polish, floor "Aromatic mist," 1-gal. tin.	1.10
Atomizers, for "Aromatic mist," ea.	.38
Steuvenville China, No. 3485:	
Boats, gravy, with tray, ea.	.90
Cups, egg, single, ea.	.16
Cups and saucers, after dinner, set.	.28
Cups and saucers, tea, set.	.28
Cups and saucers, breakfast, set.	.32
Dishes, bakers, 8", ea.	.32
Dishes, bakers, 10", ea.	.38
Dishes, vegetable, covered, 7", ea.	1.55
Dishes, butter, covered, ea.	1.15
Dishes, oatmeal, ea.	.23
Dishes, pickle, ea.	.38
Men's white duck oxfords, pr.	4.40
Jelly, guava, 14-oz. jar.	.23
Egg powder (Eggs), 2-oz. tin.	.28
Butter, apple, Heinz, 7-oz. can.	.56
Blouses, middie, red collar, ea.	1.30
Cards, place (dinner), box of six.	.11
Cloth, gaberline, white, yd.	.27
Embroidery, barmen, yd.	.04
Embroidery, tarmen, yd.	.04
Favors, dinner, ea.	.09
Lace, val, edging, yd.	.04
Lace, val, edging, yd.	.04
Lace, val, edging, yd.	.06
Lace, val, edging, yd.	.07
Lace, val, insertion, yd.	.04
Lace, val, insertion, yd.	.05
Lace, val, insertion, yd.	.06
Lace, val, insertion, yd.	.07
Lace, white net, yd.	.27
Lace, white net, yd.	.33
Lace, fancy cotton, yd.	.28
Lace, fancy shadow, yd.	.25
Linen, handkerchief, 6-qt., ea.	.19
Rompers, girls', Alfameeds, ea.	.43
Suiting, linen finish, yd.	.20
Saucers, enamel, 6-qt., ea.	.63
Brushes, varnish, bristle, 1 1/2", ea.	.15
Brushes, sauce, with stand, ea.	2.30
Platters, chop, ea.	5.60
Trunks, fibre, high, 36", ea.	10.13
Cases, leather, for coupon books.	.30
Hose, children's, pr.	.13
Ribbon, fancy, No. 100, yd.	.52
Cups, drinking, white enamel, ea.	.14
Anchovies in oil, bot.	.27
Crab, devilled, tin.	.23
Vinegar, taragon, Heinz, qt. bot.	.34
Vinegar, spiced malt, Heinz, qt. bot.	.34
Oil, olive, Pompeian, qt. tin.	.34

## SHIPPING INFORMATION.

Tide Predictions, Port of Balboa.  
Panama (Balboa) tide predictions for the next six weeks are given in this table:

JULY.				
DATE.	Time and height of high and low water.			
Wed., July 5.....	0:36 1.5	6:50 12.9	12:59 2.5	18:57 13.5
Thurs., July 6.....	1:11 2.0	7:22 13.8	13:30 2.9	19:32 13.1
Fri., July 7.....	1:49 2.5	7:56 13.6	14:24 3.2	20:12 12.6
Sat., July 8.....	2:33 3.1	8:37 13.3	15:15 3.4	21:00 12.1
Sun., July 9.....	3:25 3.5	9:27 13.1	14:16 3.5	22:02 11.8
Mon., July 10.....	4:25 3.8	10:31 13.0	17:19 3.4	23:17 11.9
Tues., July 11.....	5:34 3.8	11:44 13.3	18:28 2.8	.....
Wed., July 12.....	0:31 12.4	6:46 13.4	12:54 13.9	19:34 1.9
Thurs., July 13.....	1:36 13.3	7:53 13.5	13:56 14.8	20:33 0.7
Fri., July 14.....	2:35 14.5	8:52 1.3	14:57 15.6	21:26 -0.5
Sat., July 15.....	3:30 15.5	9:45 0.2	15:47 16.4	22:14 -1.4
Sun., July 16.....	4:23 16.4	10:34 -0.6	16:39 16.8	23:00 -1.9
Mon., July 17.....	5:14 17.0	11:21 -1.0	17:31 16.9	23:45 -1.9
Tues., July 18.....	6:02 17.2	12:07 -0.9	18:20 16.6	.....
Wed., July 19.....	0:30 -1.4	6:49 17.0	12:56 17.4	19:06 15.9
Thurs., July 20.....	1:16 -0.5	7:34 16.3	13:45 0.5	19:53 1.9
Fri., July 21.....	2:06 0.8	8:19 15.3	14:37 1.5	20:42 13.1
Sat., July 22.....	2:58 2.0	9:08 14.0	15:32 2.5	21:36 12.5
Sun., July 23.....	3:55 3.2	10:03 13.1	16:32 3.4	22:44 11.7
Mon., July 24.....	4:56 4.1	11:01 12.3	17:36 3.9	.....
Tues., July 25.....	0:00 11.2	6:02 11.6	12:21 12.0	18:43 4.0
Wed., July 26.....	1:12 11.3	7:09 11.6	13:25 12.2	19:46 3.6
Thurs., July 27.....	2:09 11.8	8:07 11.4	14:17 12.6	20:39 2.9
Fri., July 28.....	2:56 12.3	8:57 11.3	15:01 13.1	21:21 2.2
Sat., July 29.....	3:37 13.0	9:39 11.6	15:41 13.6	22:00 1.5
Sun., July 30.....	4:14 13.5	10:17 12.2	16:18 14.0	22:34 1.0
Mon., July 31.....	4:48 14.0	10:52 1.7	16:53 14.3	23:07 0.8
AUGUST.				
DATE.	Time and height of high and low water.			
Tues., Aug. 1.....	5:21 14.4	11:26 1.5	17:28 15.4	23:39 0.8
Wed., Aug. 2.....	5:52 14.6	12:00 1.4	18:01 14.4	.....
Thurs., Aug. 3.....	0:11 1.0	6:22 14.2	12:33 1.5	18:33 14.2
Fri., Aug. 4.....	0:44 1.3	6:52 14.6	13:09 1.8	19:07 13.9
Sat., Aug. 5.....	1:18 1.8	7:24 14.5	13:49 2.2	19:44 13.4
Sun., Aug. 6.....	2:00 2.4	8:02 14.1	14:37 2.7	20:27 12.8
Mon., Aug. 7.....	2:48 3.1	8:49 13.6	15:34 3.2	21:23 12.2

DATE.	Time and height of high and low water.			
Tues., Aug. 8.....	3:49 3.7	9:50 13.1	16:42 3.4	22:39 11.9
Wed., Aug. 9.....	5:01 4.0	11:01 13.0	17:58 3.1	.....
Thursday, Aug. 10.....	0:04 12.2	6:20 13.2	12:32 13.4	19:11 2.3
Fri., Aug. 11.....	1:18 13.2	7:33 13.2	13:41 14.3	20:15 1.1
Sat., Aug. 12.....	2:20 14.4	8:38 1.4	14:41 15.3	21:09 -0.2
Sun., Aug. 13.....	3:15 15.6	9:31 0.2	15:35 16.1	21:57 -1.2
Mon., Aug. 14.....	4:06 16.6	10:19 -0.8	16:26 16.7	22:42 -1.8
Tues., Aug. 15.....	4:55 17.3	11:04 -1.3	17:15 16.9	23:25 -1.8
Wed., Aug. 16.....	5:40 17.1	11:47 -1.3	18:01 16.6	.....

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 6.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus ( ) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 12 (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Rainfall from June 1 to 30, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
Pacific Section—			
Balboa.....	Ins.	72	8 3.95
Balboa Heights.....	Ins.	69	10 4.39
Miraflores.....	Ins.	123	15 5.62
Pedro Miguel.....	Ins.	137	15 6.42
Rio Grande.....	Ins.	208	15 8.67
Central Section—			
Culebra.....	Ins.	150	8 7.56
Camacho.....	Ins.	150	24 7.12
Empire.....	Ins.	116	24 7.03
Cambao.....	Ins.	149	22 8.44
Juan Mina.....	Ins.	92	14 6.91
Alhajuela.....	Ins.	246	7 & 13 14.00
Avila.....	Ins.	281	8 13.53
Frijoles.....	Ins.	180	8 8.02
Trinidad.....	Ins.	161	13 7.50
Monje Lirio.....	Ins.	360	8 11.81
Atlantic Section—			
Gatun.....	Ins.	233	8 10.60
Brazos Brook.....	Ins.	216	8 13.21
Colon.....	Ins.	310	23 14.28
Hobaca del Rio.....	Ins.	113	13 6.46

\*Standard rain gage—readings at 5 p. m. daily.  
Automatic rain gage at unstarred stations—values midnight to midnight.

†Standard rain gage—readings at 8 a. m. daily.

## Fuel Oil.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.65 at Cristobal and \$1.40 at Balboa. Prices from the corporations may be obtained on application to them.

## Sailings of Vessels in Regular Service with the

NEW YORK TO CRISTOBAL-COLON.				
Vessel.	Line.	Sails.	Arrives.	
Carrillo.....	U. F. C.	June 28.....	July 5	
Adams.....	P. R. R.	June 29.....	July 6	
Tenadores.....	U. F. C.	July 1.....	July 9	
Santa Maria.....	U. F. C.	July 5.....	July 12	
Metapan.....	U. F. C.	July 8.....	July 17	
Alvarado.....	U. F. C.	July 12.....	July 19	
Colon.....	P. R. R.	July 13.....	July 19	
Pastores.....	U. F. C.	July 15.....	July 23	
Zacapa.....	U. F. C.	July 19.....	July 26	
Altamira.....	P. R. R.	July 20.....	July 26	
CRISTOBAL-COLON TO NEW YORK.				
Alliance.....	P. R. R.	July 6.....	July 12	
Zacapa.....	U. F. C.	July 6.....	July 13	

(Continued on page 396.)



## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., July 2, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	Cargo		Canal Tonnage	
						Nature	Tons	Gross	Net
June 26....	Ribera.....	British.....	Bolton Steam Shipping Co. Ltd.	Cardiff.....	Equinault.....	Coal.....	4,880	3,798	2,782
June 26....	Bellirano.....	British.....	Bellirano Steam Co. Ltd.	New York.....	Chilean ports.....	General.....	7,010	5,101	3,587
June 26....	Imperial.....	Chilean.....	South American Steamship Co.	Cristobal.....	Viharaiso.....	General.....	1,426	3,621	2,397
June 26....	Yorkmar.....	British.....	Moor Line, Ltd.....	New York.....	Villavieja.....	General.....	6,430	5,512	3,990
June 27....	Kangaroo.....	British.....	Western Australian Government.	New York.....	Brisbane.....	Coke oil.....	6,010	4,634	3,204
June 28....	D.V.I.....	Dutch.....	Rotterdamse Lloyd Line.....	New York.....	Hongkong.....	Coke oil.....	8,011	6,862	4,769
June 28....	Lewisham.....	British.....	Britain S. S. Company, Ltd.....	Baltimore.....	Guaymas.....	Coke.....	3,283	3,021	2,103
June 29....	Salvador.....	British.....	Pacific Steam Niv. Co.....	Cristobal.....	Sulina Cruz.....	General.....	175	1,091	692
June 29....	Nissei Maru.....	Japanese.....	Okazaki Kisen Kabushiki Kisha.	New Orleans.....	Tifal.....	Ballast.....	.....	3,236	2,319
June 30....	Columbia.....	Danish.....	East Asiatic Co.....	New York.....	Chefa.....	Coke oil.....	9,200	7,379	5,650
June 30....	Sherman.....	American.....	American Smelters S. S. Co.	Baltimore.....	Calera.....	General, coke.....	6,800	4,937	3,512
June 30....	Saint Andres.....	British.....	British & Foreign S. S. Co.	Newport News.....	Antofagasta.....	Coal.....	7,433	5,526	3,913
July 1....	San Juan.....	American.....	Pacific Mail Steamship Co.....	Cristobal.....	San Francisco.....	General.....	.....	2,369	1,578
July 1....	Peru.....	British.....	Pacific Steam Nav. Co.....	Cristobal.....	Guayaquil.....	General.....	885	4,038	2,626
July 1....	Thurland Castle.....	British.....	James Chambers & Co.....	Norfolk.....	Antofagasta.....	Coal.....	7,036	5,222	3,762
July 1....	Tiberia.....	Japanese.....	Toyoko Kisen Kaisha.....	New York.....	Villavieja.....	General.....	6,579	12,234	5,945
July 2....	Tiberia.....	British.....	Anchor Line.....	Baltimore.....	Guayaquil.....	Coal.....	6,994	5,270	3,863
July 2....	Thode Pageland.....	Norwegian.....	Wilhelmsen Dampsk. Akties.....	Fulla Jethia.....	Lyndis.....	Ballast.....	.....	4,758	3,586
July 2....	Themis.....	Norwegian.....	Wilhelmsen Dampsk. Akties.....	New York.....	Singai.....	General.....	10,550	8,566	5,939
July 2....	Monitor (launch).....	American.....	Robert Houston.....	Cristobal.....	Gtun Lake.....	.....	.....	11	11

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

June 26....	California (yacht).....	American.....	H. R. Stockler.....	San Diego.....	Guantanamo.....	Ballast.....	.....	299	141
June 26....	San Juan.....	American.....	Pacific Mail S. S. Co.....	San Francisco.....	Colon.....	General.....	350	2,369	1,578
June 26....	John A. Hooper.....	American.....	Sudden & Christensen.....	Antofagasta.....	New Orleans.....	Nitrates.....	2,900	2,628	1,713
June 26....	Salvador.....	British.....	Pacific Steam Nav. Co.....	Salina Cruz.....	Colon.....	General.....	266	1,191	682
June 27....	Peru.....	British.....	Pacific Steam Nav. Co.....	Cornel.....	Colon.....	Copper, general.....	795	4,038	2,626
June 27....	Ucayali.....	Peruvian.....	Peruvian Steamship Co.....	Callao.....	Colon.....	General.....	2,012	4,278	2,406
June 28....	Orizaba.....	British.....	Corn Steamship Company.....	Pragua.....	Norfolk.....	Nitrates.....	7,100	5,663	4,141
June 28....	Flarentino.....	British.....	Polezath Steamship Co.....	Taitai.....	Colon (orders).....	Nitrates.....	5,400	3,859	2,838
June 28....	Aysen.....	Chilean.....	South American S. S. Co.....	Valparaiso.....	Colon.....	General.....	789	4,593	3,042
June 29....	Cauca.....	British.....	Pacific Steam Nav. Co.....	Guayaquil.....	Colon.....	General.....	1,036	1,557	998
June 30....	Caspian.....	British.....	Nelson, Donlin & Co.....	Tecapilla.....	Newport News.....	Nitrates.....	5,115	3,689	2,693
June 30....	Ocean Monarch.....	British.....	Monarch Steamship Co.....	Iquique.....	Colon (orders).....	Nitrates.....	6,300	4,708	3,447
July 1....	Poeldijk.....	Dutch.....	Holland American Line.....	Calita Coloso.....	Colon (orders).....	Nitrates.....	6,429	4,656	3,392
July 1....	Gagan Maru.....	Japanese.....	Hashimoto Kisen K. K.....	Iquique.....	Colon (orders).....	Nitrates.....	4,700	3,488	2,589
July 2....	Jamaica.....	British.....	Pacific Steam Nav. Co.....	Tamaco.....	Colon.....	General.....	166	1,170	620
July 2....	Jason.....	British.....	Ocean Steamship Co.....	Iquique.....	Colon (orders).....	Nitrates.....	8,161	7,537	5,408
July 2....	Tenasserim.....	British.....	Brit. & Burmes. Stm. Nav. Co.	Iquique.....	Colon (orders).....	Potash, nitrates.....	6,509	5,729	4,148

## ARRIVALS AND EXPECTED ARRIVALS FROM ATLANTIC.

June 24....	Sorata.....	Pacific Steam Nav. Co.....	Norfolk.....	July 2....	Booth.....	American-Australian Line.....	New York.
June 25....	City of Durham.....	Norton Lilly & Co.....	New York.				

## EXPECTED ARRIVALS FROM PACIFIC.

.....	Mathilda.....	Acties Mathilda S. S. Co.....	Chilean ports.	July 3....	Anya Maru.....	Toyoko Kisen Kabushiki K.....	Chilean ports.
.....	Eller.....	Chilean Steamship.....	Chilean ports.	July 8....	Capas.....	New York-Pacific S. S. Co.....	Chilean ports.
.....	Haukabo.....	Port Steamship Co.....	Chilean ports.	July 11....	South Pacific.....	Pacific Shipping Co.....	Chilean ports.
.....	Kaliba.....	Clyde Steamship Co.....	Chilean ports.	July 11....	Inverkip.....	Inverkip Steamship Co.....	Chilean ports.
July 3....	Guernsey.....	With. Wilhelmsons.....	Chilean ports.	July 16....	Jersey City.....	W. R. Smith & Sons.....	Chilean ports.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

Date	Vessel	Line	From
June 28....	Kilpatrick.....	United States Army.....	New York.
July 1....	Cavina.....	Elders & Fyffes.....	Port Limon.
July 2....	Fagersand.....	A. Fagersand.....	Mandinga Bay.

## \*DEPARTURES.

Date	Vessel	Line	For
June 29....	Itasca (cutter).....	U. S. Treasury Dept.....	Havana, Cuba.
July 30....	Perou.....	French Line.....	Saint Nazaire.
July 1....	Fagersand.....	A. Fagersand.....	New York.
July 1....	Cavina.....	Elders & Fyffes.....	Bristol.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS

June 26....	Alicia.....	Panama Trading Co.....	Camp Sabbath.
July 29....	Alicia.....	Panama Trading Co.....	Camp Sabbath.

## DEPARTURES.

June 26....	Alicia.....	Panama Trading Co.....	Camp Sabbath.
June 30....	Alicia.....	Panama Trading Co.....	Camp Sabbath.

\*Other than ships passing through the Canal.

(Continued from page 395.)

## NEW ORLEANS TO CRISTOBAL-COLON.

Calamares.....	U. F. C. July 10....	17	Turrialba.....	U. F. C. July 1....	8	Heredia.....	U. F. C. July 9....	14
Carrilla.....	U. F. C. July 13....	20	Parismina.....	U. F. C. July 5....	10	Turrialba.....	U. F. C. July 9....	17
Tenadores.....	U. F. C. July 17....	24	Aienas.....	U. F. C. July 8....	15	Parismina.....	U. F. C. July 16....	21
Advance.....	P. R. R. July 20....	27	Cartago.....	U. F. C. July 12....	17	Parismina.....	U. F. C. July 16....	24
Santa Maria.....	U. F. C. July 20....	27	Abanegares.....	U. F. C. July 15....	22	Cartago.....	U. F. C. July 23....	28
Metapan.....	U. F. C. July 24....	Aug 1	Heredia.....	U. F. C. July 19....	24	Abanegares.....	U. F. C. July 23....	31
Colon.....	P. R. R. July 27....	Aug 2	Turrialba.....	U. F. C. July 22....	29	Heredia.....	U. F. C. July 30....	Aug 4
Almirante.....	U. F. C. July 27....	Aug 3	Parismina.....	U. F. C. July 26....	31	Turrialba.....	U. F. C. July 30....	Aug 7



## The Canal Record

Official publication of The Panama Canal.

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THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Excavation from the Cut during the Fiscal Year.

Excavation from the Gaillard Cut during the month of June amounted to 1,069,536 cubic yards. Of this quantity, 1,056,428 cubic yards were removed from the Culebra slides and 13,108 cubic yards were excavated in miscellaneous work of maintenance at other points in the Cut. Of the total, 999,680 cubic yards were classified as rock and 69,856 cubic yards as earth. In addition to the primary excavation, referred to above, the dredges rehandled 102,191 cubic yards in the course of disposing of it.

Including the work in June, which completes the fiscal year, the total excavation in the Cut for the year was 11,660,351 cubic yards. Of this, 10,280,371 cubic yards were removed from the Culebra slides; and as between earth and rock, the quantities were 1,637,985 cubic yards of earth and 10,022,366 cubic yards of rock.

The excavation from the Cut during the fiscal year was an average of 971,696 cubic yards per month, or 31,922 per day.

#### Excavation from Cut during One Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, July 3, amounted to 229,420 cubic yards. The dredges also rehandled 32,515 cubic yards of the spoil in disposing of it, but these figures are not included in the totals, which are for primary excavation and represent decrease of material in the Canal prism.

The output of the several dredges during the week was as follows:

Dredge.	Type.	Yardage.
Casadas.....	15-yard dipper.....	75,550
Gambou.....	15-yard dipper.....	64,560
Paraiso.....	15-yard dipper.....	63,720
Corozal.....	Ladder.....	1,790
No. 84.....	Ladder.....	8,725
No. 86.....	Ladder.....	37,515
No. 1.....	Ladder.....	13,075

The ladder dredge Corozal was out of service during the week, except for a small part of the first day, undergoing repairs in dry dock.

The aggregate of primary excavation from the bases of the Culebra slides since October 14, 1914, when rush work was begun by the Dredging Division in the sections north of Gold and Contractor's Hills, to the hour of midnight on July 2, 1916, has amounted to 15,439,896 cubic yards. This has been an average of 748,392 cubic yards per month, or 24,586 cubic yards per day.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, July 10, amounted to 233,274 cubic yards. Rehandled spoil, not counted in the totals, amounted to 23,473 cubic yards.

The output of the several dredges during the past week was as follows:

Casadas.....	15-yard dipper.....	61,619
Gambou.....	15-yard dipper.....	68,255
Paraiso.....	15-yard dipper.....	76,130
Corozal.....	Ladder.....	17,895
No. 81.....	Ladder.....	1,900
No. 84.....	Pipeline suction.....	7,475
No. 86.....	Pipeline suction.....	23,473
Culebra.....	Seagoing suction.....	.....

#### Sale of 95 Retired Locomotives.

Sealed proposals for the purchase of 95 retired locomotives of various classes will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10.30 a. m., August 23, 1916. Circular 1057, giving full information, form of contract, bond, etc., may be obtained upon application to the Chief Quartermaster.

#### Suction Dredge Passes through the Canal for San Francisco.

A new suction dredge, the *San Pablo*, built at Baltimore for use by the War Department at San Francisco, arrived at Cristobal on July 8 and entered the Canal for transit on the following day. The dredge is traveling under her own steam. After taking 1,600 barrels of fuel oil at Balboa she cleared at 8 p. m., Monday, July 10. Reference to the anticipated coming of the *San Pablo* was made in THE CANAL RECORD of January 19. The vessel is 155 feet in length by 35 feet beam and has a draft of 14 feet.

#### Offices Moving into New Pacific Terminal Building.

The office of the Captain of the Port of Balboa began moving into the new Pacific terminal office building on Monday, July 10,

and was completely installed in the new quarters on the third floor before noon of July 12. The customs office moved with the force of the Captain of the Port. The receiving and forwarding agency of the Panama Railroad will probably move on Sunday, July 16, occupying the ground floor.

The lessees of the office rooms on the second floor have been advised that they may occupy the rooms at any time. The following companies have leased offices, in the rooms indicated: South American Steamship Company, rooms 201 and 203; Payne and Wardlaw, rooms 205 and 207; Pacific Steam Navigation Company, rooms 213, 215, and 217; Anglo-American Steamship Agencies, room 202; Panama Agencies Company, rooms 204 and 206; American Trade Developing Company, room 208; Pacific Mail Steamship Company, rooms 212, 214, 216, and 218. All 15 office rooms on the second floor have been taken.

The building is situated at the head of the slip between the quay wall and Pier 18. A description of it was published in THE CANAL RECORD of April 5.

#### Six Lives Lost in Fire in Colon.

Six persons were killed and two blocks of the city of Colon, with the exception of five buildings, were razed by a fire which broke out at about 4.30 a. m., Sunday, July 9. The known dead include one man, one woman, and four children; the children belonged to one family. The blocks burned were those lying between Fifth and Sixth Streets, extending from Front Street to Bolivar Street, and the property damage is estimated at \$120,000.

The Cristobal fire department responded to the call and assisted the Colon department. There was little wind at the time and the firemen were able to keep the fire from crossing the wider streets, but Bottle Alley, the first longitudinal street beyond Front, is narrow and the buildings beyond it were ignited, the fire going back to Bolivar Street.

About 1,200 persons were rendered homeless by the fire and the Canal Zone chapter of the Red Cross has undertaken to care for them, as was done after the large fire of April 30, 1915, which destroyed 22 blocks, about one-third of the city, in the section between Seventh and Fourteenth Streets, from Front to D Streets. The new burned area lies one block to the north of the former.

#### NOTICE TO MARINERS.

##### Cape Mala Light Relighted.

The Cape Mala light was relighted on July 5, 1916, with its characteristics unchanged.  
CHESTER HARDING,  
Acting Governor.

The above has been issued as circular No. 643-25, under date of July 6, 1915.

## RECEIPTS AND EXPENSES.

## Increasing Receipts of Tolls Reduce Monthly Loss.

The tolls collected from the Canal traffic in May, amounting to \$368,023.79, were greater than the tolls in any month since August, 1915. It was in the middle of September that the Canal was closed by the Culebra slides.

During the 12 months preceeding last September, when the Canal was in regular use, with only occasional delays, the aggregate collections were \$5,317,541.19. This was an average of \$443,128.43 per month. During the first half-month of operation, beginning on August 15, 1914, the tolls amounted to

\$88,401.80; in September they were \$265,600.80 and in October, \$366,786.48; and after these months there was none to the time the Canal closed in which the tolls were not greater than those collected in May, 1916.

The expenses of operation and maintenance have been increased by the slides. Those for May were \$659,573.85. This was slightly more than double the expenses for May of 1915, which were \$328,079.70. The expenses for May of this year were, however, the greatest charged to any month since the opening of the Canal. The nearest approach is the \$643,945.21 for November, 1915. In the six months following the closing of the Canal the charges for operation and maintenance averaged \$577,726.34.

The excess of expenses over the collections of tolls for May was \$291,550.06. This made the tenth consecutive month in which there was a loss in the account; July, 1915, is the only month of the fiscal year in which the collections of tolls exceeded the expenses for operation and maintenance, the favorable balance being \$117,570.09. In August there was a loss of \$63,177.33; in September, of \$149,567.34. In the months during which the Canal was closed the losses ranged between \$546,759.83 and \$643,945.21, totaling for the six months, October to March, inclusive, \$3,553,627.72, which is an average of \$592,271.29 per month.

A summary of the items charged to operation and maintenance during May follows:

ITEMS.	May, 1916.	April, 1916.	May, 1915.	Fiscal Year to Date.	
				This Year.	Last Year.
<b>Marine Division:</b>					
Admeasurement of vessels.....	\$864.57	\$825.96	\$770.96	\$6,926.77	\$9,181.95
Local inspection.....	487.05	468.39	423.87	3,587.93	3,710.18
Aids to navigation.....	5,985.04	4,682.18	4,210.39	52,030.94	44,310.32
Pilotage.....	7,173.90	5,419.51	7,757.46	33,821.88	55,657.52
Operation of harbor tugs—balance.....	3,336.30	3,744.33	.....	38,908.06	.....
<b>Total, Marine Division.....</b>	<b>17,877.48</b>	<b>15,140.37</b>	<b>13,162.68</b>	<b>135,475.57</b>	<b>112,859.97</b>
<b>Lock operation and maintenance—</b>					
<b>Gatun Locks:</b>					
Superintendence.....	1,181.20	1,006.34	1,142.71	11,765.96	15,905.81
Operation.....	8,030.11	5,729.61	8,391.03	73,393.47	92,485.20
Maintenance of machinery and equipment.....	6,699.11	5,061.39	6,163.67	131,724.22	70,179.83
Maintenance of structure.....	3,370.60	1,227.48	2,893.49	13,739.07	29,884.62
Miscellaneous supplies and expenses.....	174.20	258.00	309.55	1,893.83	2,587.49
<b>Total, Gatun Locks.....</b>	<b>19,815.22</b>	<b>13,282.82</b>	<b>18,900.25</b>	<b>232,516.55</b>	<b>211,042.95</b>
<b>Gatun Spillway:</b>					
Operation.....	39.34	.....	48.00	769.15	1,048.60
Maintenance of machinery and equipment.....	66.52	115.97	153.84	4,693.12	4,514.44
Maintenance of structure.....	44.24	2,924.69	747.19	11,162.77	6,082.60
<b>Total, Gatun Spillway.....</b>	<b>150.50</b>	<b>3,040.66</b>	<b>949.03</b>	<b>16,625.04</b>	<b>11,645.64</b>
<b>Pedro Miguel Lock:</b>					
Superintendence.....	1,547.66	1,694.60	1,020.64	15,004.45	13,394.95
Operation.....	5,173.54	3,980.50	6,889.45	44,400.86	72,631.71
Maintenance of machinery and equipment.....	3,972.46	6,554.62	4,958.52	58,567.37	41,714.90
Maintenance of structure.....	1,649.61	1,262.18	1,351.94	14,386.88	24,232.25
Miscellaneous supplies and expenses.....	313.67	576.15	180.60	2,587.64	1,735.33
<b>Total, Pedro Miguel Lock.....</b>	<b>12,656.94</b>	<b>13,868.05</b>	<b>14,401.15</b>	<b>134,947.20</b>	<b>153,709.14</b>
<b>Pedro Miguel Dam:</b>					
Maintenance.....	91.59	.....	.....	91.59	42.00
<b>Miraflores Locks:</b>					
Superintendence.....	2,191.08	1,879.90	1,180.34	15,694.72	15,878.16
Operation.....	7,115.78	1,656.30	8,793.62	60,195.19	94,123.30
Maintenance of machinery and equipment.....	16,646.07	16,426.94	4,195.28	90,307.88	68,546.76
Maintenance of structure.....	1,326.87	861.65	2,043.92	11,444.95	22,398.96
Miscellaneous supplies and expenses.....	365.23	314.84	438.34	2,546.19	3,235.71
<b>Total, Miraflores Locks.....</b>	<b>28,145.03</b>	<b>21,139.63</b>	<b>16,651.50</b>	<b>180,589.93</b>	<b>204,182.89</b>
<b>Miraflores Spillway and East Dam:</b>					
Operation.....	62.86	74.89	.....	356.72	651.50
Maintenance of machinery and equipment.....	.....	34.25	44.42	1,815.79	8,206.30
Maintenance of structure.....	98.82	.....	49.10	485.85	697.84
<b>Total, Miraflores Spillway and East Dam.....</b>	<b>161.68</b>	<b>109.14</b>	<b>93.52</b>	<b>2,658.36</b>	<b>9,555.64</b>
<b>Miraflores West Dam:</b>					
Maintenance.....	.....	.....	.....	347.72	377.17
<b>Total, lock operation and maintenance.....</b>	<b>61,020.96</b>	<b>51,440.30</b>	<b>50,995.45</b>	<b>567,776.39</b>	<b>590,555.43</b>
<b>Dredging:</b>					
Atlantic entrance.....	534.45	622.77	1,104.11	8,400.47	124,198.10
Gatun Lake.....	.....	.....	.....	.....	.....
Gaillard Cut.....	313,673.36	318,001.75	124,585.62	3,172,259.41	1,493,442.55
Miraflores Lake.....	463.50	.....	2,253.44	2,253.44	2,253.44
Pacific entrance.....	.....	.....	.....	20,187.63	8,628.79
<b>Total, dredging.....</b>	<b>314,611.37</b>	<b>318,624.52</b>	<b>127,943.17</b>	<b>3,200,847.51</b>	<b>1,628,522.88</b>
<b>Gatun Dam, maintenance.....</b>	<b>2,029.94</b>	<b>1,032.76</b>	<b>5,094.19</b>	<b>18,021.71</b>	<b>43,304.00</b>
Removal of floating obstructions.....	1,758.12	1,827.35	1,129.82	18,692.64	13,400.01
Gatun-Mindí Levee, maintenance.....	20.08	.....	3,317.32	1,625.84	25,982.38
Colon West Breakwater, maintenance.....	.....	.....	.....	41,328.32	134.54
Colon East Breakwater, maintenance.....	.....	.....	.....	.....	.....
Naos Island Breakwater, maintenance.....	.....	.....	2,236.70	58.45	2,693.63
Damages to vessels in locks.....	23.11	84.57	7.26	787.78	2,204.57
Damages to vessels in Canal.....	.....	.....	.....	948.83	.....
Operation of floating derricks.....	16,080.30	4,370.17	.....	90,407.48	.....
Maintenance of transportation tracks.....	2,274.16	1,957.90	2,911.19	20,815.61	35,941.72
<b>Total, operation and maintenance.....</b>	<b>415,755.52</b>	<b>404,577.94</b>	<b>206,859.69</b>	<b>4,096,786.13</b>	<b>2,455,604.13</b>
<b>Proportion of overhead expenses.....</b>	<b>243,818.33</b>	<b>177,240.01</b>	<b>121,220.01</b>	<b>2,225,797.16</b>	<b>1,249,671.30</b>
<b>Total.....</b>	<b>659,573.85</b>	<b>581,817.95</b>	<b>328,079.70</b>	<b>6,322,583.29</b>	<b>3,705,275.43</b>
<b>Tolls.....</b>	<b>368,023.79</b>	<b>235,618.44</b>	<b>522,676.95</b>	<b>2,036,031.42</b>	<b>3,804,154.64</b>
<b>Tolls earned in excess of expenses.....</b>	<b>.....</b>	<b>.....</b>	<b>194,597.25</b>	<b>.....</b>	<b>98,879.21</b>
<b>Expenses in excess of tolls earned.....</b>	<b>291,550.06</b>	<b>346,199.51</b>	<b>.....</b>	<b>4,286,551.87</b>	<b>.....</b>



## WEATHER CONDITIONS.

The following is a summary of the climatological conditions at the ends of the Canal:

## VESSELS OF VARIOUS NATIONALITIES USING THE CANAL.

The numbers of the vessels of various nations passing through the Canal each month, from the opening of the Canal to commercial traffic on August 15, 1914, to July 1, 1916, is shown in the following tabulation. It will be noted that the British and American vessels preponderate greatly, forming, respectively, 43.84 per cent and 37.8 per cent of the total of 1,875 vessels. Together they comprise 80.6 per cent of all the ships. Other comparisons are afforded by the table, in which classification by nationalities is arranged alphabetically:

NUMBER OF VESSELS OF VARIOUS NATIONALITIES PASSING THROUGH THE PANAMA CANAL.

Atlantic to Pacific.																
Month	American	British	Chilean	Danish	Dutch	French	Honduran	Italian	Japanese	Nicaraguan	Norwegian	Panamanian	Peruvian	Russian	Swedish	Total
August.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	13
September....	13	13	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27
October.....	15	27	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	44
November....	25	26	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	51
December....	20	18	2	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	43
January, '15	26	10	2	2	1	.....	.....	.....	.....	.....	1	.....	.....	.....	1	44
February....	18	15	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
March.....	25	24	3	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	57
April.....	25	25	2	.....	1	.....	1	.....	.....	.....	2	.....	.....	.....	.....	59
May.....	29	25	2	3	1	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	67
June.....	25	42	3	1	.....	2	.....	.....	3	.....	.....	2	.....	.....	.....	83
July.....	33	41	2	3	1	.....	.....	.....	2	.....	.....	.....	.....	.....	3	89
August.....	23	42	4	1	3	.....	.....	1	1	.....	6	4	3	.....	.....	89
September....	10	27	1	.....	3	.....	1	.....	1	.....	2	1	1	.....	2	49
October.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
December....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
1916	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
January.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
February....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
March.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2
April.....	12	13	1	2	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	32
May.....	13	26	4	.....	1	.....	.....	.....	4	.....	5	.....	5	1	.....	69
June.....	16	33	4	4	3	.....	.....	.....	4	.....	4	.....	.....	.....	.....	70
Total.....	347	418	32	21	16	2	3	2	23	1	35	6	17	6	12	941
Pacific to Atlantic.																
Month	American	British	Chilean	Danish	Dutch	French	Honduran	Italian	Japanese	Nicaraguan	Norwegian	Panamanian	Peruvian	Russian	Swedish	Total
August.....	9	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
September....	10	16	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	30
October.....	22	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40
November....	19	16	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	38
December....	23	31	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57
January, '15	20	23	2	2	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	54
February....	21	25	3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55
March.....	33	29	4	4	1	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	80
April.....	22	27	2	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	60
May.....	31	31	2	2	.....	.....	.....	1	.....	.....	5	.....	.....	.....	.....	75
June.....	28	24	3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	69
July.....	22	35	2	2	1	2	.....	1	.....	.....	5	.....	1	.....	5	77
August.....	29	34	3	1	.....	.....	.....	.....	.....	.....	2	.....	2	.....	.....	72
September....	15	22	1	4	1	.....	.....	.....	.....	.....	5	.....	1	.....	.....	51
October.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
December....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	6
1916	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
January.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2
February....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
March.....	3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
April.....	19	17	1	1	2	.....	.....	.....	1	.....	5	.....	.....	.....	.....	48
May.....	14	29	5	.....	1	.....	.....	.....	1	.....	4	.....	.....	.....	.....	60
June.....	13	26	5	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	54
Total.....	362	404	36	21	6	2	3	1	7	1	51	3	16	1	19	*934
Grand total.	709	822	68	42	22	4	6	3	30	2	86	9	33	7	31	*1875

\*Including one Argentinian vessel.

## Deceased Employees.

Name.	Check No.	Native of	Isthmian resident.	Employed by	Date of death.
James Carrington.....	34499	Barbados.....	Panama.....	Marine Div.....	June 22, 1916.
Alonso Green.....	93737	Jamaica.....	Colon.....	Supply Dept.....	July 1, 1916.
Samuel Jordan.....	67814	Barbados.....	Colon.....	Building Div.....	June 25, 1916.
John Jones.....	40041	Jamaica.....	Panama.....	Building Div.....	June 15, 1916.
Thos. W. Montague.....	95650	Jamaica.....	Panama.....	P. R. R.....	June 25, 1916.
Samuel Porter.....	97915	Jamaica.....	Colon.....	P. R. R.....	June 27, 1916.
William Serley.....	14696	Barbados.....	Colon.....	P. R. R.....	June 25, 1916.
George Watson.....	89064	Barbados.....	Colon.....	P. R. R.....	June 21, 1916.
Reginald Wiles.....	22290	Barbados.....	Panama.....	Health Dept.....	July 5, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below, information concerning the same being posted

at Canal clubhouses and post-offices, as per the numbers of announcements indicated: Structural steel draftsman (male); \$4 to \$8 a day; examination August 8, 1916; No. 902.

Senior highway engineer (male); \$2,200 to \$4,000 a year; examination August 8, 1916; No. 897.

Electrotyper-finisher (male); 60 cents an hour; examination about August 13, 1916; No. 917.

Completing the Celebration of the Fourth of July.

The sports which were postponed from the Fourth of July celebration on account of the rain were held at Balboa in the morning of Sunday, July 9. These included the horse show; a baseball game between picked teams from the Army and the civilians, won by the former; a wall-scaling contest among teams from military units, won by the Tenth Infantry; and the finals in the tennis tournament. Special trains were operated between Colon and Panama, and Las Cascadas and Panama, on which Fourth of July transportation was accepted.

The chairman of the Executive Committee in thanking the members for their work added the suggestion that, while the celebration is fresh in their minds, they submit ideas which might help to make the next celebration bigger and better than those of the past. These suggestions are to be placed on file for the benefit of succeeding committees. The invitation to make suggestions is extended to all Americans. They may be addressed to the Executive Secretary, Balboa Heights.

## Red Cross Membership More Than Tripled.

The campaign for increased membership in the Red Cross on the Isthmus has resulted, to July 11, in a total membership of 1,371 as compared with 360 on May 1. This is an increase of 1,011 or slightly over 308 per cent.

Among the 1,011 new members are two sustaining members and 1,009 annual members. A "sustaining member" is one who contributes \$10, instead of the annual fee of \$1; and \$8 of the amount goes to a fund which is being raised to endow the National Red Cross.

Among the 360 who were members prior to May 1 are two life members. Life membership is granted for \$25, the income from which, at four per cent, provides \$1 a year.

Those who are holding subscription lists are urged to return them to the Secretary of the Red Cross, Balboa Heights, during July.

## Postal Saving Accounts.

All outstanding postal savings accounts in Canal Zone post-offices have been transferred to the office of the Auditor, and hereafter withdrawals may be made at any money order office upon 24 hours notice to the postmaster. These are accounts that were opened under the old postal savings system, which has been superseded by deposit money orders.

## Applications for Family Quarters.

Applications for family quarters were on file at the several district quartermasters' offices on June 30, 1916, as follows:

STATIONS.	Number of applications.
Ancon.....	379 (52)
Ancon Hospital.....	4
Paraiso.....	189 (15)
Gatun.....	106 (11)
Cristobal.....	172 (36)
Total.....	850 (114)

Note—The figures in parentheses show the number of applicants already occupying regular or non-housekeeping family quarters at stations other than those at which applications are filed.

OFFICIAL CIRCULARS.

Payment of Rent for July.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 11, 1916.  
To all concerned—Owing to the delay in the preparation of the records and issuance of bills for the collection of rent for the month of July, 1916, no penalty will be enforced if the bills for the month of July are paid on or before the close of business on July 20, 1916.

CHESTER HARDING,  
Acting Governor.

Organizations for Current Fiscal Year.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 7, 1916.  
HEADS OF DEPARTMENTS AND DIVISIONS:  
Due to the many changes in rates of pay, it has been found impracticable to properly check up the new organizations submitted for the present fiscal year. It is therefore ordered that the organizations existing as of June 30, 1916, shall continue, with such changes in rates of pay as are necessary to conform to the new rates.

Any increases of force necessary from time to time should be handled as heretofore by requesting my authority to make such increase, with the reasons necessitating same, for each individual case.

CHESTER HARDING,  
Acting Governor.

Gravel and Sand for Buildings in Burnt District of Colon.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 6, 1916.  
To all concerned—Effective September 1, 1916, the concession made in the price of gravel and sand for use in the construction of buildings in the burnt district of Colon will be withdrawn.

However, the concession will be made for gravel and sand purchased subsequent to September 1, 1916, to be used on construction begun or contracted for prior to that date, provided that the Auditor of The Panama Canal be notified of the estimated amount of sand or gravel that will be required to complete construction under way or contracted for. Notice of such contract and estimate of the quantity of material required must be furnished the Auditor prior to September 1.

CHESTER HARDING,  
Acting Governor.

Transfer of Fortification Work.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., July 1, 1916.  
CIRCULAR NO. 660-30:  
1. With the approval of the Secretary of War, the work of the Fortification Section will be placed under the supervision of the District Engineer Officer in Charge of Fortification Work, Ancon, Canal Zone, effective July 1, 1916.  
2. The personnel of the Fortification Section will remain a part of The Panama Canal organization until further notice, but will be under the direction of the District Engineer Officer in Charge of Fortification Work.

CHESTER HARDING,  
Acting Governor.

Panama Canal Train Crews Transferred to Panama Railroad.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 6, 1916.  
To all concerned—Effective July 1, 1916, for administrative reasons, all train crews formerly operated under The Panama Canal will be transferred to the Panama Railroad.

CHESTER HARDING,  
Acting Governor.

Colored Teachers Acting as Principals.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., July 3, 1916.  
CIRCULAR NO. 6-6-7:  
Teachers of colored schools who act as principals will receive the following amounts in addition to their regular salaries as teachers:  
For principals of school buildings with two rooms, \$5 per month.  
For principals of school buildings with three or more rooms, \$10 per month.

CHESTER HARDING,  
Acting Governor.

Acting Member of Board of Local Inspectors.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 30, 1916.  
To all concerned—Effective June 29, 1916, during the absence on leave of Mr. James Macfarlane, Mr. William H. Stone will act as member of the Board of Local Inspectors.

CHESTER HARDING,  
Acting Governor.

Accountability for Nonexpendable Property Charged to Depot Commissary.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 21, 1916.

CIRCULAR NO. 125:  
Circular No. 124, designating Capt. F. H. Smith as accountable official for nonexpendable property charged to Depot Commissary, is hereby revoked.

Circular No. 121, designating Mr. Benj. L. Jacobson, Depot Commissary, as accountable for nonexpendable property in line commissaries and Ancon laundry, will remain in force.

The property accounts for Mr. Jacobson will be handled in the Property Bureau, Balboa Heights, and all invoices should be addressed and mailed to the Property Bureau.

AD. FAURE,  
Acting Auditor, The Panama Canal.

Approved:  
CHESTER HARDING,  
Acting Governor.

Nonexpendable Property Carried by Depot Commissary.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 30, 1916.

Effective July 1, 1916, Capt. F. H. Smith will account for all nonexpendable property carried by the Depot Commissary, vice Mr. Benj. L. Jacobson.

AD. FAURE,  
Acting Auditor, The Panama Canal.  
Approved:  
CHESTER HARDING,  
Acting Governor.

Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 28, 1916.

CIRCULAR NO. 126:  
Effective July 1, 1916, Mr. G. S. Briggs is designated an accountable official of The Panama Canal, vice Mr. A. P. E. Doyle, and as such will account for all stock carried at the Mount Hope printing plant.

AD. FAURE,  
Acting Auditor, The Panama Canal.

Approved:  
CHESTER HARDING,  
Acting Governor.

Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 29, 1916.

CIRCULAR NO. 127:  
Effective July 8, 1916, Mr. T. S. Booz is designated an accountable official, and as such will account for all property in use at the Y. M. C. A.'s, vice Mr. F. M. Richardson.

All papers affecting his account will be mailed to the Property and Requisition Bureau, Balboa Heights.

AD. FAURE,  
Acting Auditor, The Panama Canal.  
Approved:  
CHESTER HARDING,  
Acting Governor.

Accountable Official.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 1, 1916.

CIRCULAR NO. 130:  
Effective July 1, 1916, Lieut.-Col. Deane C. Howard is designated an accountable official of The Panama Canal, vice Maj. E. E. Persons, and as such will account for all nonexpendable property in use by the Health Department.

AD. FAURE,  
Acting Auditor, The Panama Canal.  
Approved:  
CHESTER HARDING,  
Acting Governor.

On Special Duty in Chief Health Office.

THE PANAMA CANAL,  
HEALTH DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 27, 1916.  
To all concerned—Capt. D. W. Harmon, Medical Corps, U. S. Army, is assigned to special duty in this office until Maj. E. E. Persons goes on leave of ab-

sence about August 1, 1916. During Major Persons' absence, Captain Harmon will act as general inspector.

D. C. HOWARD,  
Chief Health Officer.

Approved:  
CHESTER HARDING,  
Acting Governor.

Sundry Civil Bill Approved.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 5, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:  
To all concerned—For your information, the following item is quoted from cablegram dated July 3, 1916:

"Sundry Civil Bill approved July 1."  
C. A. McILVAINE, Executive Secretary.

Room in the New Office Building at Cristobal.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 30, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:  
If your department requires room in the new office building at Cristobal, it will be necessary for you to advise this office at once, in order that it will be known what rooms will be available for assignment to outside parties.

Up to the present time, only two or four rooms remain unassigned on the second floor, as the entire third floor of this building will be occupied by the Port Captain, the entire first floor by the Receiving and Forwarding Agent, and part of the second floor by the Receiving and Forwarding Agent, the Health Officer, the Collector, and the customs officers.

C. A. McILVAINE, Executive Secretary.

Post-office Inspector.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 8, 1916.

To all postmasters—You are advised of the appointment, effective July 1, 1916, of Mr. S. C. Russell as post-office inspector of the Canal Zone. His authority will be respected accordingly.

C. H. CALHOUN,  
Director of Posts.  
Approved:  
C. A. McILVAINE,  
Executive Secretary.

Employees Authorized to Witness Signatures to Pay Receipts.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., June 12, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:  
It is desired to cancel all outstanding authorities for witnessing signatures to pay receipts. You will please submit to this office a list of employees whom you desire authorized, furnishing three copies of their signatures on cards three inches by five inches. It is desired that none but gold employees be authorized for this work.

AD. FAURE,  
Acting Auditor, The Panama Canal.

Employees Authorized to Witness Pay Receipts.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 7, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:  
Referring to circular from this office of July 1, requesting that you submit a list of employees whom you desire authorized to witness signatures to pay receipts, it must be understood that none of the employees should witness signatures until duly authorized to do so, and that the fact that they have furnished three copies of their signatures does not authorize them to perform this duty.

In addition to the signature it is desired that the occupation and location of the employee be shown on the card.

It is expected that these authorizations will be issued in time for witnessing the July pay receipts in August.

AD. FAURE,  
Acting Auditor, The Panama Canal.

Dumping of Cars Loaded with Rubbish.

PANAMA RAILROAD COMPANY,  
OFFICE OF MASTER OF TRANSPORTATION,  
BALBOA HEIGHTS, C. Z., June 24, 1916.

CIRCULAR NO. 391:  
To all yard conductors, Balboa Yard—Hereafter when handling Ligerwood cars loaded with rubbish to Dump 19, please turn cars so that same will be open on the west side. It must also be understood that cars not tagged by the division logging must not be handled. It is necessary that these cars bear tags in order that unloading forces may make proper distribution of labor charges.

W. F. FOSTER,  
Acting Master of Transportation.







(Week ending at 6 p. m., July 9, 1916.)

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

<i>Date Entered</i>	<i>Vessel</i>	<i>Nationality</i>	<i>Line</i>	<i>From</i>	<i>For</i>	CARGO	CANAL TONNAGE	
						<i>Nature</i>	Tons	Gross Net
July 3.	<i>Canca</i> .....	British.....	Pacific Steam Nav. Co.	Cristobal..	Guayaquil....	General.....	432	1,557 990
July 3.	<i>Albert G. Force</i> ( tug )	American.....	United States Navy.	Cristobal..	Bilboa.....	Loaded.....		
July 3.	<i>Aysen</i> .....	Chilean.....	South American S. S. Co.	Cristobal..	Valparaiso....	General.....	1,765 4,593	3,042 3,042
July 5.	<i>Ucayali</i> .....	Peruvian.....	Peruvian Steamship Line.	Cristobal..	Callao.....	General.....	2,044 4,278	2,206 2,206
July 5.	<i>Urubamba</i> .....	Peruvian.....	Peruvian Steamship Line.	Cristobal..	Callao.....	General.....	2,493 4,957	3,110 3,110
July 5.	<i>Jamaica</i> .....	British.....	Pacific Steam Nav. Co.	Cristobal..	Buenaventura..	General.....	393	1,171
July 5.	<i>Donnell</i> .....	British.....	American-Australian Line.	New York..	Australia.....	General.....	6,655 7,670	6,515 6,515
July 5.	<i>Counselor</i> .....	British.....	Harrison Line.	Liverpool..	Los Angeles...	General.....	3,500 5,402	3,740 3,740
July 5.	<i>Oswald</i> .....	British.....	Booth Steamship Company.	Liverpool..	Calita Buena..	Ballast.....		5,427 3,750
July 6.	<i>City of Oran</i> .....	British.....	Norton Lilly & Company.	New York..	Vladivostok....	General.....	10,300	5,820 5,820
July 7.	<i>Kim</i> .....	Norwegian....	P. J. Laussensten.	Norfolk....	Iquique.....	Ballast.....		7,552 5,603
July 7.	<i>Ikoma Maru</i> .....	Japanese.....	I. Nakamura....	New York..	Amoy.....	Oil.....	3,350	3,123 3,200
July 7.	<i>Tokuyama Maru</i> .....	Japanese.....	Nippon Yusen Kabushiki K'sha.	Philadelphia.	Itosaki.....	Petroleum...	11,551 7,494	5,409 5,409
July 9.	<i>San Pablo</i> ( dredge )	American.....	United States Government.	Baltimore...	San Francisco.	Ballast.....		838 34
July 9.	<i>Mogellan</i> .....	French.....	Ant. Dom. Bordes & Fils.	Norfolk....	Futaba.....	Coal.....	285	624 624
July 9.	<i>Maedlan</i> .....	French.....	Pacific Steam Nav. Co.	Liverpool..	Peruvian ports.	General.....	5,393 4,797	3,437 3,437
July 9.	<i>Kawachi Maru</i> .....	Japanese.....	Nippon Yusen Kabushiki K'sha.	New York..	Vladivostok....	General.....	6,901	6,164 6,164

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

July 5	<i>Palena</i> .....	Chilean.....	South American S. S. Co.....	Lota, via way ports.	Colon.....	General.....	963	3,639	2,53
July 5	<i>Guerney</i> .....	Norwegian.....	W. Wilhelmsen.....	Mejillones.....	Colon (orders).....	Nitrates.....	6-80	4,4 3	3,27
July 6	<i>Manaro</i> .....	Peruvian.....	Peruvian Steamship Line.....	Callao.....	Colon.....	Gen-ral.....	2,860	6,639	6,67
July 7	<i>Capac</i> .....	British.....	N. Y. and Pacific S. S. Co.....	Panama.....	Panama.....	Gen-ral.....	4,300	1,400	4,30
July 7	<i>Genial</i> .....	British.....	Brittish Steamship Co.....	Cruz Cruz.....	Philadelpia.....	Iron ore.....	4,100	2,952	1,12
July 9	<i>Ojibar</i> .....	American.....	American-Hawaiian Line.....	Atafagasta.....	Baltimore.....	Nitrates.....	8,700	7,106	5,06

EXPECTED ARRIVALS FROM PACIFIC.

Photinia	Konink. Nederland S. M.	Portland.	July 11.	Inverkip	Inverkip Steamship Co.	Chilean ports.
Palara	Houlder, Middleton & Co.	Taitai.	July 11.	Poplar branch.	Nautilus Shipping Co.	Paita.
Mathilda	Acties Mathilda Co.	Chilean ports.	July 13.	Remyra	New Zealand Shipping Co.	Chilean ports.
Elleric	Elleric Steamship Co.	Chilean ports.	July 14.	Bowdoin	The Bowdoin Co.	San Francisco.
Howthead.	Port Steamship Co.	Chilean ports.	July 14.	Suvalra	Swedish East Asiatic Co.	Calita Buena.
Kalsbia	Clyde Steamship Co.	Chilean ports.	July 15.	Kentia	U. S. Steel Products Co.	Junin, Chile.
South Pacific.	Pacific Shipping Co.	Chilean ports.	July 16.	Jersey City.	W. R. Smith & Co.	Chilean ports.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	Prom	Date	Vessel	Line	For
July 4	<i>Siena</i> .....	La Veloce Line.....	Genoa.	July 5	<i>Kilpatrick</i> .....	United States Army.....	New York.
July 5	<i>Merced</i> .....	Oil Company.....	New Orleans.	July 5	<i>McAdar</i> .....	Oil Company.....	Belize.
July 7	<i>Oranien</i> .....	Leyland Line.....	Liverpool.	.....	.....	.....	.....
July 10	<i>Haiti</i> .....	French Line.....	Bordeaux.	.....	.....	.....	.....

\*EXPECTED ARRIVALS.

\*EXPECTED DEPARTURES.

July 11....	<i>Antonio Lopez</i>	Spanish Line.....	Barcelona.	July 12....	<i>Anonio Lopez</i>	Spanish Line.....	Barcelona.
July 11....	<i>Siskiyon</i>	E. K. Wood Lumber Co..	New Orleans.	July 14....	<i>Haiti</i>	French Line.....	Bordeaux.
					<i>Oranien</i>	Leyland Line.....	
					<i>Siskiyon</i>	E. K. Wood Lumber Co..	

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

PORT OF BALBOA.

ARRIVALS				DEPARTURES.			
July 3. ....	<i>Anyo Maru</i> .....	Toyo Kisen Kaisha.....	Valparaiso.	July 6. ....	<i>Anyo Maru</i> .....	Toyo Kisen Kaisha.....	Hong'ong.
July 5. ....	<i>Alicia</i> .....	Panama Trading Co.....	Camp Sabbath.	July 10. ....	<i>Alicia</i> .....	Panama Trading Co.....	Camp Sabbath.
July 7. ....	<i>La Primera</i> .....	Standard Oil Co.....	Corinto.	July 8. ....	<i>La Primera</i> .....	Standard Oil Co.....	San Francisco.
July 7. ....	<i>Sinaloa</i> .....	A. O. Lindvig.....	Calita Coloso.	July 7. ....	<i>Sinaloa</i> .....	A. O. Lindvig.....	San Francisco.

\*Other than ships passing through the Canal.

Maximum Stages of the Chagres River.						Sallings of Vessels in Regular Service with the United States.						Metapan,..... U. F. C. July 24.....Aug					
DAY AND DATE.		STATIONS.				NEW YORK TO CRISTOBAL-COLON.						Colon..... P. R. R. July 27.....Aug					
		Vigia	Alajuela	Gambua.	Gatun Lake.	Vessel.	Line.	Sails.	Arrives.	NEW ORLEANS TO CRISTOBAL-COLON.							
										Abangares..... U. F. C. July 15.....July	Heredia..... U. F. C. July 19.....July	Turrialba..... U. F. C. July 22.....July	Paraismina..... U. F. C. July 26.....July	CRISTOBAL-COLON TO NEW ORLEANS.		CRISTOBAL-COLON TO NEW YORK.	
Sun., July 2.....	127.20	93	28.86	41	96	33	54	30	Santa Marta..... U. F. C. July 5.....July 12	Abangares..... U. F. C. July 15.....July	Metapan..... U. F. C. July 24.....Aug						
Mon., July 3.....	127.95	93	66.36	44.86	40	54	12		Metapan..... U. F. C. July 8.....July 17	Abangares..... U. F. C. July 19.....July	Colon..... P. R. R. July 27.....Aug						
Tues., July 4.....	127.90	93	78.40	49.66	44.54	03			Almirante..... U. F. C. July 12.....July 19	Turrialba..... U. F. C. July 22.....July	Almirante..... U. F. C. July 27.....Aug						
Wed., July 5.....	131.49	96	35.86	58.86	53	54	30		Pastores..... U. F. C. July 15.....July 23	Paraismina..... U. F. C. July 26.....July							
Thurs., July 6.....	129.08	93	50.66	40	43	54	31		Zacapa..... U. F. C. July 19.....July 26								
Fri., July 7.....	128.40	94	66.86	47.86	41	54	40		Altamira..... P. R. R. July 20.....July 26	Paraismina..... U. F. C. July 16.....July							
Sat., July 8.....	127.60	93	27	65.88	46.54	54	09			Arenas..... U. F. C. July 16.....July							
Height of low water to nearest foot.....	125.0	91.0								Cartago..... U. F. C. July 23.....July							
									Carrillo..... U. F. C. July 17.....July 24	Abangares..... U. F. C. July 23.....July							
									Tenorio..... U. F. C. July 20.....July 27	Heredia..... U. F. C. July 30.....Aug							
									Advance..... P. R. R. July 20.....July 27	Turrialba..... U. F. C. July 30.....Aug							
									Santa Maria..... U. F. C. July 20.....July 27								





## The Canal Record

Official publication of The Panama Canal.

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Address all Communications,  
THE CANAL RECORD,  
Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Hydrographic Station to Be Established at Cape Mala.

An expedition is to be sent to Cape Mala, on the west side of the mouth of the Gulf of Panama, next week to establish a station for the collection of meteorological and hydrographic data. These will be the basis of study of the winds, tides, and currents, in order that vessels may navigate with greater safety around this frequented and at times dangerous point.

The keeper of the lighthouse will have charge of the recording instruments, and will also make observations of the set of the currents, as is the practice at lighthouses in the United States. The instruments will include an anemometer, measuring the velocity of the wind, and an anemoscope, indicating its direction, both connected electrically with a quadruple automatic recorder; and a tide gauge and a standard rain gauge.

In an expedition the latter part of June to renew the gas tanks at the Cape Mala light, the clapet which took the party from Balboa to the cape came near foundering in a severe storm. At about two o'clock in the morning, while the vessel was anchored off the cape a severe storm sprang up, with a wind blowing around 40 miles an hour and heavy seas running. An effort was made to get under way but the anchor was foul of rocks, and after members of the crew hove it up and down for almost an hour it had to be slipped. By this time the seas were breaking clear over

the top of the house, the vessel wallowing and continually sticking her stern under, filling up everything afloat. A 6-inch syphon was connected, and with careful nursing and steady bailing with buckets the crew kept the clapet clear and afloat. The master reported that at one time the ship rolled so that her sidelights were under water. The side lights and a great deal of equipment on the deck and within the deckhouse were washed away.

In a later expedition to do the same work of renewing the tanks, the tanks caught fire when being tested, and a considerable amount of damage was done. This resulted in the light being extinguished for several days, as reported in recent notices to mariners, but it was promptly restored to working order.

#### Provisions for Rebuilding in Colon Fire Area.

The Panama Railroad Company has issued a circular letter to the lessees of lots in Colon on which houses were destroyed by the fire of July 9, offering to renew the leases for 25 years, beginning July 1, 1916, subject to the condition that buildings erected on them shall be of concrete or other noninflammable material and shall conform in other respects to the provisions of an ordinance based on the decree of May 30, 1915, of the President of Panama. This decree was issued in consequence of the fire of April 30, 1915. In its first article the ordinance provides that "every building which will be erected in the city of Colon shall have the external walls in concrete, brick, stone, concrete blocks, or expanded metal." This article was followed by 13 others, making detailed provisions for fireproofing and other elements of structural safety.

As was done for the rebuilding of the area of April 30, 1915, the Panama Railroad will agree to furnish sand and gravel for this work at \$1.25 per cubic yard, laid down in Colon.

The cleaning up of the latest burned area is in progress. The debris was not sufficient to justify the laying of a spur track from the Panama Railroad, and the removal of material is being accomplished by means of carts and wagons.

#### Children Playing around Houses under Construction, and Sawmills.

Complaint has been made of children in Ancon and Balboa who make playgrounds of the buildings under construction and of the local sawmills. This practice is dangerous and parents are required to have their children refrain from it. In addition to the danger of the children, it has caused trouble to the foremen in charge and their employees, and in some instances there have been altercations between the parents of the children and the people in charge of the work when the latter have interfered and ordered the children off the work. A reasonable consideration on the part of all parents concerned is necessary in order that this difficulty may be done away with.

### NEW LINE THROUGH CANAL.

#### New Zealand Shipping Company Abandons Old Round-the-World Route for Canal.

The passage through the Canal on Saturday, July 15, of the passenger steamship *Remuera* of the New Zealand Shipping Company, on the way from Wellington to London, marks the establishment of this important line through the Canal. Its route has formerly been around the Cape of Good Hope on the outward voyage from Great Britain, and around Cape Horn on the homeward lap, the vessels going completely around the world on each voyage. It was intended to make use of the Canal route some time ago, but the disturbance of conditions by the European war and the later closing of the Canal by slides had deferred the adoption of this route up to this time. The company has reported its intention of building new ships especially for the Canal service.

The *Remuera* carried 33 first cabin, 60 second class, and 156 third class passengers, who are on their way from New Zealand to Great Britain; discharged three first class and three second class passengers at Balboa, for transfer to connecting lines; and took five passengers at Cristobal for Newport News. She will call at Newport News for coal, sailing thence for Plymouth and London.

The passenger accommodations were practically all taken. The passengers expressed themselves as well pleased with the Canal route, as they had encountered fair weather almost all the way up, and found the Isthmian scenery and the Canal itself very interesting. It seems probable that the accommodations of the line and the opportunities to transfer at the Isthmus to connecting lines will cause this service to be of increasing importance.

The old route homeward, by Cape Horn, began with a voyage of 4,461 miles from Wellington to Cape Horn, a long, cold, rainy trip, passing through a region of icebergs. Rounding Cape Horn, the ship made for Montevideo, 1,355 miles beyond; and from Montevideo to England, by way of Tenerife, was about 6,200 miles. The total was approximately 12,216 miles. The new route is approximately 11,188, if the ship sails by way of Tahiti and goes from Colon direct to Plymouth. If she sails direct to Balboa from Wellington, and goes by Norfolk on the way from Colon to Plymouth the distance is approximately 11,448 miles. The saving by the Canal route is then about 768 miles, or around 2 1/3 days of ordinary steaming for the ships in this service.

Outward from Great Britain, around the Cape of Good Hope, the distance from Plymouth to Wellington is 12,916 miles, by way of Tenerife, Cape Town, Hobart, and Auckland. The saving by Panama is something





## LABOR FORCE AND QUARTERS.

## Distribution of Canal and Railroad Force, and Summary of Occupation of Quarters.

The total force of The Panama Canal, the Panama Railroad Company, and the contractors with those organizations on the Isthmus for the half-month ending on Wednesday, June 21, was 23,462.

This was a decrease of 519 from the force of May 24, which numbered 23,981. It is just one more than the 23,461 employed on April 26. It is 1,638 less than the 25,100 employed on March 22, and 904 less than the force on February 23, which was 24,366. The least force which has been employed on the Canal and railroad work since 1906, when extensive operations were getting under way, was that for the last half-month of December, 1915. It numbered 21,915. This is less by 1,547 than the force for the last half of June, 1916.

The total forces for the last half of June in preceding years have been as follows: In 1915, 26,897; in 1914, 29,673; in 1913, 42,262; in 1912, 34,927. The largest force ever reported was that for March, 1913, which was 44,733.

The gold force, consisting almost entirely of white Americans, numbered 3,492 for the last half of June, 1916. This was a decrease of 101 from the force for May, which num-

bered 3,593; and 147 less than the 3,639 employed in April. On March 22 the force was reported as 3,409; over this the force for June is an increase of 83.

The gold force consisted of 3,074 employees of The Panama Canal, 333 of the Panama Railroad, and 85 of contractors. The total of 3,492 is a decrease of 101 from the total gold force for June of 1915, which was made up of 3,212 employees of The Panama Canal, 295 of the Panama Railroad, and 86 of contractors. The total gold force for June of 1914, two years ago, was 4,257. It consisted of 3,790 employees of The Panama Canal, 442 of the Panama Railroad, and 25 of contractors.

The principal changes in the forces of the several departments since the last half of May were a decrease of 1,117 in the force of the Panama Railroad; an increase of 484 for the Building Division; an increase of 216 for the Division of Municipal Engineering; a decrease of 172 in the Dredging Division; an increase of 130 in the commissary branch of the Supply Department. The Marine Division made a relatively large increase, from 256 to 293. The forces of contractors diminished by 74.

A summary of the employment as of June 21, and of the occupation of Panama Canal and Panama Railroad quarters as of June 30, is given in the following tabulations:

SILVER EMPLOYEES*																
DEPARTMENT OR DIVISION.	Artisans.						Laborers.							Total silver.	Total gold.	Grand total.
	Monthly.	Special.	22 cents.	18 cents.	15 cents.	12 cents.	Special.	Euro- pean 16 cents.	13 cents.	10 cents.	7 cents.	5 cents.				
Operation and Maintenance, locs & office	491	..	7	22	44	14	..	..	19	42	..	1	641	15	739	
Terminal Court	24	11	33	55	301	34	..	12	73	1	2	1	863	166	1,029	
Building	98	..	363	3	6	441	24	50	..	170	201	3	5	1,741	17	1,419
Electrical	71	..	2	43	127	93	..	..	..	..	11	2	381	166	547	
Municipal Eng.	326	..	43	1	9	309	1	51	1	296	9	15	33	2,413	89	2,497
Dredging	1,441	1	14	52	136	31	..	..	48	97	48	2	3	2,220	320	2,540
Mechanical	137	8	75	138	628	607	..	..	10	61	167	9	7	1,849	812	2,661
Marine	199	..	..	..	..	..	30	..	..	..	..	..	..	229	64	293
Fortifications	58	..	25	43	87	7	14	1	89	69	..	..	..	193	57	450
General Construct'n	4	1	..	1	..	..	..	..	2	8	158	1	..	175	1	176
Total	3,467	21	583	949	2,067	1,012	146	30	813	1,733	30	49	0	9,095	2,006	12,911
Supply; main office	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..	9
Commissary	1,113	..	4	19	17	2	479	2	..	338	12	3	1	1,909	16	2,041
Subsistence	387	..	2	..	..	2	..	..	..	..	..	..	..	393	17	410
Quartermaster	829	83	64	61	59	..	..	12	235	803	..	6	2,132	89	2,241	
Accounting	21	..	..	..	..	..	..	..	..	..	..	..	..	21	199	20
Health	381	..	3	3	21	..	16	..	34	374	9	20	..	861	174	1,039
Executive	122	..	..	..	..	..	..	..	..	..	..	..	..	122	408	530
Panama Railroad	409	73	59	164	392	218	977	24	447	506	5	14	3,268	333	3,621	
Contractors	34	16	5	44	81	..	..	..	42	4	..	..	3	229	8	324
Grand total	6,763	193	725	1,242	2,637	1,244	1,618	68	1,571	3,758	56	95	19,970	3,492	23,462	
Month previous	6,916	273	699	1,143	2,388	1,653	1,947	79	1,768	3,324	57	91	20,383	3,593	23,981	
Changes	-153	-80	+26	+99	+429	-419	-369	-11	-197	+433	-1	+4	-418	-101	-519	-519

\*The wages are stated in United States currency.

## QUARTERS.

PLACE.	Gold.			Europeans.			West Indians.		
	Men	Women	Children	Men	Women	Children	Men	Women	Children
Balboa <sup>1</sup>	937	337	314	89	11	19	1,349	486	680
Ancon	953	420	363	6			247	16	3
Corozal	29	15	6				99	18	12
Pedro Miguel	247	121	144	7			387	123	153
Paraiso	320	79	90	45	5	15	562	115	159
Culebra <sup>2</sup>	21	13	10	2	1	7	350	255	308
Gambou	88	5	12				160	53	40
Satun	216	175	212	12		2	1,027	892	1,052
Cristobal <sup>3</sup>	955	335	410	72			1,984	258	485
Total	3,718	1,500	1,561	233	19	4	6,195	2,196	2,892

(1) Includes Taboga Island, Naos Island, and Palo Seco. (2) Includes 17 Asiatics. (3) Includes 18 American negroes, 30 Colombian and Panamanians, and two Panamanians on the gold roll. (4) Includes Miraflores and Red Tank. (5) Includes 43 Panamanians. (6) Includes Empire, Las Cascadas, and Bas Obispo. (7) Includes 14 Panamanians. (8) Includes Colon Beach and Colon Hospital. (9) Includes 14 East Indians. (15) Includes American citizens, and 412 Panamanians.

## SCHEDULE OF EXAMINATIONS.

## List of Examinations to be Held in Fall of 1916.

The following is a schedule of civil service examinations to be held at the Administration Building, Balboa Heights, in the fall of 1916:

Clerk, Panama Canal Service, about September 10, 1916. Applications must be filed out and filed with the local board not later than August 15, 1916.

The following-named examinations will be held on or about October 1, 1916: Stenographer, Departmental Service; stenographer and typewriter, Departmental and Panama Canal Services (men only for Panama Canal); stenographic clerk, Departmental Service; typewriter, Departmental Service. Applications for these examinations must be filed out and filed with the secretary of the local board not later than September 7, 1916.

The following-named examinations will be held on or about September 17, 1916. Applications must be filed out and filed with the local board not later than August 22, 1916: Ail, Coast and Geodetic Survey (men only); assistant inspector of boilers, Steamboat Inspection Service (men only); assistant inspector of hulls, Steamboat-Inspection Service (men only); bookbinder, Government Printing Office (men only); draftsman, Engineer Department at large (men only); draftsman copyist, ship, Navy Department (men only); electrotypist, molder, Government Printing Office (men only); forest assistant, Forest Service (men only); junior chemist, Departmental Service; junior engineer, mechanical or electrical, Engineer Department at large (men only); laboratory apprentice, Bureau of Standards (men only); local inspector of boilers, Steamboat-Inspection Service (men only); local inspector of hulls, Steamboat-Inspection Service (men only); matron, Indian Service; pharmacist, Public Health Service (men only); physician, all services except Philippine (men only); postal clerk, Panama Canal Service (men only); pressman, Government Printing Office (men only); stereotyper, Government Printing Office (men only); veterinarian, Bureau of Animal Industry.

The following-named examinations will be held on or about October 15, 1916. Applications for the same must be filed out and filed with the local board not later than September 20, 1916: Agricultural inspector, Philippine Service (men only); aid, Bureau of Standards (men only); apprentice fish culturist, Bureau of Fisheries (men only); draftsman copyist, marine engine and boiler, Navy Department (men only); draftsman, mechanical, Panama Canal Service (men only); draftsman, topographic, Panama Canal Service (men only); electrotypist, finisher, Government Printing Office (men only); engineer, Indian Service (men only); junior engineer (civil), Engineer Department at large (men only); junior engineer (mining), Bureau of Mines (men only); laboratory assistant, Bureau of Standards (men only); library assistant, Departmental Service; press feeder, Government Printing Office (women only); printer, Government Printing Office; scientific assistant, Department of Agriculture; teacher, Indian Service; trained nurse, Indian and Panama Canal Services.

Application blanks may be secured from the secretary of the local board.

In requesting application blanks for any of



the above-named examinations the exact title thereof as given above should be stated. In filing applications the date of examination should be omitted. In answering questions as to *bona fide* residence, such residence must be shown in a State or Territory of the United States, and county thereof, up to the time of filing application.

#### Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below, information concerning the same being posted at clubhouses and post-offices, as per the numbers of announcement indicated:

Associate ceramic chemist (male); \$2,000 to \$2,500 a year; examination August 8, 1916; No. 930.

Inspector of safety appliances (male); and inspector of hours of service (male); \$1,800 a year; examination about September 3-4, 1916; No. 933.

Electrical draftsman (male); \$3.52 and \$6 a day; examination August 15, 1916; No. 918.

#### Work of Sanitation in Army Posts.

During the last six months work has been pushed in the installation of permanent drains and ditches in the former Canal villages of Las Cascadas, Empire, and Culebra, which have been occupied as Army posts since the completion of dry excavation in the Cut. The original work in these villages was of temporary character, as it was expected that the places would be abandoned by Canal employees and that the installation of permanent tile and concrete ditching would be an unwarranted expense.

Following the virtually complete occupation of the towns by the Army, it set about carrying on its own work of sanitation. A sanitary inspector formerly in the employ of the Canal was engaged to direct the work in Las Cascadas, Empire, and Culebra, to which have since been added Corozal and Fort Grant. His work has embraced the direction of current sanitation and the planning and installation of the permanent accessories.

The work which was accomplished throughout the last dry season and up to June 1, in addition to the routine antimosquito work, the removal of garbage, etc., included the following construction work for drainage:

Station.	Concrete ditch.	Subsoil tile.
Las Cascadas.....	<i>Lin. ft.</i> 3,863	<i>Lin. ft.</i> 2,949
Empire.....	936	449
Culebra.....	3,748	479
Corozal.....	2,532	*1,253

\*Reconstructed.

The concrete ditches average 18 inches in width, and the subsoil tile are four, six, and 10 inches in diameter.

At Quarry Heights this class of work was performed by the Division of Municipal Engineering of The Panama Canal.

#### Barges Used for Transshipping.

Three barges belonging to the Panama Railroad have been sent through the Canal with cargo during the past week, starting from Balboa on July 12 and 13. Two of them carried copper bars, for transshipment at Cristobal and one carried cocoa. The cocoa was unloaded from the steamship *Amor* when that ship was fumigated, and was carried through the Canal in the barge instead of being reloaded on the *Amor*. The railroad company paid tolls and towage on the barges.

## EXECUTIVE ORDER.

### Establishing Proportions and Sizes of National Flags and Union Jacks.

The Executive Order of October 29, 1912, is hereby revoked, and for it is substituted the following:

Whereas, "An Act to Establish the Flag of the United States," approved on the 4th of April, 1818, reading as follows:—

"SECTION 1. Be it enacted, etc., That from and after the fourth day of July next, the flag of the United States be thirteen horizontal stripes, alternate red and white; that the union be twenty stars, white in a blue field.

"SECTION 2. And be it further enacted, That on the admission of every new State into the Union, one star be added to the union of the flag; and that such addition shall take effect on the fourth of July then next succeeding such admission."

fails to establish proportions; and

Whereas, investigation shows some sixty-six different sizes of National flags, and of varying proportions, in use in the Executive Departments;

It is hereby ordered that National Flags and Union Jacks for all Departments of the Government, with the exception noted under (a), shall conform to the following proportions:—

Hoist (width) of Flag..... 1  
Fly (length) of Flag..... 1.9  
Hoist (width) of Union..... 7/13  
Fly (length) of Union..... .76  
Width of each stripe..... 1/13

(a) Exception: The colors carried by troops, and camp colors, shall be the sizes prescribed for the Military Service (Army and Navy).

Limitation of the number of sizes: With the exception of colors under note (a), the

sizes of flags manufactured or purchased for the Government Departments will be limited to those with the following hoists:

(1).....	20 feet
(2) (Standard).....	19 feet
(3).....	14.35 feet
(4).....	12.19 feet
(5).....	10 feet
(6).....	8.94 feet
(7).....	5.14 feet
(8).....	5 feet
(9).....	3.52 feet
(10).....	2.90 feet
(11).....	2.37 feet
(12).....	1.31 feet

Union Jacks: The size of the Jack shall be the size of the Union of the National Flag with which it is flown.

Position and Size of Stars: The position and size of each star for the Union of the flag shall be as indicated on a plan which will be furnished to the Departments by the Navy Department. From this plan can be determined the location and size of stars for flags of any dimensions. Extra blueprints of this plan will be furnished upon application to the Navy Department.

Order effective: All National Flags and Union Jacks now on hand or for which contracts have been awarded shall be continued in use until unserviceable, but all those manufactured or purchased for Government use after the date of this order shall conform strictly to the dimensions and proportions herein prescribed.

President's Flag: The President's flag shall be in accordance with the plan accompanying and forming a part of this order. In case sizes are needed other than the two sizes shown on the plan, they shall be manufactured in the same proportions as those shown.

WOODROW WILSON.

THE WHITE HOUSE,

May 29, 1916.

[No. 2390.]

#### Price List of Oils and Greases.

Below is a price list of oils and greases suitable for steamship use, carried in stock at the Supply Department storehouses at Balboa and at the Cristobal dry dock. All prices are subject to the usual 25 per cent surcharge and to change without notice:

Oil or Grease.	Price.	Units of Sale.	Price of Container.
Oil, marine, engine, "Gargoyles," West India Oil Company.....	\$.51 gal.	50-gal. drums	No charge
Oil, marine, engine, "Atlas," West India Oil Company.....	.52 gal.	50-gal. drums	No charge
Oil, marine, engine, dark, West India Oil Company.....	.53 gal.	50-gal. drums	No charge
Oil, marine, cylinder, dark, West India Oil Company.....	.532 gal.	50-gal. drums	No charge
Oil, engine, "Arctic," West India Oil Company.....	.558 gal.	5-gal. tins	No charge
Oil, engine, "Arctic," West India Oil Company.....	.478 gal.	50-gal. drums	No charge
Oil, engine, "Arctic," West India Oil Company.....	.514 gal.	50-gal. drums	No charge
Oil, burning, "Colza," West India Oil Company.....	.564 gal.	50-gal. drums	No charge
Oil, burning, "Colza," West India Oil Company.....	.597 gal.	5-gal. tins	No charge
Grease, tunnel bearing, West India Oil Company.....	1.225 lb.	112-lb. cases	No charge
"Yacite," West India Oil Company.....	.08 lb.	300-lb. barrels	No charge
Oil, marine, engine.....	.21 gal.	50-gal. drums	\$6.00
Oil, stationary, engine.....	.14 gal.	50-gal. drums	6.00
Oil, air compressor cylinder.....	.14 gal.	50-gal. drums	6.00
Oil, car.....	.10 gal.	50-gal. drums	6.00
Oil, locomotive engine.....	.14 gal.	50-gal. drums	6.00
Oil, valve.....	.21 gal.	50-gal. drums	6.00
Oil, kerosene.....	.03 gal.	50-gal. drums	6.00
Oil, kerosene.....	.11 gal.	50-gal. drums	6.00
Oil, gun.....	1.147 gal.	5-gal. tins	No charge
Oil, lard.....	.84 gal.	1-pint bottles	No charge
Oil, sperm.....	.84 gal.	5-gal. tins	No charge
Oil, ammonia cylinder.....	1.10 gal.	5-gal. tins	No charge
Oil, cylinder, ice machine, steam.....	.30 gal.	50-gal. barrels	No charge
Oil, gas, engine.....	.63 gal.	50-gal. barrels	No charge
Oil, gas, engine.....	.20 gal.	50-gal. drums	\$3.50
Oil, non-liquid.....	.50 gal.	5-gal. tins	No charge
Oil, signal.....	.032 lb.	400-lb. barrels	No charge
Grease, black, gear.....	.44 gal.	5-gal. tins	No charge
Grease, yellow, cup, No. 3.....	.031 lb.	25-lb. tins	No charge
Grease, yellow, cup, No. 5.....	.044 lb.	25-lb. tins	No charge
Grease, rod, special.....	.09 lb.	350-lb. barrels	No charge
Tallow.....	.08 lb.	400-lb. barrels	No charge
Vaseline.....	.04 lb.	400-lb. barrels	No charge

## NOTICE TO MARINERS.

## Removal of Buoy at Cristobal Mole.

On account of extending Cristobal Mole, the buoy marking the submerged end of this mole has been removed and discontinued. The mole now extends over this spot.

The above has been published as circular No. 643-26, under date of July 15, 1916.

## A Day's Work in a Safe Harbor.

The Solicitor of the Department of Commerce has delivered the following opinion regarding the construction of the provision of section 2 of the Seamen's Act of March 4, 1915, that nine hours shall constitute a day's work on a vessel in a safe harbor:

"Section 2 of the Act of March 4, 1915 (the Seamen's Act), contains, among others, the following provision:

'And at all times while such vessel is in a safe harbor, nine hours, inclusive of the anchor watch, shall constitute a day's work.'

"A ruling of the Department has been requested in this connection upon the following questions:

"(1) When is a vessel to be considered as being in a safe harbor within the meaning of the above provision?

"(2) When do the nine hours therein referred to begin to run?

"(3) Is a vessel passing through the Soo Canal to be considered as being within a safe harbor and subject to the said provisions? and the matter has been referred to this office for an opinion.

"The first two questions are practically the same and may be treated together. An examination of the provision clearly shows that it was intended to apply to and cover work necessary to be done on a vessel while in port, as distinguished from the duties necessary in actual navigation while on her voyage. Putting it in another way, the provision was not intended to apply until the destination had been reached and the voyage was at an end. This latter does not take place until the vessel has come to anchor or has been made fast to a dock or pier within such safe harbor. Until then, such vessel must be considered as still on her voyage and being navigated. I am therefore of the opinion that the nine hours referred to in the said provision of section 2 of the Act of March 4, 1915, do not begin to run until the vessel has come to anchor or has been made fast to a dock or pier within a safe harbor. The reverse of this is also of course true: When a vessel weighs anchor or lets go the lines and begins her voyage the nine hours cease to run.

"The third question submitted is answered in the negative. Passing through the canal can only be considered as a necessary incident to, or a part of, a continuous voyage of the vessel."

## Miraflores Pasture in Use.

The new pasture in the vicinity of Miraflores was placed in service on Thursday, July 13, when 300 cattle were turned loose on it. These were culls from Isthmian and Costa Rican purchases, undersized and undernourished stock which will be fattened on the Pacific slope pastures for slaughter.

## OFFICIAL CIRCULARS.

## Bureau of Statistics.

## THE PANAMA CANAL,

## EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., July 7, 1916.

To all concerned—Effective this date a Bureau of Statistics is established as a part of the Executive Office. This bureau will prepare statistics of health and sanitation, rates of pay, Canal tonnage, and cargo, civil government, population, and employment, and will perform such other duties as may be assigned to it.

Mr. John O. Collins is hereby appointed Chief of the Bureau of Statistics.

Mr. Roger S. Erdman is hereby appointed Chief of the Personnel Bureau, vice Mr. John O. Collins.

C. A. MCLIVAIN,

Executive Secretary.

Approved:

CHESTER HARDING,  
Acting Governor.

## General Secretary, Bureau of Clubs and Playgrounds.

## THE PANAMA CANAL,

## EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., July 9, 1916.

To all concerned—Effective this date, Mr. T. S. Booz is appointed General Secretary, Bureau of Clubs and Playgrounds. He will perform the duties heretofore assigned to the Superintendent of Clubs and Playgrounds, in addition to his duties as secretary in charge of the Balboa clubhouse.

C. A. MCLIVAIN,

Executive Secretary.

Approved:

CHESTER HARDING,  
Acting Governor.

## Employees' Rates on United Fruit Company's Vessels.

## THE PANAMA CANAL,

## EXECUTIVE DEPARTMENT.

BALBOA HEIGHTS, C. Z., July 11, 1916.

To all concerned—This office has been advised by the general agent of the United Fruit Company that effective with the sailings of the steamship *Tenadores* for New York on the 17th instant, the steamship *Turrialba* for New Orleans on the 9th instant, and the steamship *Parismina* for New Orleans on the 16th instant, the following rates will be granted employees of The Panama Canal and the Panama Railroad, and officers and enlisted men of the United States Army and Navy stationed on the Isthmus, and their families: *New Orleans direct*—Minimum, \$48.75; better accommodations, \$56.25; suites, one or two people, \$150.

*New Orleans via Havana, Cuba*—Minimum, \$52.50; better accommodations, \$60; suites, one or two people, \$153.75.

*New York via Kingston, Ja., or Havana, Cuba*—Minimum, \$63.75; better accommodations, \$71.25; rooms with bath, one or two people, \$172.50 and \$180; suites, one or two people, \$217.50 and \$225.

The above rates include meals on all steamers.

C. A. MCLIVAIN,  
Executive Secretary.

## JOINT COMMISSION.

## Certification of Disagreement.

In the matter of the claim of Martina Cajar, for property known as the Tabernilla estate, located on the east side of the Canal, opposite Las Cascadas, certification of disagreement, rule No. 258, annulling rule No. 212, docket No. 44, June 8, 1916—Under the provisions of Article XV of the treaty between the United States of America and the Republic of Panama ratified February 26, 1904, it is provided:

"The President of the United States shall nominate two persons and the President of the Republic of Panama shall nominate two persons and they shall proceed to a decision; but in case of disagreement of the commission (by reason of their being

equally divided in conclusion) an umpire shall be appointed by the two Governments who shall render the decision."

Pursuant to the provisions of this article the Commission desires to bring to the notice of the umpire duly appointed under the treaty, that the Commission has been unable to reach an agreement on the following:

## The Question of Value.

The Joint Commission herewith certifies this disagreement to the umpire appointed under the treaty as provided for in Article XV of said treaty.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO, CLEMENT L. BOUYE, Commissioners.

## Decision of the Umpire.

In the matter of the claim of Martina Cajar, for the Tabernilla estate (certified to the umpire for decision by rule No. 258 of June 8, 1916, on account of disagreement of the Commission), decision of the umpire, award No. 112, docket No. 44, June 10, 1916—Wherever reference is made in this decision to "the treaty" it is understood to mean the Canal Treaty between the United States of America and the Republic of Panama, ratified February 26, 1904.

On March 29, 1913, Martina Cajar filed with the Joint Commission a claim for compensation in the sum of \$42,407 United States currency for expropriation of the lands known as "Tabernilla," and five thatched houses located thereon, situated within the Canal Zone on the east side of the Canal between Culebra and Empiré. The area of the property claimed being 848.1413 hectares.

On December 11, 1914, counsel for the United States filed their answer to this claim setting up that

"It is denied that the claimant has title to the land claimed or any part thereof, and it is denied also that the claimant has the lawful right of possession thereof.

"And it is further denied that the claimant has the improvement claim upon the land, and denied that the value of such land and improvements are worth the sum of \$42,407 as claimed by the claimant."

The Joint Commission upon June 8, 1916, in its rule No. 258 in this case states:

"Pursuant to the provisions of this Article (XV of the treaty) the Commission desires to bring to the notice of the umpire duly appointed under the treaty that the Commission has been unable to reach an agreement on the following:

## "The Question of Value."

"The Joint Commission herewith certifies this disagreement to the umpire appointed under the treaty as provided for in Article XV of said treaty."

The Joint Commission having unanimously decided that the ownership of the lands of "Tabernilla" is in Martina Cajar and that the extent of the property is 848.1413 hectares; in accordance with Articles VI and XV of the treaty that decision is final, and as the delays and expenses to which the claimant has been put by the expropriation of this property and the trial of the case were in connection with the contesting of her title to the property, the costs and expenses are in favor of the claimant.

The Inspector for the United States after a very rapid inspection of only a part of the land appraised its value at five dollars per hectare.

Based upon very sound opinion the values placed by the members of the Commission are as follows:

One member appraised the land at \$8 per hectare or a total of \$6,785.13 United States currency. One member (Judge Nicholas Cornet), a Commissioner for the United States, says:

"I have inspected a portion of this land while inspecting the bishop's tract. If, as stated by witnesses for the Government, the land is worth five dollars a hectare, and it costs from ten to fifteen dollars a hectare to secure title for public lands similar to this, then claimant's land is worth fifteen dollars a hectare."

The same Commissioner, in view of the claimant not having the title to the property perfectly recorded

## Deceased Employees.

Name	Cheek No.	Native of	Isthmian residence.	Employed by	Date of death.
Edward Ralph Catlin.....	112335	Barbados.....	Camp Bird.....	P. R. R. ....	July 13, 1916.
Phillip Lowe.....	35057	Barbados.....	La Boca.....	O. & M. ....	July 9, 1916.

The estates of the abovenamed deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.



when the claim was filed, deducts five dollars per hectare from the value of fifteen dollars per hectare, i. e., from the total of \$12,722.12, leaving a valuation of ten dollars per hectare or a total value of \$8,457.80 United States currency.

Two members placed a value of twenty dollars per hectare or a total value of \$16,962.80 United States currency.

Taking into consideration the fact that according to Article VI of the treaty "All damages caused to the owners of private property, etc., are to be compensated, and also that after the filing of this claim the title of the claimant to the property was properly established before the Commission and the expense of so doing was in addition to other expenses incurred by the claimant in the trial of this claim, my decision as umpire is that for the 848,1413 hectares of land, five thatched houses, and all other improvements located thereon the property of the claimant, Martina Cajar, she is entitled to compensation in the sum of \$12,800 United States currency, which includes all interest and damages and expenses of whatever nature the claimant may have incurred to date by the expropriation of this property.

An award is therefore made against the United States in favor of Martina Cajar for all rights, title, and interest she may possess or may have possessed to the lands known as "Tabernilla" and including interest and all damages and costs of whatever nature incurred by her to date in the expropriation of this property, of the sum of \$12,800.

If payment or tender of payment of this award is not made on or before the 19th day of July, 1916, such award will thereafter bear interest at the rate of six per centum per annum until paid.

VICTOR M. CONCAS, Umpire, Joint Commission.

#### Certification of Disagreement.

In the matter of the claim of Guillermo Nelson and Delia Nelson de Boy, for the property located on top of Ancon Hill, certification of disagreement, rule No. 259, annulling rule No. 213, docket No. 236, June 8, 1916.—Under the provisions of Article XV of the treaty between the United States of America and the Republic of Panama, ratified February 26, 1904, it is provided:

"The President of the United States shall nominate two persons and the President of the Republic of Panama shall nominate two persons and they shall proceed to a decision; but in case of disagreement of the commission (by reason of their being equally divided in conclusion) an umpire shall be appointed by the two Governments who shall render the decision."

Pursuant to the provisions of this article the Commission desires to bring to the notice of the umpire, duly appointed under the treaty, that the commission has been unable to reach an agreement on the following:

#### The Question of Value.

The Joint Commission herewith certifies this disagreement to the umpire appointed under the treaty as provided for in Article XV of said treaty.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO, CLEMENT L. BOUVE, Commissioners.

#### Decision of the Umpire.

In the matter of the claim of Guillermo Nelson and Delia Nelson de Boy for the summit of Ancon Hill, certified to the umpire by rule No. 250 of June 8, 1916, of the Joint Commission, on account of disagreement of the Commission, decision of the umpire, award No. 110, docket No. 236, June 17, 1916.—Wherever reference is made in this decision to "the treaty," it is understood to mean the Canal Treaty between the United States of America and the Republic of Panama, ratified February 26, 1904.

Upon the expropriation of the summit of Ancon Hill by the United States, the owners thereof, Guillermo Nelson and Delia Nelson de Boy, filed before the Joint Commission on April 15, 1913, their claim for damages in the sum of \$320,000 United States currency.

Counsel for the United States denies the claim and specifically asserts that the claimants never had title to the land in question.

The Joint Commission, after hearing all the evidence in the case, decided that the claimants, Guillermo Nelson and Delia Nelson de Boy, are the owners in fee simple of the land in question and also agreed as to the extent of the property, to wit: 13,609 square meters on the top, which lies nearly horizontal, and 50,391 square meters on the slope, a total of 64,000 square meters. Therefore, in accordance with Articles VI and XV of the treaty, this decision of the Commission is final.

The long proceedings in this case may be divided into two parts: one for the dispute as to the ownership of the land, for which the claimant is entitled to damages, and the other on account of the fabulous price asked for the land, the expense of which is a charge and responsibility on the part of the claimants.

On June 8, 1916, the Commission submitted to the

umpire its disagreement in this claim, which was as to the question of value only; the Commission having been in the position of having to decide between the theory of no title for the United States that the claimant was entitled to nothing, in the way of damages against the United States, on the one hand, and on the other hand the enormous sum demanded by the claimants.

The valuations placed by the members of the Commission are:

(a) One member:	The top.....	\$500.00
	The slopes.....	1,561.63
	A total of.....	\$2,061.63
(b) One member:	The top.....	\$500.00
	The slopes.....	2,025.00
	A total of.....	\$2,525.00
(c) Two members:	The top.....	\$20,413.50
	The slopes.....	15,117.30
	A total of.....	\$35,530.80

These valuations are very fairly supported by the various members of the Commission in their written opinions which have been submitted to me.

Commissioner Bouvé says "still, it must be conceded that the property in question is of some value," and in another part of his written opinion he says that it "has no real market value." With both of these statements the umpire is in accord. The summit of Ancon Hill has no market value because it has never been on the market; it is the purchaser who has given a value to the land as it is the purchaser who has called for the expropriation. Because he wants this land, not for building purposes nor for any other purposes to which it might be put in time to come, but as a complement to his ownership of this part of the city of Ancon. This land has the value which any land inside and surrounded by other properties has, with its rights of ingress and egress and other neighborhood rights which the law grants to them. Such land is of special value for the neighbors, which in this case are the United States. It is also true that "it is of some value" as any land situated in the center of the important city of Ancon—the best in the Canal Zone—can not but have; land situated just a short distance from the private residence of the Governor of The Panama Canal and so near to the Canal Administration Building; land which would have a special value by reason of its location though the Panama Canal did not exist, and even if it were only a heap of rocks.

The umpire recognizes the necessity primarily of estimating the value of land by square meters, acres, or hectares, but the importance of Ancon Hill is in its entirety for its special and unique situation, and as a whole it will be appraised by him. The umpire does not find the value of \$35,530 placed upon this land by the Panamanian Commissioners as unreasonable, but giving due consideration to the great difference between this sum and the values placed thereon by the other members, my decision is that for the expropriation of the summit of Ancon Hill, including all damages sustained and all expenses incurred by the claimants, the owners of the property to date, by said expropriation, they are entitled to compensation in the sum of \$24,000 United States currency.

An award is therefore hereby made against the United States in favor of Guillermo Nelson and Delia Nelson de Boy, for all right, title, and interest which the aforesaid claimants do possess or may hereafter be possessed to the 64,000 square meters of land owned by them on the summit of Ancon Hill, and for all damages thereon and for any and all expenses incurred to date by the expropriation of said property, the sum of \$24,000 United States currency.

If payment or tender of payment of the above award is not made on or before the 17th day of July, 1916, said award shall thereafter bear interest at the rate of six per centum per annum until paid.

VICTOR M. CONCAS, Umpire, Joint Commission.

#### Rules of Dismissal.

In the matter of sundry claims, rule of dismissal No. 255, docket number as noted, June 6, 1916—"With reference to the following claims, the evidence before them the Commission is that settlement therefor has been made by the United States:

Docket No.	Claimant.	Date of payment.
1354	Luzo (Luko) Romero.....	11-1-13
1906	Lacinto Amador.....	1-2-10
2645	Thomas Lodge.....	4-1-16
2646	Daniel McPherson.....	4-1-16
2654	Frank Leslie.....	4-1-16
2821	Thomas Lodge.....	4-1-16
2912	Melvina Murray.....	5-13-16

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, R. J. ALFARO, Commissioners.

In the matter of sundry claims, rule of dismissal No.

260, docket numbers as noted, June 13, 1916—In connection with the following claims, there have been filed with the Commission, by the attorneys for the claimants, letters in which it is stated that settlements have been made direct with the agents of the United States and that such claims may therefore be dismissed:

Docket No.	Claimant.
1340	Domingo Rios
1360	Policarpo Escobar
1383	Samuel Madison
1402	Nathaniel Davis
1451	William Desouza
2758	Luisa Small
2856	Maria Fraser
2896	Luisa Small

In view of the admission on the part of the attorneys for the claimants that settlements have been made for all property claimed in the above claims, no further action is necessary by this Commission, and they are hereby accordingly dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, Commissioners.

#### Rainfall from July 1 to 15, inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>		<i>Ins.</i>
Balboa.....	2.25	10	6.55
Balboa Heights.....	2.73	10	7.31
Miraflores.....	1.35	10	5.06
Pedro Miguel.....	.80	10	2.85
San Grande.....	.48	6	1.93
<i>Central Section—</i>			
Culebra.....	.80	10	2.82
Camacho.....	.91	6	2.93
Emire.....	.75	10	2.65
Camboa.....	1.61	6	4.69
Juan Mina.....	1.77	5	5.31
Alajuela.....	4.06	5	5.55
Vigia.....	2.10	5	5.68
Prietas.....	.94	8	2.88
Monje Lirio.....	1.92	8	3.62
<i>Atlantic Section—</i>			
Gatun.....	1.61	5	4.06
Bocas de Brook.....	1.61	5	5.45
Colon.....	2.39	3	4.70
Bocas del Toro.....	.57	5	1.36

\*Standard rain gage—readings at 5 p. m. daily.

Automatic rain gage at unstarred stations—values midnight to midnight.

#### Maximum Stages of the Chagres River, Gatun Lake, and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, July 15, 1916:

DAY AND DATE.	Vigia	Alajuela	Camboa	Gatun Lake.	Miraflores Lake.
Sun., July 9.....	127.45	93.53	43.86	45.54	15
Mon., July 10.....	128.75	94.45	45.86	40.86	40.54
Tues., July 11.....	128.60	94.45	45.86	47.86	49.54
Wed., July 12.....	128.25	94.45	45.86	54.86	50.54
Thurs., July 13.....	126.75	94.45	45.86	51.86	44.57
Fri., July 14.....	128.80	94.45	45.86	52.86	48.54
Sat., July 15.....	128.35	94.45	45.86	44.86	44.54
Height of low water to nearest foot	125.0	91.0			

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., July 18, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be obtained upon request of the addressees. Requests may be made by telephone, calling Balboa, No. 182.

Archibald, John J.	Lutz, Edward
Boiley, Glenn Keneson	McLean, Mrs. Arthur
Boyd, Henry T.	Manning, Miss Grace
Cassen, Henry	Mescek, Capt. John
Chilton, Ralph H.	Nye, Richard W.
Coleman, Capt. W. P.	Pempey, Dr. J. J.
David, Arvan	Pierce, R. F. B., Jr.
Dan, George	Reed, Robert E.
Dougherty, A. F.	Riley, E. W.
Flagg, F. H.	Roberts, Mrs. J. L.
Haddis, Miss Sadie	Schwitzer, Mrs. Fred
Hall, Capt. Wm. E.	Scott, Mahlon D.
Hardin, T. F.	Stroop, Clyde
Howard, Lieut. C. W.	Turner, Mrs. Arthur
Lambert, Ed.	Landingham, J. H.
Leary, J. J.	Vaughan, Mrs. James H.

\*Wago, M.

\*Paper.



## SHIPPING INFORMATION.

## August Weather Probabilities.

During August, 1916, the following weather conditions may be expected at the Canal entrances. Predictions are based on the records at Colon and Ancon for the past eight and 10 years, respectively.

**Winds**—The winds over the Atlantic coast will be light and variable, with an average hourly velocity of about eight miles an hour, and the maximum velocity during local rain or thunder squalls is not likely to exceed 30 miles an hour.

On the Pacific coast and over the interior, northwest winds will prevail, with an hourly velocity averaging about seven miles an hour. Thirty-five miles an hour may occur during the passage of thunder squalls, but such velocities are not likely to continue for more than a few minutes.

**Rain**—On both coasts and over the interior heavy showers may be expected. The average August rainfall at the Atlantic entrance, for a period 45 years, is 15.05 inches, while on the Pacific side 7.89 inches is the average fall, this average being for a period of 19 years. Twenty-five days with rain may be expected on the Atlantic coast, and 21 on the Pacific. The average number of days on which the rainfall equals or exceeds one (1.00) inch, is four and three, respectively.

**Fogs**—No fogs are likely to occur on the Pacific coast, and few, if any, will be experienced at the Atlantic side. Night and early morning fogs will be numerous over the interior, but all that occur may be expected to lift or become dissipated by 8:30 a. m. The average number of fogs over the Gaillard Cut section of the Canal, during the month of August, is 21, fifty per cent of which are dense. (In a dense fog objects cannot be distinguished at a distance of 1,000 feet.)

**Temperature**—The average shade air temperature over both coasts will be approximately 80 degrees Fahrenheit. A maximum temperature higher than 94° F., or a minimum lower than 69° F. is not likely to occur at the Pacific entrance, while at the Atlantic entrance the temperature is not likely to exceed 89° F. or fall below 71° F. The mean daily range in temperature will be about 15° F. on the Pacific coast, and 8° F. on the Atlantic.

**Barometric pressure**—The average sea level pressure for the month of August should be about 29.84 inches, over both coasts. The highest pressure is not likely to be more than 29.95 inches, or the minimum to be lower than 29.70 inches.

**Relative humidity**—The percentage of moisture in the air from month to month, during the rainy season, varies but slightly, and the average for the month of August will be close to 85 per cent. The daily range, however, will be greater on the Pacific coast, where the percentage of moisture is higher during the nighttime and lower during the daytime, than on the Atlantic side.

**Storms**—The extensive areas of high and low pressure that cross the continental area of the United States at frequent intervals, producing the cyclonic and anticyclonic storms that characterize the climate in the middle latitudes, do not extend southward beyond the tropic of Cancer. Most of the storms on the Isthmus during the rainy season are local wind, thunder, or rain squalls of more or less limited extent, and may be

expected quite frequently during the month. The average number of days on which thunderstorms occur on the Atlantic and Pacific coasts during the month is 17 and 23, respectively.

The season of the West Indian hurricanes is from July to October, and although the paths followed by them lie well to the northward of the Isthmus, a rough sea and heavy swell, accompanied by brisk winds, may be experienced occasionally outside the breakwaters in Limon Bay following the passage of one of these storms across the Caribbean Sea.

Generally cloudy weather will continue to prevail over both coasts, and smooth to moderate seas may be expected at the Pacific entrance.

**Tides**—No consideration need be given to tidal fluctuations at the Atlantic entrance to the Canal, as the maximum amplitude is only about two feet.

Panama (Balboa) tide predictions for the remainder of July and for August are given below:

Tide Predictions, Port of Balboa.  
JULY.

DATE.	Time and height of high and low water.			
Wed., July 19.....	0:30 -1.4	6:49 17.0	12:56 -0.4	19:06 15.9
Thurs., July 20.....	1:16 -0.5	7:34 16.3	13:45 0.5	19:53 1.0
Fri., July 21.....	2:06 0.8	8:19 15.3	14:37 1.5	20:42 13.1
Sat., July 22.....	2:58 2.0	9:08 14.0	15:32 2.5	21:36 12.5
Sun., July 23.....	3:55 3.2	10:03 13.1	16:32 3.4	22:44 11.7
Mon., July 24.....	4:56 4.1	11:01 12.3	17:36 3.9	.....
Tues., July 25.....	0:00 11.2	6:02 4.6	12:21 12.0	18:43 4.0
Wed., July 26.....	1:12 11.3	7:09 4.6	13:25 12.2	19:46 3.6
Thurs., July 27.....	2:09 11.8	8:07 4.2	14:17 12.6	20:39 2.9
Fri., July 28.....	2:56 12.3	8:57 3.5	15:01 13.1	21:21 2.2
Sat., July 29.....	3:37 13.0	9:39 2.8	15:41 13.6	22:00 1.5
Sun., July 30.....	4:14 13.5	10:17 2.2	16:18 14.0	22:34 1.0
Mon., July 31.....	4:48 14.0	10:52 1.7	16:53 14.3	23:07 0.8

## AUGUST.

DATE.	Time and height of high and low water.			
Tues., Aug. 1.....	5:21 14.4	11:26 1.5	17:28 14.4	23:39 0.8
Wed., Aug. 2.....	5:52 14.6	12:00 1.4	18:01 14.4	.....
Thurs., Aug. 3.....	0:11 1.0	6:22 14.7	12:33 1.5	18:33 14.2
Fri., Aug. 4.....	0:44 1.3	6:52 14.6	13:09 1.8	19:07 13.9
Sat., Aug. 5.....	1:18 1.8	7:24 14.5	13:49 2.2	19:34 13.4
Sun., Aug. 6.....	2:00 2.4	8:02 14.1	14:37 2.7	20:27 12.8
Mon., Aug. 7.....	2:48 3.1	8:49 13.6	15:34 3.2	21:23 12.2
Tues., Aug. 8.....	3:49 3.7	9:50 13.1	16:42 3.4	22:39 11.9
Wed., Aug. 9.....	5:01 4.0	11:01 13.0	17:58 3.1	.....
Thurs., Aug. 10.....	0:04 12.2	6:20 3.6	12:32 13.4	19:11 2.3
Fri., Aug. 11.....	1:18 13.2	7:34 2.7	13:41 14.3	20:15 1.1

DATE.	Time and height of high and low water.			
Sat., Aug. 12.....	2:20 14.4	8:38 1.4	14:41 15.3	21:09 -0.2
Sun., Aug. 13.....	3:15 15.6	9:31 0.2	15:35 16.1	21:57 -1.2
Mon., Aug. 14.....	4:06 16.6	10:19 -0.8	16:26 16.7	22:42 -1.8
Tues., Aug. 15.....	4:55 17.3	11:04 -1.3	17:15 16.9	23:25 -1.8
Wed., Aug. 16.....	5:40 17.4	11:47 -1.3	18:01 16.6	.....
Thurs., Aug. 17.....	0:07 -1.3	6:23 17.1	12:30 -0.8	18:44 16.0
Fri., Aug. 18.....	0:49 -0.4	7:05 16.3	13:15 0.1	19:27 15.0
Sat., Aug. 19.....	1:35 0.9	7:46 15.2	14:01 1.3	20:10 13.8
Sun., Aug. 20.....	2:22 2.2	8:29 14.0	14:52 2.6	20:55 12.6
Mon., Aug. 21.....	3:15 3.5	9:19 12.8	15:48 3.7	21:57 11.5
Tues., Aug. 22.....	4:15 4.6	10:21 11.8	16:54 4.4	23:10 10.8
Wed., Aug. 23.....	5:24 5.1	11:41 11.3	18:06 4.6	.....
Thurs., Aug. 24.....	0:38 10.8	6:37 10.2	12:57 11.5	19:15 4.3
Fri., Aug. 25.....	1:43 11.4	7:41 9.4	13:54 12.0	20:10 3.5
Sat., Aug. 26.....	2:31 12.1	8:33 8.8	14:39 12.7	20:56 2.6
Sun., Aug. 27.....	3:10 12.9	9:16 7.8	15:18 13.4	21:35 1.8
Mon., Aug. 28.....	3:46 13.7	9:54 1.9	15:54 14.0	22:09 1.2
Tues., Aug. 29.....	4:18 14.3	10:28 1.2	16:30 14.5	22:42 0.7
Wed., Aug. 30.....	4:50 14.8	11:01 0.8	17:03 14.7	23:14 0.5
Thurs., Aug. 31.....	5:21 15.2	11:34 0.5	17:37 14.9	23:46 0.6

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is the Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 04 (midnight) to 234 (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.				
Vessel.	Line.	Sails.	Arrives.	
Almirante.....	U. F. C.	July 12.....	July 19	
Pastores.....	P. R. R.	July 13.....	July 19	
Zacapa.....	U. F. C.	July 15.....	July 23	
Alhambra.....	P. R. R.	July 19.....	July 26	
CRISTOBAL-COLON TO NEW YORK.				
Advance.....	P. R. R.	July 20.....	July 27	
Santa Maria.....	U. F. C.	July 20.....	July 27	
Metopon.....	U. F. C.	July 24.....	Aug 1	
Colon.....	P. R. R.	July 27.....	Aug 2	
Almirante.....	U. F. C.	July 27.....	Aug 3	
NEW ORLEANS TO CRISTOBAL-COLON.				
Turrialba.....	U. F. C.	July 22.....	July 29	
Parissima.....	U. F. C.	July 26.....	July 31	
Atenas.....	U. F. C.	July 29.....	Aug 5	
Cartago.....	U. F. C.	Aug 2.....	Aug 7	
Abanegares.....	U. F. C.	Aug 5.....	Aug 12	
Heredia.....	U. F. C.	Aug 9.....	Aug 14	
CRISTOBAL-COLON TO NEW ORLEANS.				
Cartago.....	U. F. C.	July 23.....	July 28	
Abanegares.....	U. F. C.	July 23.....	July 31	
Heredia.....	U. F. C.	July 30.....	Aug 4	
Turrialba.....	U. F. C.	July 30.....	Aug 7	
Parissima.....	U. F. C.	Aug 6.....	Aug 11	
Atenas.....	U. F. C.	Aug 6.....	Aug 14	

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., July 16, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
July 10...	Balboa.....	American.....	American-Mexican Ste. Trd. Co.	Cristobal.....	Buenaventura.....	General.....	.....	705	315
July 10...	Palena.....	Chilean.....	South American S. S. Co.	Cristobal.....	Valparaiso.....	General.....	1,848	3,639	2,537
July 10...	Nurtareton.....	British.....	Carlton Steamship Co.	Norfolk.....	Antofagasta.....	Coal.....	8,094	6,063	4,517
July 11...	St. Patrick.....	British.....	British & Foreign S. S. Co.	New York.....	Vladivostok.....	General.....	6,000	5,457	4,238
July 12...	Montaro.....	Peruvian.....	Peruvian Steamship Line.....	Cristobal.....	Callao.....	General.....	1,177	4,639	2,673
July 13...	Panama.....	Danish.....	East Asiatic Co.	Copenhagen.....	San Francisco.....	General.....	6,361	7,021	5,267
July 13...	Aymeric.....	British.....	Bank Line, Limited.....	New York.....	Hongkong.....	General.....	5,903	4,852	3,599
July 13...	Santa Rosalia.....	American.....	United States Steel Products Co.	New York.....	Buenaventura.....	General.....	7,000	5,865	4,530
July 14...	Denis.....	British.....	Booth Steamship Co.	Liverpool.....	Iquique.....	Ballast.....	.....	4,435	3,566
July 15...	Valdivia.....	Chilean.....	Braun & Blanchard.....	Norfolk.....	Punta Arenas.....	General.....	2,300	2,227	1,613
July 15...	Jersey City.....	British.....	The Great City S. S. Co., Ltd.	Norfolk.....	Iquique.....	Coal.....	7,069	5,271	3,831

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

July 11...	Amor.....	Dutch.....	Royal Dutch W. I. Mail Co.	Guayaquil.....	Colon (orders).....	Cocoa.....	2,025	2,442	1,616
July 10...	Isthmia.....	American.....	American-Hawaiian Line.....	Tocopilla.....	Philadelphia.....	Nitrates.....	7,100	5,677	3,975
July 11...	Annie B. Reid.....	American.....	Hind, Rolph & Company.....	Iquique.....	New York.....	Nitrates.....	3,530	2,232	2,088
July 11...	Phoenia.....	British.....	The Stag Line.....	Kalama.....	Newport News.....	Lumber.....	6,700	5,577	4,000
July 11...	Polaria.....	British.....	Houlder, Middleton & Co.	Taltal.....	Norfolk.....	Nitrates.....	5,200	3,618	2,567
July 13...	Poplar Branch.....	British.....	Nautilus Shipping Company.....	Valparaiso.....	London.....	General.....	7,699	6,570	5,109
July 12...	Huallaga.....	Peruvian.....	Peruvian Steamship Line.....	Mollendo.....	Cristobal.....	General.....	2,765	4,538	2,430
July 12...	Linmar.....	Chilean.....	South American S. S. Co.	Talcahuano.....	Cristobal.....	General.....	540	3,631	2,421
July 13...	Victoria.....	British.....	Pacific Steam Navigation Co.	Valparaiso.....	Liverpool.....	General.....	4,044	6,950	4,566
July 13...	Lighter No. 71.....	American.....	Panama Railroad Company.....	Balboa.....	Colon.....	Cocoa.....	.....	170	170
July 15...	Acajutla.....	British.....	Pacific Steam Navigation Co.	Guayaquil.....	Colon.....	General.....	813	1,219	627
July 15...	Major A. G. Force.....	American.....	United States Army.....	Noyo.....	Newport, Eng.....	Lumber.....	4,700	4,465	3,255
July 15...	South Pacific.....	British.....	New Zealand Shipping Co.	Wellington.....	London.....	General.....	5,030	11,516	8,628
July 15...	Remuero.....	British.....	Warwick Steamship Company.....	Balboa.....	Colon.....	Copper bars.....	221	170	170
July 14...	Lighter No. 66.....	American.....	Panama Railroad Company.....	Balboa.....	Colon.....	Copper bars.....	221	170	170
July 14...	Lighter No. 72.....	American.....	Panama Railroad Company.....	Balboa.....	Colon.....	Copper bars.....	221	170	170
July 14...	Major A. G. Force.....	American.....	United States Army.....	Balboa.....	Colon.....	Copper bars.....	221	170	170
July 14...	Ellerie.....	British.....	Ellerie Steamship Co.	Mejillones.....	Colon (orders).....	Nitrates.....	5,300	3,811	2,766
July 14...	Sumatra.....	Swedish.....	Swedish East Asiatic Co.	Calita Buena.....	Gothenberg.....	Nitrates.....	8,600	6,870	5,155
July 15...	Coya.....	British.....	New York & Pacific S. S. Co.	Calita Buena.....	Baltimore.....	Nitrates.....	4,174	3,222	2,216
July 15...	Glenafric.....	British.....	James Gardiner & Company.....	Tocopilla.....	Norfolk.....	Nitrates.....	6,143	.....	.....

## EXPECTED ARRIVALS FROM PACIFIC.

July 15...	Jamaica.....	Pacific Steam Navigation Co.	Buenaventura.	.....	Suecia.....	Johnson Line.....	San Francisco.
July 16...	Oak Branch.....	Nautilus Shipping Co.	Iquique.	.....	Matilda.....	Acties Mathilda Co.	Chilean ports.
July 16...	California.....	Sudden & Christenson.	Iquique.	.....	Kalibia.....	Clyde Steamship Co.	Chilean ports.
July 17...	Kenra.....	Isthmian Steamship Co.	Arica.	.....	InterShip.....	Liverpool Steamship Co.	Chilean ports.
July 17...	Valetta.....	Valetta Steamship Co.	Chilean ports.	.....	Copenhagen.....	Glasgow Shipowners Co.	Chilean ports.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
July 10...	Haiti.....	French Line.....	Bordeaux.....	July 10...	Sieno.....	Italian Line.....	Genoa.....
July 11...	Antonio Lopez.....	Spanish Line.....	Barcelona.....	July 14...	Thyra Menier.....	Donald S. S. Co.....	New York.....
July 11...	Rey del Rio.....	Bluefields Fruit Co.....	Bluefields.....	July 14...	Haiti.....	French Line.....	Bordeaux.....
July 11...	Nicaragua.....	Bluefields Fruit Co.....	Bluefields.....	July 14...	Oranien.....	Leyland Line.....	Liverpool.....
July 12...	Siskiyou.....	E. K. Wood Lumber Co.....	New Orleans.....	July 14...	Antonio Lopez.....	Spanish Line.....	Barcelona.....
July 13...	Asian.....	Leyland Line.....	Liverpool.....	July 15...	Rey del Rio.....	Bluefields Fruit Co.....	Bluefields.....
July 14...	Thyra Menier.....	Donald S. S. Co.....	Guantanamo.....	July 15...	Camilo.....	Elders & Fyffes.....	Bristol.....
July 15...	Camilo.....	Elders & Fyffes.....	Port Limon.....	July 15...	Siskiyou.....	E. K. Wood Lumber Co.....	New Orleans.....
July 15...	Willapa.....	Sudden & Christenson.....	New Orleans.....	July 15...	Asian.....	Leyland Line.....	Mobile.....

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

.....	.....	.....	.....	July 18...	Willapa.....	Sudden & Christenson.....	Cape Gracia.
.....	.....	.....	.....	.....	Nicaragua.....	Bluefields Fruit Co.....	Bluefields.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## ARRIVALS.

## DEPARTURES.

July 12...	Seiyo Maru.....	Toyo Kisen Kabush Kaisha.	Hongkong.	July 16...	Seiyo Maru.....	Toyo Kisen Kabush Kaisha.	Valparaiso.
July 13...	Alicia.....	Panama Trading Co.	Camp Sabbath.	July 14...	Alicia.....	Panama Trading Co.	Camp Sabbath.
July 13...	Lighter.....	Panama Trading Co.	Camp Sabbath.	July 14...	Lighter.....	Panama Trading Co.	Camp Sabbath.
.....	.....	.....	.....	July 12...	Cusco.....	W. Wilhelmsens.....	Antofagasta.

## \*EXPECTED ARRIVALS.

July 17...	Lyman Stewart.....	Union Oil Company.....	San Francisco.	July 17...	Seaword.....	Alaska Steamship Co.....	Seattle, Wash.
July 17...	Geo. W. Elder.....	North Pacific S. S. Co.....	San Francisco.	.....	.....	.....	.....

\*Other than ships passing through the Canal.



## The Canal Record

Official publication of The Panama Canal.

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Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Excavation from the Cut during the Past Week.

Excavation from the bases of the Culebra slides during the week ending at midnight of Monday, July 24, amounted to 117,745 cubic yards. Miscellaneous maintenance excavation at other parts of the Cut during the week amounted to 27,948 cubic yards.

The output of the several dredges during the past week was as follows:

Dredge.	Type.	Yardage.
Cascadas.....	15-yard dipper.....	70,110
Paraiso.....	15-yard dipper.....	73,035
Gambou.....	15-yard dipper.....	27,045
Corozal.....	Ladder.....	26,435
No. 1.....	Ladder.....	8,720
No. 84.....	Ladder.....	12,400
No. 86.....	Ladder.....	27,948

#### The "Izabal" Converted into a Cargo Carrier.

The waterboat *Izabal*, which was used by the Pacific Mail to haul water from Taboga Island to ships at dock in Balboa or lying in the roads, before the installation of the pipelines through which water is furnished from the Canal supply system to ships at the wharves, has been sold and converted into a cargo carrier. The purchasers were Messrs. Robert A. Crespi and Harry T. Purdy, who are operating a manganese mine in Costa Rica, near the Pacific coast, about 130 miles above Punta Arenas, and the *Izabal* is to be used in hauling the ore to that port, for trans-

fer to lines making Punta Arenas a port of call.

The work of conversion has been done on the Pacific Mail gridiron at Taboga, and consisted principally of enlarging the hatches and cutting new hatches. The work was completed last week and the *Izabal* sailed for Punta Arenas in the evening of Friday July 21. She is a steam driven ship of 203 gross tons. 107 feet six inches in length by 22 feet six inches beam, with a depth of 11 feet six inches, and was built in 1897 at San Francisco.

#### Alaska Steamship Company to Use the Canal.

Announcement has been made of the intention of the Alaska Steamship Company to establish a line of vessels to carry cargo and passengers between Atlantic and Pacific ports of the United States, with Philadelphia and the Puget Sound ports as the termini. It is reported that the steamship *Alaska* will begin this service about November 15, sailing from Puget Sound for Philadelphia. It is said that the line is expected to work up a considerable transfer business at the Canal terminals, and will also call at West Indian ports.

#### Construction of Family Quarters.

The building program provides for the construction of the following family quarters:

	Four-family concrete	Four-family frame, Type 14-Rev.	One-family cottage type 17-Rev.
Ancon Balboa.....	4	75	100
Pedro Miguel.....		12	16
Cristobal.....		19	25

This will provide 581 additional sets of family quarters. The completion of these buildings, provided deliveries of material conform to the schedule set forth, will be approximately as follows:

#### ANCON-BALBOA.

**Four-family concrete quarters**—Construction is now under way on the four sets and will be completed between October 15 and November 1.

**Four-family frame quarters**—Commencing September 1st, 10 buildings will be completed each five weeks until the total number of 75 is reached.

**One-family cottages**—Commencing August 15th, 15 buildings will be completed each five weeks until the total of 100 is reached.

#### PEDRO MIGUEL.

**Four-family frame quarters**—Commencing September 1st, 25 per cent to be completed each month until total of 12 is reached.

**One-family cottages**—Commencing September 1st, 25 per cent to be completed each month until total of 16 is reached.

#### CRISTOBAL.

**Four-family frame quarters and one-family**

**cottages**—These buildings are to be located east of quarantine station and building cannot be commenced until the site, which is low ground, has been filled to grade. It is expected that this work will be completed so that the construction of buildings may be begun about September 1.

#### The "Severn" Returns to the United States.

The old training ship *Severn*, which has been the tender for the submarine flotilla stationed at the Atlantic entrance since December 12, 1913, when it arrived from Guantanamo, Cuba, sailed for Norfolk on Saturday, July 22, in tow of the collier *Nereus*. The cruiser *Charleston* has taken the place of the *Severn* as tender.

The *Nereus* was on her way from Honolulu to Norfolk for a supply of coal. She arrived at Balboa on July 19, carrying a cargo of 700 tons of pontoons, and picked up the *Severn* after completing the transit of the Canal.

#### Draft of Ships in Fresh Water Sections of the Canal.

In order to calculate the draft of a ship in the fresh water section of the Canal, through Gatun Lake, Gaillard Cut, and Miraflores Lake, from her draft in sea water, the Marine Division forces have adopted as a working formula:

Add one-fourth of an inch for each foot of draft in sea water.

Accurate computation in this matter would require consideration of the displacement curve of the ship and the density of the water, as determined by hydrometer tests; but for practical purposes the simple formula is very satisfactory.

Where the water plane area is approximately constant throughout the draft, the draft of a ship in fresh water is about three per cent greater than in salt water. This is based on the ratio of the volume of water weighing one ton. A ton of clean fresh water contains approximately 36 cubic feet; a ton of clear sea water in the open ocean, approximately 35 cubic feet. The depth to which a vessel will sink, displacing water, till it reaches equilibrium will vary as the quantity of water required to make a ton. Accordingly, as 36 is greater by 2.857 per cent than 35, the draft of a rectangular parallelepiped in fresh water is exactly 2.857 per cent greater than in salt water. One-fourth of an inch is slightly over two per cent of a foot; but on account of the sediment in the water in the Cut, due to the dredging operations, and also on account of the fact that the water plane areas are smaller near the keel than near the surface, the local formula gives more nearly accurate results with respect to passage through the Cut than the usual forms of rough calculation.



## CANAL WORK IN JUNE.

Monthly Report of the Acting Governor to the Secretary of War.

BALBOA HEIGHTS, C. Z., July 14, 1916.

The Honorable the Secretary of War,  
Washington, D. C.

SIR: I have the honor to submit the following report of operations on the Isthmus for the month of June, 1916:

Department of Operation and Maintenance.

**Lock operation and maintenance**—In addition to the usual maintenance, operation, and repair work at the locks, the following was the status of work done at the places named at the close of the month: *Pedro Miguel*—Assembling regulating valves for north end, 90 per cent completed. *Miraflores*—Applying bitumastic protective coating to gates and valves in east chamber, completed; applying bitumastic protective coating to gates and valves in west chamber, commenced; track turnout, upper east level, commenced; assembling regulating valves for north end, 16 per cent completed; filling and grading east bank, lower level, 75 per cent completed.

The following commercial lockages were made:

Locks.	Lock-ages.	Vessels.
Gatun.....	110	122
Pedro Miguel.....	121	125
Miraflores.....	122	125

**Electrical Division**—The net output of the power plants was: Gatun hydroelectric station, 3,526,960 kilowatt-hours; Miraflores steam station, 87,490 kilowatt-hours; total, 3,614,450 kilowatt-hours.

The usual maintenance, operation, and repair work was carried on, and construction work was continued for the Canal and the Army.

**Municipal Engineering Division**—In addition to the usual maintenance, operation, and repair work, the following were the principal items of construction work in progress: Construction of water and sewer systems and roads for Fort Sherman and Fort Randolph, this latter being completed during the month; construction of a service road for the new Colon Hospital; water and sewer connections for the Washington Hotel swimming pool; construction of a fence around the oil tank farm at Mount Hope; construction of a retaining wall and concrete drains in front of staff officers' quarters, Quarry Heights; completion of the concrete spillway at Rio Grande; extension of the road from the ordnance storehouse to the dump at Corozal; cleaning up and filling around Balboa dry dock and Pier 18; construction of retaining wall at the coal pocket and other miscellaneous work at the reloader and unloader wharves, Balboa; extension of the roads and water and sewer systems in Balboa townsite; and other road, curb and gutter construction required on account of the new buildings in Ancon-Balboa district.

**Division of Meteorology and Hydrography**—The rainfall for the month was below normal at all stations except Alhajuela and Colon, ranging from 15.73 inches at the Indio station on the upper Chagres to 3.95 inches at Balboa, the maximum precipitation recorded on any one day being 3.60 inches, at Monte Lirio on the 8th of the month. The estimated rainfall over the Gatun Lake watershed was nine per cent below the 6-year normal, and

over the Chagres River basin, above Alhajuela, it was three per cent above normal, totaling 10.87 inches and 13.77 inches, respectively. The Chagres River discharge at Alhajuela was 22 per cent above the 15-year normal, and furnished 53 per cent and 48 per cent, respectively, of the Gatun Lake net and total yields; and the Gatun Lake watershed net and total yields were four per cent above the 6-year June normal. Gatun Lake varied in elevation from 86.56 on the 8th to 85.29 on the 10th, averaging 86.41; and Miraflores Lake varied in elevation from 54.47 on the 24th to 53.67 on the 3rd, averaging 54.01.

Four seismic disturbances were recorded at Balboa Heights during the month, but no damage was reported as a result of any of them.

Division of Terminal Construction.

PACIFIC TERMINALS.

**Dry dock and entrance pier**—One hundred and thirty-seven cubic yards of concrete were placed in grouting in recess covers, fixed irons, and duct lines; pipe piles were driven to prevent settlement of the bollards, which had been placed on earth foundations; cast iron keel blocks were set in the dock floor and about one-third of them grouted in; 430 lineal feet of horizontal fenders were made for the entrance pier; and a temporary blocking system was installed and on June 27 the dredge *Corozal* was taken into the dock, where it underwent repairs.

The docking of the *Corozal* offered the first opportunity to try out the main pumps of the dock. They operated smoothly under zero head. The main pumps were used to pump the dock down after the *Corozal* had entered the dock, and the pumps that were operated at this time worked smoothly. Observation was made of the flooding valves and of hydraulic conditions generally, though at this time only one flooding valve was in action.

**Balboa coal plant**—One thousand lineal feet of horizontal fenders were made up for the unloader wharf, about one-half of this amount being attached to the dock, and 797 lineal feet of horizontal fenders were made up and stored in the coal pocket for future emplacement. The westerly retaining wall of the coal pocket was completed, and the modification of the 50-ton hopper of unloader tower No. 6 was begun; shakedown tests were completed on the towers and the only exceptions noted were the jamming of the duplex valves. On the reloader towers the traversing machinery of tower No. 5 was installed, and the 50-horsepower motor was erected in place in each tower. The total amount of steel erected in the viaduct at the end of the month was 432 tons, and 50 per cent of the creosoted wood ties were placed and bolted. In the transformer house concrete floors were poured, and window sash and glass were installed complete, while the erection of the 440-volt switchboard was five per cent completed. On the wharf bunker the first coat of field paint was 25 per cent completed by the contractors, and around the conveyor tower concrete footings were completed and all window sash and 20 per cent of the glass installed.

**Docks (pier No. 18)**—Considerable work was done by the contractors and the erection of housings for side and end doors was completed; 64 doors on the north and south sides

of the pier, out of a total of 68, were completed; and the riveting of sheeting was practically finished. Rat-proofing work was started on this pier, similar to that performed for the bulkhead wall.

**Excavation and filling**—Four hundred and one cubic yards of earth were excavated for the railroad track scales at the unloader wharf, and 144 cubic yards were excavated for permanent drains to the shops and for bollards at dry dock No. 1.

ATLANTIC TERMINALS.

**East Breakwater**—Fifty-one cubic yards of run-of-bank rock from Sosa Hill were placed; 20,715 cubic yards of coral rock and 2,560 cubic yards of blue rock, excavated by the dredge *Marmot* from the Cristobal coal station, were dumped on the harbor side of the breakwater; and 23,263 cubic yards of concrete were placed, making a total of 46,589 cubic yards of material placed and dumped during the month.

**Concrete blocks**—Pouring of blocks for the East Breakwater continued during the month as follows:

Place.	Blocks poured.	Volume (cubic yards.)	Remaining to be poured (cubic yards.)
*Walker & Torbert (contractors).....	1,606	19,754	10,492
Coco Solo.....	1,071	9,639	7,254
†Cristobal coal plant.....	782	4,145	2,538
Total.....	3,459	33,538	20,284

\* The contract with Messrs. Walker & Torbert was terminated on June 30. The manufacture of the yardage remaining under their contract was transferred to the Coco Solo block-casting plant.

† The manufacture of the remaining authorized yardage was transferred to the Coco Solo block-casting plant on June 26.

**Cristobal coal plant**—The fender system for all wharves was completed, as well as all concrete work pertaining to the coal station. The contractor under Washington order No. 40483 continued work on the various units, including the placing of approximately 16,800 pounds of structural steel for the conveyor trusses between the tower and wharf bunker, making this item about 90 per cent completed. The work on the conveyor belt structure was 95 per cent completed, and on the bunker conveyor 85 per cent completed, while work was started on the erection of the six booms for the bunker chutes. The structural parts of the wharf bunker and tower were 85 per cent completed at the end of the month; the mechanical equipment was 30 per cent completed; and the electrical equipment was about 98 per cent completed. Tests were run on the conveyor car system, and a re-test was made of unloader tower No. 4.

Marine Division.

One hundred and twenty-four vessels passed through the Canal, 54 northbound and 70 southbound. Of this total, 31 were of American register and 59 of British register. Ten vessels were measured, and 90 vessels were inspected to see whether their certificates conformed to the rules, and such changes were made therein as were necessary. The United States net equivalent tonnage was computed on 31 vessels. Statements showing vessels making the transit of the Canal in both directions are appended hereto.\*

\*The information contained in these tables has been published in the weekly reports in THE CANAL RECORD. The statements are therefore not printed.

**Dredging Division.**

The total excavation for the month, including earth, rock, and gravel, was 1,250,640 cubic yards, exclusive of 102,191 cubic yards rehandled and not credited as excavation. Of this total, 15,818 cubic yards of earth and 17,450 cubic yards of rock were removed from the Balboa inner harbor; 8,552 cubic yards of earth from the Canal prism in Miraflores Lake; 56,748 cubic yards of earth and 99,680 cubic yards of rock from Gaillard Cut; and 20,861 cubic yards of earth and 35,655 cubic yards of rock from the Cristobal coaling station. The excavation of sand and gravel from the Chagres River continued, and 3,835 cubic yards of sand, 289 cubic yards of No. 1 gravel, 2,490 cubic yards of No. 2 gravel, and 46,034 cubic yards of run-of-bank gravel, were excavated.

The slides in Gaillard Cut continued active during the month.

The rock breaker *Vulcan* was engaged the entire month in breaking the rock shoal between Stations 2261 to 2267 east, in the Canal prism, near the old Panama Railroad dock at Balboa, 1,141 holes having been broken over an area of 21,900 square feet, with a total penetration of 3,794 lineal feet and a theoretical breakage of 2,250 cubic yards.

The drill barge *Teredo No. 2* was engaged 10 days during the month at Stations 2102 plus 30 to 2103 plus 40 east, at the Pacific entrance of the Canal prism. One hundred and nine holes were drilled, making a total of 2,704 lineal feet, over an area of 2,725 square feet, with a theoretical breakage of 2,503 cubic yards of rock. During the balance of the month the *Teredo No. 2* was under repairs.

Hydraulic graders Nos. 1, 2, and 3, were engaged during the entire month in ditching and sluicing on East Culebra slide.

The work of destroying water hyacinths in the Gatun Lake area continued.

**Mechanical Division.**

Shop orders authorized during the month numbered 876, an increase of 14 as compared with the previous month; those left over from May numbered 607, and those carried forward into July numbered 598. The output of the foundry was 192,641 pounds of iron, 126,266 pounds of steel, and 26,348 pounds of brass. Hostling was done on 4,068 pieces of equipment, and shop and field repairs were made on 5,710 pieces, including 522 cars repaired in the shop.

The new 55,000-barrel fuel oil tank at Balboa was practically completed and connected up to the pumping plant, and work was begun on the erection of a similar tank at Mount Hope. The Martini-Huncke inert gas protecting system was installed by the contractor at the Balboa oil plant, for the protection of the 5,000-barrel gasoline tank. The apparatus worked satisfactorily, and a test of the gases above the gasoline in the tank showed them to be non-explosive.

**Building Division.**

In addition to the usual maintenance, operation, and repair work, the following is the approximate status of the Canal structures in course of construction in the districts named:

Item.	Per cent completed.
Ancon-Balboa—	
Terminal office building.....	100
Concrete bachelor quarters, Ancon.....	100
Ancon laundry.....	98
Building No. 29, Balboa dry dock.....	100
Panama Railroad stables, Chorrillo.....	100

Brick work at Miraflores power house.....	100
Concrete coal bunker on unloader wharf, Balboa coaling plant.....	95
Second unit of Ancon Hospital group.....	Commenced
Laboratory, Ancon Hospital.....	Commenced
Roofs on concrete barges, Dock 17.....	100

Preparatory work was commenced on the construction of the new frame quarters, and at the end of the month foundations had been placed for approximately 55 type-17 cottages. Work was commenced on the erection of 21 of these cottages, and at the end of the month the status of these buildings was as follows:

	Per cent completed.
3 buildings.....	99
1 building.....	98
3 buildings.....	95
3 buildings.....	90
5 buildings.....	80
3 buildings.....	7
3 buildings.....	5

Preparatory work was also commenced on four 4-family concrete quarters, and at the end of the month foundations for each of these buildings had been placed and the basement walls on two had been carried up to the first floor level. The site was cleared for the new electrical storehouse.

	Per cent completed.
Corozal-Darien—	
Mess hall at Miraflores Locks.....	100
Mess hall at Pedro Miguel Locks.....	100
Painting of Darien radio towers.....	33

Preparatory work was commenced on the construction of the new gold quarters at Pedro Miguel, and on the new silver quarters at Red Tank.

	Per cent completed.
Gatun-Colon—	
Office building for coaling station.....	99
Storehouse, Colon Hospital.....	100
Terminal office building.....	35
Ice cream and milk bottling plant.....	65
American Bible Society building.....	85
Freight and baggage house.....	Commenced
Bath house, Washington pool.....	Commenced
Painting of Colon radio towers.....	75
New Cristobal hotel.....	8
Gatun Y. M. C. A. restaurant building.....	15

**Supply Department.**

The force report for the period ended June 21, 1916, showed a total of 23,148 employees of The Panama Canal and the Panama Railroad Company, of whom 3,407 were white Americans and 19,741 laborers. Of the latter, approximately 68 were Europeans and the remainder West Indian negroes. There was a decrease of 72 Americans and a decrease of 373 West Indians negroes, making a net decrease of 445.

The occupants of Government quarters numbered 6,779 Americans, of whom 3,718 were men, 1,500 women, and 1,561 children; and 11,283 West Indians, of whom 6,195 were men, 2,196 women, and 2,892 children.

The value of material received during the month was \$1,055,782.01. It came forward in 29 steamers, and the total weight of cargo, exclusive of lumber and piling, was 32,42 tons. Some of the principal items were 1,973,756 feet, board measure, of lumber for stock; 228,373 sacks of cement; 85,000 barrels of fuel oil; 576,730 pounds of pig iron; and 376,225 pounds of iron castings.

The Balboa oil plant handled 215,054.34 barrels of fuel oil, and the Mount Hope plant handled 35,425.98 barrels, the greater part of the same in each instance having been handled for The Panama Canal.

**Health Department.**

**General**—No case of yellow fever, smallpox,

or plague, originated on or was brought to the Isthmus during the month. The death rate for disease in the Canal Zone, based on a population of 31,034, was 8.12 per thousand per year, as compared with 9.45 for the preceding month and 13.15 for the corresponding month of last year. Twenty-seven deaths occurred in the Canal Zone.

**Employees**—The health of the employees continued good. The number of names on the payrolls for the preceding month was 31,501, and on this basis, the admission to hospitals and quarters, 756, gave a rate of 287.99 per thousand, as compared with 285.45 for the preceding month, and 369.87 for the corresponding month of last year. The admission rates to hospitals and quarters for malaria were: Whites, 64.15; blacks, 16.88; and Americans, 51.62. The total number of deaths from all causes was 20. Of these, 17 died from disease, or 6.48 per thousand, as compared with 3.49 per thousand for the preceding month and 3.61 for the corresponding month of last year. No American employees died from disease or from accidents during the month.

**Accounting Department.**

The cash balance in Canal construction appropriations on June 30, 1916, was \$5,447,238.88, and in the fortifications appropriations, \$950,184.48. The payrolls for June, exclusive of Army quarters, storehouses, fortifications, etc., amounted to \$931,006.28, and the fortifications roll amounted to \$26,749.93. Payments by the Disbursing Clerk in Washington amounted to \$799,480.09, and by the Paymaster on the Isthmus, \$1,253,737.93. Payment of \$237,214.75 was also made to the Panama Railroad Company for commissary books. Collections on the Isthmus amounted to \$1,180,296.01, of which \$570,137.33 was repaid to appropriations, \$236,784.62 was commissary collections and other trust funds, and \$373, 74.06 was miscellaneous receipts, to be covered into the Treasury. Of the miscellaneous receipts, \$359,897.35 was collected on account of tolls. Collections by the Disbursing Clerk at Washington amounted to \$12,607.70, and deposits in the sum of \$237,763.19 were made with the Assistant Treasurers to be applied in payment of tolls and other charges against vessels using the Canal. Canal revenue collections and miscellaneous funds received amounted to \$165,996.39, and disbursements under the same heading amounted to \$313,026.39.

**Executive Department.****DIVISION OF CIVIL AFFAIRS.**

Two hundred and sixty-seven licenses of all kinds were issued. Nineteen estates were received for administration and nine settled, the total cash received during the month amounting to \$712.62, and the total value of the estates closed was \$409.58. At the port of Balboa 120 vessels entered and 115 vessels cleared, and at the port of Cristobal 137 vessels entered and 142 vessels cleared.

**Postal service**—Postmasters remitted on account of money order fees, stamp sales, second-class mail collections, postal due collections, and box rent receipts, \$9,743.84. Money orders issued during the month aggregated \$38,563.27. Of this total, \$75,165 represented the value of deposit money orders issued without fee in lieu of postal savings certificates. Deposit money orders were paid to the value of \$99,295 and postal savings certificates to the value of \$3,466. The



balance of postal savings deposits, represented by unpaid certificates and deposit money orders, aggregated \$364,601, as compared with \$392,197 at the close of the preceding month.

#### POLICE AND FIRE DIVISION.

Three hundred and eighty-four arrests were made, of which total 365 were males. Fifty-one convicts were confined in the penitentiary at the close of the month. Nine persons were deported, five of whom were convicts who had completed their sentence in the penitentiary, and four of whom were prisoners who had served terms in jail.

Six fires occurred, and the property of The Panama Canal suffered damage to the extent of \$142; private property, the property of the Panama Railroad, and the property of the United States Army, suffered no damage.

#### COURTS.

In the District Court 50 cases were settled; seven civil, 27 probate, and 33 criminal cases were filed; and 126 cases of all kinds were pending at the close of the month.

In the magistrate courts 11 civil and 382 criminal cases were disposed of.

#### DIVISION OF SCHOOLS.

The total enrollment was 1,609 for the white schools and 1,047 for the colored schools. In the white schools the net enrollment was 1,366, the average daily attendance 1,005.7, and the average number belonging, 1,036.1. In the colored schools the net enrollment was 783, the average daily attendance 437.2, and the average number belonging 504.9.

All schools were closed at the end of the month for vacation, to be reopened on October 1.

#### Panama Railroad.

The cargo handled at the Colon and Balboa agencies, including rehandled cargo and cargo stevedored, amounted to 222,474 tons, of which 213,991 tons were handled at the Colon agency. The following quantities of coal were bunkered in steamers: Colon agency, 27,800 tons; Balboa agency, 4,621 tons; total, 32,421 tons.

The paving work on pier No. 7, Cristobal, is 21 per cent completed, and 99 per cent of the bricks required have been received, though none were laid during the month. The structural steel work on the shed is 95 per cent completed, and 10 per cent of the tile roofing has been laid. The concrete work on walls and columns is 18 per cent completed.

The work on the extension of the Cristobal mole was continued, and was 25 per cent completed at the end of the month, two holes having been drilled, consisting of 362 lineal feet of wash drilling and 16.2 lineal feet of diamond drilling. The driving of a trestle was started on June 10, and was 70 per cent completed at the end of the month.

Twenty-two thousand, two hundred and fifteen cubic yards of soft rock were dumped on the approach and fill for pier No. 6 and the track yard at Cristobal, approximately completing 20 per cent of the work.

Respectfully,

CHESTER HARDING,  
Acting Governor.

## PLANS FOR NEXT SCHOOL YEAR.

### Increased Number of Teachers.—Permanent Concrete Buildings.

A substantial increase in the number of pupils in the Canal Zone schools is anticipated during the coming year, due to the large number of additional family quarters provided for in the current appropriations and now under construction.

The average daily attendance in the white schools for the year 1915, was 1,006, and for the year 1916, was 1,065. An estimate of the attendance expected during the coming year is 1,400, the largest increases being expected in the towns of Balboa, Ancon, Pedro Miguel and Cristobal. A summary of construction of family quarters proposed and under way is published elsewhere in this issue of THE CANAL RECORD.

#### SCHOOL BUILDINGS.

Plans are now being prepared for new concrete school buildings in Balboa, Ancon, Pedro Miguel, Gatun, and Cristobal. These buildings will be fireproof and will contain all the modern conveniences of an up-to-date school in the United States, such as sanitary fountains, providing a continuous flow of clear cold water from a cooling plant within the building; large airy rooms with light coming from the left side only, the glare of the sun being diffused by ground glass panes in the upper portion of the window; steel window sash, the windows being pivoted to facilitate ventilation; the walls of classrooms to be tinted a neutral color to avoid irritation to the eyes of pupils; blackboards of slate instead of composition. Brief descriptions of the Balboa and Cristobal schools follow. The school at Ancon will be of two stories, containing 10 classrooms and the usual library, principals' room, and toilet conveniences. The schools at Pedro Miguel and Gatun will be alike, being one story in height and containing five classrooms in addition to library, principal's room and toilet conveniences.

*Balboa school*—The new school building will be located on the site of the present structure, which is being moved over toward the Administration Building about 100 feet, and will be built around an interior court. The design leans toward a modified Italian renaissance. In front is a loggia, flanked on both sides with the end walls of the right and left wings of the building, the corners of these walls and the walls adjacent to the projecting loggia being heavily rusticated, while the intervening wall surface above this is treated with a column effect, and the two ends of the building flanking, being treated with a pilaster and blank wall treatment. Band courses form the chief treatment of the building and are carried around the entire school. The court treatment is very simple, the first course being arched, while the second and third courses are column effect.

The first and second floors will contain the grammar school grades, and in addition a principal's room, teachers' room, library and supervisor's room. The third floor will contain the high school division equipped with classrooms, science laboratory and study, and the commercial division classroom, and in addition a large study or assembly room seating about 200 pupils. An innovation is

the open air lunchroom, located over the entrance loggia.

*Cristobal school*—The Cristobal school will be located on the water-front just west of Colon hospital on a site approximately 340 feet wide by 280 feet deep. The ground plan is interesting in that ample space is provided for parking and playground purposes and the building will be set back on the grounds affording a setting similar to that at the Hotel Washington. The building will be two stories in height and will contain on the first floor classrooms, a teacher's room, and lunch room in addition to toilet rooms. The second floor will contain in addition to class rooms, a science laboratory and study, library, and toilet rooms. The exterior of the building will be severely simple with white concrete walls and red tile roof. The only special feature will be a dignified entrance portico facing the sea.

#### Civil Service Examination.

The following civil service examination will be held on the date indicated below, information concerning the same being posted at clubhouses and post-offices, as per the number of announcement indicated:

Aeronautic draftsman (male); \$3.04 a day; examination August 15, 1916; No. 948.

Laboratory assistant (male); \$900 to \$1,200 a year; examination about August 27-28, 1916; No. 947.

Laboratory assistant in ceramics (male); \$900 to \$1,200 a year; examination about August 13, 1916; No. 964.

Apprentice draftsman (male); entrance salary \$360 a year, with possibility of promotion to \$60 a month; examination about August 27, 1916; No. 961.

#### High School Diploma to Be Accepted in Lieu of Entrance Examinations.

The Canal Zone High School has been provisionally accredited by the United States Military Academy under the certificate privilege, which means that the diploma is to be accepted in lieu of mental examination for entrance. This has been done on the recommendation of the United States Commissioner of Education, to whom were presented data on the nature of the school and its work.

Cornell University has granted the High School the same privilege of entrance without examination for those certified to the university on the regular forms; this certificate privilege has been granted for a probationary period of three years, with provisions for its cancellation in case the students admitted under the privilege should not do satisfactory work.

In a memorandum on the subject, the Superintendent of Schools stated:

"The Balboa High School offers the regular four years' high school work. It has a faculty of six teachers, all of whom are college graduates, and two of whom hold the Master's degree from Columbia University.

"Thirty-two credits are required for graduation. To receive a credit a grade of at least 75 per cent must be made in a subject. A credit is a subject successfully carried for one semester of 18 weeks, with five recitations per week, of a minimum length of 40 minutes per recitation."

The number of graduates in the class of 1916 was 16.



## OFFICIAL CIRCULARS.

## Rates of Pay, Gold Roll.

THE PANAMA CANAL,  
PANAMA RAILROAD COMPANY,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., July 1, 1916.

## CIRCULAR No. 601.

To conform with the provisions of the Panama Canal Act, the following ratings and rates of pay are established for employees on the gold roll, effective July 1, 1916:

## OFFICERS AND EMPLOYEES.

Accountant, \$175, \$200, \$225.  
(NOTE—The designation "Accountant" will not be applied to employees whose compensation is less than \$175 per month.)  
Accountant, chief, \$350.  
Agent, assistant, \$75.  
Agent, baggage, \$200.  
Agent, claim, \$150.  
Agent, commercial, \$200.  
Agent, land, \$225.  
Agent, local, \$200, \$225.  
Agent and operator, \$137.50, \$140, \$150.  
Agent, receiving and forwarding, \$275, \$325, \$350, \$400.  
Agent, station, \$187.50, \$200.  
Agent, steamship ticket, \$175.  
Architect, \$250.  
Architect, landscape, \$150.  
Assistant, commissary, \$75, \$87.50, \$100, \$112.50, \$125, \$150, \$175.  
Assistant, office, \$200, \$225.  
Attendant, brake, \$30.  
Attorney, special, \$600.  
Attorney, assistant to counsel (for P. R. R.), \$250.  
Auditor, \$583.33.  
Auditor, traveling, \$175.  
Bacteriologist, \$250.  
Buyer, cattle, \$300.  
Buyer, local, \$175.  
Buyer, products, \$250.  
Captain of the Port, \$416.67.  
Cashier, \$40, \$50, \$60, \$70, \$75, \$100, \$125 (subsistence), \$150 (subsistence).  
Chaplain, \$100.  
Checker, \$50, \$60, \$70, \$75.  
(NOTE—No "shop" checkers to be taken on in future. Vacancies to be filled by clerks.)  
Chemist, \$100, \$125, \$150, \$175, \$200, \$250.  
Chief, Division of Civil Affairs, \$300.  
Chief, Division of Civil Affairs, assistant, \$225.  
Chief timekeeper, \$200, \$225.  
Claim officer, \$225.  
Claim officer, assistant, \$150.  
Clerk, \$40, \$50, \$60, \$70, \$75, \$87.50, \$100, \$112.50, \$125, \$137.50, \$150, \$162.50, \$175, \$187.50, \$200, \$208.33, \$225.  
(NOTE—Not more than \$2.00 per annum will be paid for "clerk" except to those having charge of an office or section thereof, and the amount to be paid will depend upon the duties and responsibilities of the position.)  
Clerk, special, \$250.  
Clerk, chief, \$175, \$200, \$225, \$250, \$300.  
Clerk of court, \$200, \$225.  
Clerk of court, assistant, \$175.  
Collector, \$416.67.  
Collector, deputy, \$125, \$137.50, \$150, \$175, \$200, \$250.  
Collector, train, \$125, \$150.  
Collector, train, extra (per day), \$5.  
Computer, \$100, \$125.  
Constable, \$100.  
Custodian, \$100, \$125, \$150.  
Depot Commissary, \$400.  
Dietist, \$105.  
(NOTE—Subsistence and laundry of uniform furnished.)  
Disinfecter, \$125.  
Disinfecter, master, \$150.  
Dishwasher, \$210.  
Draftsman, \$75, \$100, \$125, \$137.50, \$150, \$162.50, \$175, \$200.  
Draftsman, chief, \$225.  
Druggist, \$100, \$125, \$150.  
Emblamer, \$125.  
Emblamer, cremator, \$100, \$125, \$150.  
Engineer, assistant, \$200, \$225, \$250, \$275, \$300.  
Engineer, designing, \$400.  
Engineer, dock, \$400.  
Engineer, electrical, \$400.  
Engineer, junior, \$175, \$200.  
Engineer of Maintenance, \$625.  
Engineer of Maintenance, assistant to, \$583.33.  
Engineer, mechanical, \$250, \$275.  
Engineer, municipal, \$350.  
Engineer, office, \$300.  
Engineer, resident, \$625.  
Engineer, traveling, \$225.  
Entomologist, \$150.  
Examiner, chief, \$300.  
Executive Secretary, \$500.  
Eye and Ear Clinic, Chief of, \$333.33.  
Fire Protection:  
Inspector, \$200.  
Captain, \$145.  
Lieutenant, \$125.  
Inspector (motor), \$145.  
Fireman, \$100, \$112.50.  
Operator, \$120.  
First Officer, \$145. (Marine Division only.)

Foreman, \$60, \$62.50, \$75, \$87.50, \$100, \$112.50, \$120, \$125, \$135, \$137.50, \$145, \$150, \$160, \$162.50, \$165 (special), \$170, \$175, \$180, \$190, \$200, \$225.  
(NOTE—Maximum for foreman in construction work is \$200.)  
(NOTE—Maximum for foreman in shops is \$225.)  
Foreman, assistant (in shops only), \$150, \$175.  
Foreman, General, \$162.50, \$200, \$225, \$240, \$250, \$275 (in shops only).  
(NOTE—The rating "General Foreman" is applied only to men having under their direction two or more foremen.)  
(NOTE—Maximum for general foreman on construction work is \$225.)  
Foreman, assistant (shop), \$225.  
Gauger, \$125, \$150.  
Guard, quarantine, \$100, \$125.  
Health Officer, \$250, \$300.  
Health Officer, assistant, \$225.  
Health Officer, Chief, \$583.33.  
Horticulturist, \$250.  
Hotel assistant, \$100 (subsistence), \$125 (subsistence).  
Hotel manager, \$200 (subsistence), \$225 (subsistence), \$250 (subsistence).  
Housekeeper, \$30 (subsistence), \$75 (subsistence).  
Hydrographer, \$100, \$125, \$150, \$162.50.  
Hydrographer, chief, \$225.  
Hydrographer, chief, assistant, \$175.  
Inspector, \$100, \$112.50, \$125, \$135, \$137.50, \$145, \$150, \$162.50, \$175, \$200, \$210, \$225.  
(NOTE—Maximum authorized rate for sanitary inspector is \$175.)  
Inspector, General, \$375.  
Intern, no salary.  
(NOTE—Allowed free subsistence, lodging, laundry, transportation to and from the United States when taking authorized leave and other privileges of Panama Canal employees. See conditions of employment governing appointment.)  
Keeper, signal, \$75.  
Laboratory assistant, \$90, \$105.  
Laboratory, chief of, \$350.  
Levelman, \$100, \$112.50, \$125.  
Librarian, \$75, \$87.50, \$125.  
Lightkeeper, \$75.  
Magistrate, \$250.  
Manager, \$75, \$100, \$125, \$137.50, \$150, \$200.  
Manager, assistant, \$125.  
Marine positions (see schedule of dredging positions).  
Marshall, deputy, \$125, \$150.  
Master of transportation, \$300.  
Master (hydraulic grader), \$180.  
Mate (hydraulic grader), \$145.  
Matron, \$50, \$75.  
Measurer, \$175, \$200.  
Medical clinic, chief of, \$375, \$500 (special).  
Meteorologist, \$150, \$162.50 (special).  
Female, female, \$65, \$70, \$75, \$80, \$85.  
(NOTE—Subsistence and laundry of uniforms furnished also applies to special and chief nurse, both female.)  
Nurse, special, \$105.  
Nurse, chief, \$155.  
Nurse, male, \$90, \$95, \$100, \$105, \$125.  
Observer, \$100, \$125, \$137.50.  
Operator and ticket agent, \$150.  
Pathologist, \$250.  
Paymaster, \$416.67.  
Paymaster, assistant and cashier, \$325.  
Paymaster, assistant, \$225.  
Photographer, \$200.  
Physician, \$150, \$200, \$220, \$250, \$300 (special).  
Physiologist, \$250.  
Pilot, \$200, \$225, \$250.  
(NOTE—Entrance rate \$200. Increase of \$25 each six months until maximum is reached.)  
Police and Fire Division, chief of, \$333.33.  
Inspector, \$200.  
Captain, \$160.  
Lieutenant, \$140.  
Sergeant, \$130.  
Policeman, \$93, \$112.50, \$125.  
Postmaster, \$15 (special), \$25 (special), \$30 (special).  
Postmaster:  
Pedro Miguel, \$104.17.  
Corozal, \$104.17.  
Culebra, \$215.  
Las Cascadas, \$145.83.  
Gatun, \$145.83.  
Paraiso, \$145.83.  
Empire, \$156.25.  
Balboa Heights, \$177.08.  
Bilcoo, \$215.77.  
Cristobal, \$207.83.  
Colon, \$281.24.  
Postmaster, assistant, \$137.50, \$150.  
(NOTE—Based upon provisions of Section 720 U. S. Postal Laws and Regulations, edition of 1913.)  
Quarantine officer, \$100, \$300 (special), \$316.67 (special).  
Quarantine officer, assistant, \$150, \$200.  
Quarantine officer, chief, \$375.  
Quartermaster, chief, \$583.33.  
Quartermaster, chief, assistant, \$400.  
Quartermaster, district, \$225, \$250, \$275.  
Quartermaster, district, assistant, \$175, \$150, \$125.  
Recorder, Board of Local Inspectors, \$200.  
Recorder, electrical, \$175.  
Recorder, locks, \$150.  
Reporter, \$200.  
Roadmaster, \$300.  
Rodman, \$60, \$83.33.  
Salesman, head, \$75, \$87.50, \$100, \$112.50, \$125.

Saleswoman, \$40, \$50, \$60, \$70, \$75, \$87.50.  
Secretary, \$200, \$250.  
Secretary, clubhouse, \$100, \$150, \$175.  
Secretary, clubhouse, assistant, \$125.  
Steward, \$60, (subsistence), \$75 (subsistence), \$100 (subsistence), \$112.50 (subsistence), \$120, \$125 (subsistence), \$137.50 (subsistence), \$145, \$175 (subsistence, special).  
Storekeeper, \$100, \$125, \$150, \$175, \$200.  
Storekeeper, assistant, \$70, \$75, \$87.50, \$100.  
Storekeeper, dock, \$150, \$200, \$225, \$250.  
Superintendent, \$175 (Palo Seco), \$200, \$225, \$250, \$275, \$300, \$350.  
Superintendent, assistant, \$250, \$400.  
Superintendent, floating derrick, \$100, \$146.67.  
Superintendent, marine, \$583.33.  
Superintendent, mechanical, \$500.  
Superintendent, Panama R. R. Co., \$300.  
Superintendent, \$175, \$200, \$225, \$250.  
Supervisor, assistant, \$75.  
Surgical clinic, chief of, \$375, \$500 (special).  
Surveying officer, \$250.  
Surveying officer, assistant, \$175.  
Teacher, elementary, \$95.  
(NOTE—Includes teacher of Spanish grades.)  
Teacher, high school, \$120.  
Teacher, science, \$145.  
Teacher, high school, principal, \$165.  
Teacher, supervisor of lower grades, \$175.  
Teacher, supervisor of industrial training, \$200.  
Teacher, principals (in addition to regular salaries as teachers):  
Two-room buildings, \$10.  
Three to five-room buildings, \$15.  
Six to eight-room buildings, \$20.  
Nine to twelve-room buildings, \$25.  
Buildings with more than 12 rooms, \$40.  
Line teachers (equivalent to principal of three to five-room buildings), \$15.  
(NOTE—All teachers, except Supervisor of Industrial Training, to receive a base of \$5 per month each year for three years contingent upon satisfactory service.)  
Timekeeper, \$87.50, \$125 (special), \$137.50 (special).  
Tracer, \$60, \$75.  
Trainmaster, terminal, \$225.  
Translator, \$125, \$150, \$175.  
Transman, \$137.50, \$150, \$162.50, \$175.  
Veterinarian, \$150.  
Veterinarian and meat inspector, \$200.  
Weighmaster, \$100, \$125.  
Wire chief, \$100.  
Wreckmaster, \$175, \$225.  
Yardmaster, \$150, \$170, \$175, \$190, \$210.  
Yardmaster, assistant, \$150.  
  
SKILLED AND UNSKILLED LABOR.  
Anglemith (per hour), 71 cents.  
Apprentice (per hour), 13, 20, 28, 36 cents.  
Baker (per month), \$100, \$125.  
Barber (per month), \$1 (special).  
Blacksmith (per month), \$125, \$140; (per hour), 32, 38, 44, 50 cents.  
Blacksmith, heavy forger (per hour), 77 cents.  
Blacksmith, shipsmith (per hour), 66 cents.  
Boatbuilder (per hour), 50, 65 cents.  
Boatswain of (per month), \$90 (Marine Division only—Subsistence).  
Boiler-maker (per hour), 32, 38, 44, 50, 56, 65 cents.  
Boilerscaler (per month), \$100.  
Bricklayer (per hour), 32, 38, 44, 50, 56, 72, 75, 84 cents.  
Butcher (per month), \$100, \$125, \$137.50.  
Cabinetmaker (per hour), 56, 66 cents.  
Car inspector (per month), \$150; (per hour), 50 cents.  
Car repairer (per hour), 32, 38, 44, 50, 56 cents.  
Carpenter, car (per hour), 32, 38, 44, 50, 56 cents.  
Carpenter, house (per month), \$150; (per hour), 32, 38, 44, 50, 56, 62, 67 cents.  
Carpenter, fleet (per month), \$145.  
Chauffeur (per month), \$100, \$125.  
Chauffeur, motor bus (per month), \$125, \$140.  
Chef (per month), \$125 (subsistence).  
Chilper and caulker (per month), 50, 55, 61 cents.  
Conductor, qualified (per month), \$190.  
Conductor, switch or yard (per month), \$150.  
Cook (per month), \$75 \$87.50, \$100, \$112.50, \$125, \$137.50 (all rates include subsistence).  
Cowswain (per month), \$45, \$50, 60 cents.  
Cowswain (per month), \$75, \$95.  
Cowswain engine (per month), \$130, \$145.  
Civ. tender (per month), \$125.  
Craneman, steamshovel (per month), \$167.50.  
Diver (per hour), \$1.53; (per day), \$15.  
Drill runner (per month), \$155 (drill barge).  
Egg candler (per month), \$125.  
Electrician, floating derrick (per month), \$170.  
Electrician (per month), \$150 (coaling plants only).  
Electroplater (per hour), 51, 55, 56, 60 cents.  
Engineer (per month), \$150 (Marine Division only).  
Engineer, locomotive, qualified (per month), \$225.  
Engineer, locomotive, switch or yard (per month), \$150.  
Engineer, marine (For marine and dredge engineers see special schedule for dredging positions).  
Engineer, marine (hydraulic grader) (per month), \$155, \$165.  
Engineer, station (per month), \$225, \$250, \$100, \$125, \$135, \$137.50, \$150, \$175, \$200 (per hour), 50, 56 cents.  
(NOTE—The rating "Steam engineer" covers: Crane engineer (locomotive), compressor engineer, dynamo engineer, hoisting engineer, Lidgetwood engineer, operator of clam-shell or orange-peel dredge, piledriver engineer, pumpman, road roller engineer, stationary engineer, and track-shifting engineer. The designation of "Steam engineer" will be used on pay rolls and other official papers and the sub-title describing more minutely the duties of the individual employee will not be

necessary except in a note on applications for increase of pay or force.)

Maximum authorized rate for steam engineers on hoisting and track-shifting engines, and on pile drivers is \$125.

Maximum authorized rate for pumpman is \$135.

Maximum authorized rate for steam engineers on clam-shell and orange-peel dredges and locomotive cranes is \$150.

Engineer, refrigerating (per month), \$175.  
Engineer, steam-hovel (per month), \$218.  
Fireman (per month), \$60 (Marine Division only. Sub-sistence.)

Flangetter (per hour), 65, 71 cents.

Helper (per hour), 25, 38, 40 cents.

Hostler (per month), \$125, \$137.50.

Ironworker (per hour), 25, 44, 50, 56, 65, 75 cents.

(NOTE.—This designation includes bolters-on, angle-iron-smiths, erectors, snappers, and rivet heaters.)

Lampist (per month), \$175.

Lineman, high tension (per month), \$156.

Lineman, power and light (per month), \$145; (per hour), 69 cents.

Machinist (per month), \$120, \$125, \$130, \$140, \$150, \$165, \$175 (special); (per hour), 25, 32, 38, 44, 50, 56, 60 cents.

Maintainer (signal) (per month), \$110, \$125, \$137.50.

Metal lather (per hour), 32, 44, 50, 56, 65, 75 cents.

Molder (per hour), 32, 38, 44, 50, 56, 65 cents.

Motorman (Railroad motor cars) (per month), \$150.

Nozzleman (hydraulic dredger) (per month), \$135.

Oilier (per month), \$100.

Oilier (oil tugs) (per month), \$70 (Marine Division only. Sub-sistence.)

Operator (electric), air compressor (per month), \$150.

Operator (electric), DeMayo (per month), \$150.

Operator (electric), crane (per month), \$83.33, \$100, \$125, \$137.50, \$150; (per hour), 38, 44, 50 cents.

Operator (electric), crane, sand (per month), \$150.

Operator (electric), floating derrick (per month) \$180.

Operator (electric), locks, control house (per month), \$150, \$162.50, \$175.

Operator (electric), locks, general (per month), \$162.50.

Operator (electric), locks, towing locomotive (per month), \$150.

Operator (electric), pump (per month), \$125, \$135.

Operator (electric), pump, Gamboa station (per month), \$150.

Operator (electric), pump, oil (per month), \$150.

Operator (electric), switchboard—PP (per month), \$125, \$137.50, \$150.

Operator (electric), switchboard—PP—chief (per month), \$175.

Operator (electric), tower (coaling plant) (per month), \$150, \$175.

Operator, Brown coal hoist (per month), \$175.

Operator, dipper dredge (See schedule of dredging positions).

Operator, filter (per month), \$100, \$125.

Operator, monotype (per month), \$75, \$100, \$125, \$150, \$175.

Operator, motor boat (per month), \$60, \$75, \$90, \$100.

Operator, pontoon bridge (per month), \$125.

Operator, sandblast (per hour), 52 cents.

Operator, telegraph (per month), \$100, \$125, \$137.50, \$150.

Operator, telephone (per month), \$25, \$50, \$60, \$70, \$75.

Operator, telephone, chief (per month), \$85, \$100.

Painter, house and car (per hour), 32, 38, 44, 50, 56, 60 cents.

Painter, letterer and grainer (per hour), 70 cents.

Painter, sign (per hour), 81 cents.

Patternmaker (per hour), 65, 75 cents.

Pipewriter (per month), \$125, \$137.50; (per hour), 32, 38, 44, 50, 56, 65 cents.

Planning mill hand (per hour), 32, 38, 44, 50, 56 cents.

Plaster (per hour), 38, 44, 50, 56, 65, 70, 75 cents.

Plumber, construction (per hour), 44, 50, 56, 65, 70, 75 cents.

Plumber, maintenance (per month), \$143.

Rigger (per month), \$125, \$150; (per hour), 38, 44, 50, 56, 64 cents.

(NOTE.—Maximum rate on coaling plants \$125.)

Riveter (per hour), 56, 63 cents.

Roofer (per hour), 56, 61 cents.

Seaman (Marine Division only) (per month), \$45 (subsistence), \$50 (subsistence), \$55 (subsistence).

Sheet metal worker (per hour), 56, 65, 69 cents.

Ship joiner (per hour), 66 cents.

Shipwright (per hour), 32, 38, 44, 50, 56, 60, 65 cents.

Shipwright (per hour), 44, 50, 56, 60 cents.

Tiltsorter (per hour), 77 cents.

Typewriter and adding machine repairer (per month) \$100, \$125, \$150.

Watchman (per month), \$37.50, \$75, \$80, \$88.

Welder, acetylene (per hour), 56, 60, 63 cents.

Welder, electric (per hour), 56, 60, 63 cents.

Wireman (per month), \$125, \$137.50, \$150, \$162.50; (per hour), 25, 32, 38, 44, 50, 56, 65, 69 cents.

A rate of the first class pay of a trade plus 15 per cent is authorized for Leadingman.

SCHEDULE OF POSITIONS AND PAY IN THE DREDGING WORK OF THE PANAMA CANAL.

Maximum monthly rates are shown in the following table, on nonsubsistence basis. Subsistence is furnished on practically all vessels in the dredging service of The Panama Canal, although for record and accounting convenience nonsubsistence base rates are quoted below. Deduction of \$20 per month from rates given in table will be made to cover subsistence charge.

\*ENTRANCE SALARIES (TUGBOAT AND SELF-PROPELLING BARGE SERVICE.)

Entrance salaries for positions on tugs (large and small) and self-propelling barges (Classes 6 and 7) are \$10 less than rates in schedule, increasing to maximum after six months' satisfactory service.

Entrance rates for relief mates and engineers (positions which are not assigned to any particular piece of equipment) are also \$10 less than rates shown on schedule for mates and assistant engineers on self-propelling barges. After six months' satisfactory service, the maximum rate indicated on schedule is paid. Promotions are made from this list to regular assignments on tugboats, with corresponding increase in salary.

Promotions of a higher grade are filled by promotion from lower grades.

UNITED STATES LICENSE REQUIRED.

All applicants for deck and engine room positions Panama Canal service, listed on following schedule must forward United States license with applications, except positions under Classes 3 (15-yard dipper dredges), 4 (pipeline suction dredges), and 10 (drill barge).

Joiner, master of craneboat LaValley and floating cranes Ajax and Hercules.

Class.	Vessels included.	Master.	Mate.	Mate.	Mate.	Chief Engineer.	Eng- neer.	Eng- neer.	Eng- neer.	Oper- ator.	Oper- ator.	Oper- ator.
1	Sea-going suction dredges.	\$246 50	\$168	\$151	\$151	\$227 50	\$181	\$169	\$169	.....	.....	.....
2	Ladder or elevator dredges, large.	225 00	200	190	190	225 00	201	193	193	.....	.....	.....
3	Dipper dredges, 15-yard.	235 00	200	190	190	230 00	185	185	185	\$225	\$225	.....
4	Pipeline suction dredges.	220 00	195	185	185	195 00	155	145	145	170	155	155
5	Ladder or elevator dredges, small.	190 00	180	180	180	180 00	180	180	180	.....	.....	.....
6	Tugs, large.	*200 00	*190	*190	.....	*190 00	*185	*185	.....	.....	.....	.....
7	Tugs, small; self-propelling barges.	*175 00	*160	*160	.....	*170 00	*160	*160	.....	.....	.....	.....
8	Launches, steam.	1 00	1 00	.....	.....	10 00	10 00	.....	.....	.....	.....	.....
9	Floating cranes.	1245 00	191	.....	.....	195 00	185	120	.....	.....	.....	.....
10	Drill barge.	205 00	180	.....	.....	.....	.....	.....	.....	.....	.....	.....

CHESTER HARDING,

Acting Governor, The Panama Canal.

Second Vice-President, Panama Railroad Co.

#### Classified Service Appointments.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 17, 1916.

CIRCULAR NO. 601-52:  
The Executive Order quoted below is published for the information of all concerned.

CHESTER HARDING,

Acting Governor.

Mr. Warren J. Brown, Mr. Henry C. Mansfield, and Mrs. Florence E. Cleveland may be appointed as clerks in the classified service of the Government without reference to the civil service rules.

This order is issued upon the recommendation of the Secretary of War, who submits a detailed report from the Governor of The Panama Canal, giving special

reasons as to why the same should be issued, in view of which it is believed that the appointment of these three persons will be in the interest of the service. From the Governor's report it appears that Messrs. Brown and Mansfield have rendered long and very satisfactory service in the employment of the Government on the Isthmus of Panama and that Mrs. Cleveland, whose husband was killed May 23, 1916, while employed as an operator on one of the towing locomotives of the Panama Canal, has been employed in an exempted position in the Panama Canal service since November 16, 1914, in which position it appears she has rendered very satisfactory service.

The Civil Service Commission does not concur in the recommendation.

THE WHITE HOUSE,

June 30, 1916.

WOODROW WILSON,

#### Act of Congress—Relief and Protection of American Seamen—Payment to Government of Panama.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 18, 1916.

CIRCULAR NO. 600-22:

The extracts from an Act of Congress quoted below are published for the information of all concerned.

CHESTER HARDING,

Acting Governor.

AN ACT making appropriation for the Diplomatic and Consular Service for the fiscal year ending June thirtieth, nineteen hundred and seventeen—

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums, be, and they are hereby, severally appropriated, in full compensation for the Diplomatic and Consular Service for the fiscal year ending June 30, 1917, out of any money in the treasury not otherwise appropriated for the objects hereinafter expressed, namely:

\* \* \* \* \*  
Payment to the Government of Panama: To enable the Secretary of State to pay to the Government of Panama the fifth annual payment due on February 26, 1917, from the Government of the United States to the Government of Panama under article 14 of the treaty of November 18, 1903, \$250,000.

\* \* \* \* \*

RELIEF AND PROTECTION OF AMERICAN SEAMEN.

Relief and protection of American seamen in foreign countries, and in the Panama Canal Zone, and shipwrecked American seamen in the territory of Alaska, in the Hawaiian Islands, Porto Rico, and the Philippine Islands, \$40,000.

\* \* \* \* \*

Approved, July 1, 1916.

#### Reimbursement for Personal Expenditures.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 20, 1916.

CIRCULAR NO. 658-3:

1. Panama Canal circular No. 635, paragraphs 5 to 13 inclusive, authorizing reimbursement for meals, is hereby interpreted to authorize reimbursement at the rate therein specified for the necessary meals for a period not exceeding three days at any one place.

2. Effective at once, when employees are ordered away from their regular stations for temporary duty for a period exceeding three days, a written order for such detail must be issued by the head of the department or division where employed, stating the necessity for assigning such employees to temporary duty at places other than their official stations. Employees so detailed who keep house at their official station, will be reimbursed 50 per cent of the amount actually expended by them for subsistence, not exceeding 30 per cent of the amount allowed as reimbursement for meals under paragraph 5 to 13, inclusive, of circular No. 658, as amended by circular No. 638-2. Employees who subsist themselves at their official station by boarding at a monthly rate, will be reimbursed their actual additional expense not exceeding amount specified in the circulars above referred to.

3. The original orders for temporary detail away from the official stations of such employees must accompany the claims for reimbursement when transmitted to the Auditor of The Panama Canal.

CHESTER HARDING, Acting Governor.

#### Showing Passes on Labor Trains.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 13, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

To all concerned—The attention of this office has been invited to the difficulty that the conductor on the Panama-Balboa-Fort Grant labor train is having on account of the failure of some of the employees to have their passes ready for his inspection.

Employees holding passes are expected to cooperate with the conductor, as any delay in showing transportation retards the conductor in the collection of fares and causes loss of revenue to the railroad.

Any employee who intentionally hinders the conductor in the performance of his duties will be reported to this office for such discipline as his conduct may warrant.

CHESTER HARDING,

Acting Governor, The Panama Canal.

Second Vice-President, Panama Railroad Company.

#### Unserviceable Valves.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 18, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

In future, when valves (gate, globe, etc.) become un-



serviceable, they should be shipped to the Mechanical Division, Balboa, without papers, other than a memorandum of the shipment, and the Mechanical Division will in turn issue blanket shop order covering repairs to these valves, the repairs to consist of assembling good valves out of the various pieces insofar as possible, after which manufacturer's invoice will be made on the Supply Department for the valves recovered at the value of new material.

CHESTER HARDING,  
Acting Governor, The Panama Canal.  
Second Vice President, Panama Railroad Company.

### Three Tent Files Lost.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 19, 1916.

### HEADS OF DEPARTMENTS AND DIVISIONS:

In connection with the Fourth of July celebration three large tent files marked with cross guns and "L. 29th Infantry," have disappeared.

It is imperative that these tent files be located and returned to the Commanding Officer, Company L, 29th Infantry, Provost Guard, Quarry Heights, without delay. You are directed to use every means in your power to locate these tent files and report the result of your efforts to this office at once.

By direction of the Acting Governor.

C. A. McILVAINE,  
Executive Secretary.

### Amended Schedule of Panama Railroad Ships.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 20, 1916.

To all concerned.—The following amended schedule of sailings of Panama Railroad steamers from New York is quoted from cablegram dated July 18:  
Steamship *Cristobal*, Thursday, July 27.  
Steamship *Colon*, Thursday, August 3.  
Steamship *Advance*, Thursday, August 10.  
Steamship *Alhambra*, Thursday, July 17.  
Steamship *Cristobal*, Thursday, August 24.  
Steamship *Colon*, Thursday, August 31.

C. A. McILVAINE,  
Executive Secretary.

### Special Delivery of Fuel.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., July 22, 1916.

### BULLETIN No. 656:

To commissary managers—So many orders for fuel are being placed for delivery the same day that the practice has become an abuse which it is necessary to curtail.

Effective Monday, July 24, a special delivery charge of 10 cents per hundred pounds of coal and five cents per sack of wood on all orders for delivery the same day will be assessed. The revenue derived from such special delivery charges will accrue to the Commissary branch.

Please bring the above to the attention of your trade.

WM. R. GROVE,  
Chief Quartermaster.

### Air Compressor Plant Equipment for Sale.

Sealed proposals will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 2 p. m., August 23, 1916, for the purchase of a lot of generator sets, air compressors, boilers, etc., from the Balboa air compressor plant. Circular giving full information and form of proposal may be obtained upon application to the Chief Quartermaster, Balboa Heights.

### Acting Storekeeper, Medical Storehouse.

THE PANAMA CANAL,  
HEALTH DEPARTMENT,  
BALBOA HEIGHTS, C. Z., July 22, 1916.

To all concerned.—During the absence of Mr. Ora M. Ewing on leave, commencing July 25, 1916, Mr. Madison F. Bradley is designated as acting storekeeper, medical storehouse.

D. C. HOWARD,  
Chief Health Officer.

### Commissary Hours.

The open hours of the various commissary stores are as follows:

The commissary stores at Las Cascadas, Empire, Culabra, and Toro Point are open from 7.30 to 11.30 a. m., and 1.30 to 5.30 p. m.

The Cristobal store is open from 8 a. m. to 12 m., and 3 to 6.30 p. m.

All other commissary stores are open from 8 a. m. to 12.30 p. m., and 3 p. m. to 6 p. m.  
The gold departments of the Cristobal commissary store open at 2 p. m. on Saturdays and sailing days of Panama Railroad vessels.

## SHIPPING INFORMATION.

Tide Predictions, Port of Balboa.  
Panama (Balboa) tide predictions for the period until August 31 are given in this table:

JULY.					
DATE.	Time and height of high and low water.				
Wed., July 26.....	1:12 11.3	7:09 4.6	13:25 12.2	19:46 3.6	
Thurs., July 27.....	2:09 11.8	8:07 4.2	14:17 12.6	20:39 2.9	
Fri., July 28.....	2:56 12.3	8:57 3.5	15:01 13.1	21:21 2.2	
Sat., July 29.....	3:37 13.0	9:39 2.8	15:41 13.6	22:00 1.5	
Sun., July 30.....	4:14 13.5	10:17 2.2	16:18 14.0	22:34 1.0	
Mon., July 31.....	4:48 14.0	10:52 1.7	16:53 14.3	23:07 0.8	

AUGUST.					
DATE.	Time and height of high and low water.				
Tues., Aug. 1.....	5:21 14.4	11:26 1.5	17:28 14.4	23:39 0.8	
Wed., Aug. 2.....	5:52 14.6	12:00 1.4	18:01 14.4		
Thurs., Aug. 3.....	0:11 1.0	6:22 14.7	12:33 1.5	18:33 14.2	
Fri., Aug. 4.....	0:44 1.3	6:52 14.6	13:09 1.8	19:07 13.9	
Sat., Aug. 5.....	1:18 1.8	7:24 14.5	13:49 2.2	19:44 13.4	
Sun., Aug. 6.....	2:00 2.4	8:02 14.1	14:37 2.7	20:27 12.8	
Mon., Aug. 7.....	2:48 3.1	8:49 13.6	15:34 3.2	21:23 12.2	
Tues., Aug. 8.....	3:49 3.7	9:50 13.1	16:42 3.4	22:39 11.9	
Wed., Aug. 9.....	5:01 4.0	11:01 13.0	17:58 3.1		
Thurs., Aug. 10.....	0:04 12.2	6:20 3.6	12:32 14.3	19:11 2.3	
Fri., Aug. 11.....	1:18 13.2	7:34 2.7	13:41 14.3	20:15 1.1	
Sat., Aug. 12.....	2:20 14.4	8:38 1.4	14:41 15.3	21:09 -0.2	
Sun., Aug. 13.....	3:15 15.6	9:31 0.2	15:35 16.1	21:57 -1.2	
Mon., Aug. 14.....	4:06 16.6	10:19 -0.8	16:26 16.7	22:42 -1.8	
Tues., Aug. 15.....	4:55 17.3	11:04 -1.3	17:15 16.9	23:25 -1.8	
Wed., Aug. 16.....	5:40 17.4	11:47 -1.3	18:01 16.6		
Thurs., Aug. 17.....	0:07 -1.3	6:23 17.1	12:30 -0.8	18:44 16.0	
Fri., Aug. 18.....	0:49 -0.4	7:05 16.3	13:15 16.1	19:27 15.0	
Sat., Aug. 19.....	1:35 0.9	7:46 15.2	14:01 16.3	20:10 13.0	
Sun., Aug. 20.....	2:22 2.2	8:29 14.0	14:52 2.6	20:55 12.6	
Mon., Aug. 21.....	3:15 3.5	9:19 12.8	15:48 3.7	21:57 11.5	
Tues., Aug. 22.....	4:15 4.6	10:21 11.8	16:54 4.4	23:10 10.8	
Wed., Aug. 23.....	5:24 5.1	11:41 11.3	18:06 4.6		
Thurs., Aug. 24.....	0:38 10.8	6:37 5.2	12:57 11.5	19:15 4.3	
Fri., Aug. 25.....	1:43 11.4	7:41 4.6	13:54 12.0	20:10 3.5	
Sat., Aug. 26.....	2:31 12.1	8:33 3.8	14:39 12.7	20:56 2.6	
Sun., Aug. 27.....	3:10 12.9	9:16 2.8	15:18 13.4	21:35 1.8	
Mon., Aug. 28.....	3:46 13.7	9:54 1.9	15:54 14.0	22:09 1.2	

DATE.	Time and height of high and low water.			
Tues., Aug. 29.....	4:18 14.5	10:28 1.2	16:30 14.5	22:42 0.7
Wed., Aug. 30.....	4:50 14.8	11:01 0.8	17:03 14.7	23:14 0.5
Thurs., Aug. 31.....	5:21 15.2	11:34 0.5	17:37 14.9	23:46 0.6

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0 (midnight) to 24 (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

### Rainfall from July 1 to 22, inclusive.

STATIONS.		Maximum in one day.		Date.		Total for period.	
Pacific Section—		Ins.				Ins.	
Balboa.....		2.25	10			7.86	
Balboa Heights.....		2.73	10			8.10	
Miraflores.....		1.35	10			6.10	
Pedro Miguel.....		9.08	19			4.97	
Rio Grande.....		1.05	16			3.82	
Central Section—							
Culabra.....		1.02	19			5.04	
*Camacho.....		1.77	16			5.45	
Empire.....		.75	10			4.45	
Camboia.....		1.69	6			5.89	
*Juan Milla.....		1.77	8			7.41	
Alhajuela.....		4.06	5			8.18	
*Vigia.....		2.10	5			8.84	
Frijoles.....		.96	21			4.68	
*Trinidad.....		1.28	17			5.72	
*Moque Lirio.....		1.92	8			6.00	
Atlantic Section—							
Gatun.....		1.61	5			5.69	
*Bratos Brook.....		.10	8			9.01	
Colon.....		2.39	3			8.63	
Bocas del Toro.....		.37	5			1.45	

\*Standard rain gage—readings at 5 p. m. daily. Automatic rain gage at unstarred stations—values midnight to midnight.

### Maximum Stages of the Chagres River, Gatun Lake and Miraflores Lake.

Maximum heights of the Chagres River, Gatun and Miraflores Lakes for the week ending at midnight, Saturday, July 22, 1916:

STATIONS.		Day and Date.		Vigil.		Alhajuela.		Camboia.		Gatun Lake.		Miraflores Lake.	
Sun., July 16.....		132.90		97.43		86.44		86.39		39.54		22.42	
Mon., July 17.....		129.45		94.92		86.43		86.40		45.25		23.14	
Tues., July 18.....		128.90		94.96		86.43		86.41		54.15		23.46	
Wed., July 19.....		128.30		94.86		86.43		86.43		54.22		23.46	
Thurs., July 20.....		127.40		93.85		86.43		86.43		54.22		23.46	
Fri., July 21.....		128.70		94.30		86.46		86.46		55.54		23.46	
Sat., July 22.....		127.60		93.59		86.44		86.42		54.08		23.46	
Height of low water to nearest foot.....		125.0		91.0									

### Sailings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.		Vessel.		Line.		Sails.		Arrives.	
Zacapa.....		U. F. C.		July 19.....		July 26			
Alhambra.....		P. R. R.		July 20.....		July 26			
CRISTOBAL-COLON TO NEW YORK.									
Colon.....		P. R. R.		July 27.....		Aug. 2			
Amirante.....		U. F. C.		July 27.....		Aug. 3			
NEW ORLEANS TO CRISTOBAL-COLON.									
Cartago.....		U. F. C.		Aug. 2.....		Aug. 7			
Abangares.....		U. F. C.		Aug. 5.....		Aug. 12			
Heredia.....		U. F. C.		Aug. 9.....		Aug. 14			
CRISTOBAL-COLON TO NEW ORLEANS.									
Heredia.....		U. F. C.		July 30.....		Aug. 4			
Turkey.....		U. F. C.		July 30.....		Aug. 7			
Parissima.....		U. F. C.		Aug. 6.....		Aug. 11			
Atenas.....		U. F. C.		Aug. 6.....		Aug. 14			



\*Other than ships passing through the Canal.



## The Canal Record

Official publication of *The Panama Canal*.

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Address all Communications,  
THE CANAL RECORD,  
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Isthmus of Panama.

### CANAL TRAFFIC FOR FISCAL YEAR.

#### Summary of Operations for Year Ending June 30, 1916—Operations in June.

The number of oceangoing vessels passing through the Canal during the period from July 1, 1915, to June 30, 1916, inclusive, was 787. Their aggregate net tonnage, according to the rules for the measurement of vessels for the Panama Canal, was 2,479,761. The total quantity of cargo carried through the Canal on these ships was 3,140,046 tons. The aggregate of the tolls collected from the ships was \$2,399,830.42.

The Canal was closed in the middle of September and remained closed, except for the transit of small vessels which had waited at the entrances for passage, until the middle of April. There were thus five months of the 12 in which the Canal was in normal operation. Considering the vessels which waited for the reopening and those which came early in April for passage, in anticipation of the opening which had been announced for April 15, the operations may be considered normal for slightly less than half the year.

The number of ships which passed through the Canal during the preceding fiscal year (the Canal was opened to commercial traffic for the first time on August 15, 1914) was 1,088. Their aggregate net tonnage was 3,843,035. The cargo they carried through the Canal amounted to 4,969,792 tons. Their tolls amounted to \$4,343,383.69, after all refunds had been made.

For convenience, the traffic in the two years may be compared in this form:

Item	Fiscal year 1915.	Fiscal year 1916.	Per cent 1916 of 1915.
No. of vessels.....	1,088	787	72.3
Net tonnage.....	3,843,035	2,479,761	64.5
Tons of cargo.....	4,969,792	3,140,016	61.4
Tolls.....	\$4,343,383.69	\$2,399,830.42	55.3

Detailed figures on the traffic during the past fiscal year are given in the appended tables.

During the month of June the number of oceangoing vessels making the transit of the Canal was 124. Of these, 70 passed from the Atlantic to the Pacific. Their net Canal tonnage aggregated 236,258, and their cargo amounted to 292,771 tons.

The vessels moving through the Canal from the Pacific to the Atlantic during June numbered 54, with an aggregate net Canal tonnage of 163,686, and carrying 225,020 tons of cargo.

The vessels were distributed over the principal trade routes as follows:

#### ATLANTIC TO PACIFIC.

	Vessels	Net Tonnage	Tons of Cargo
United States coastwise.....	2	11,039	18,805
United States to South and Central America.....	12	43,016	73,329
United States to Far East and Australia.....	20	94,719	149,089
Atlantic terminus of Canal to South & Central America.....	19	35,126	23,455
Europe to west coast of South America.....	3	8,988	9,414
Europe to west coast of North America.....	2	5,883	9,790
Miscellaneous routings.....	1	1,869	8,492
Vessels in ballast.....	11	32,718	.....
Total.....	70	236,358	292,771

#### PACIFIC TO ATLANTIC.

	Vessels	Net Tonnage	Tons of Cargo
United States coastwise.....	.....	.....	.....
United States and Central America to United States.....	21	77,519	143,752
Far East and Australia to United States.....	2	10,234	5,559
South and Central America to Atlantic terminus of Canal.....	19	36,280	28,528
West coast of South America to Europe.....	5	17,135	25,521
West coast of North America to Europe.....	1	3,642	6,596
Miscellaneous routings.....	2	12,109	13,064
Vessels in ballast.....	4	6,767	.....
Total.....	54	163,686	225,020

The ships traveling over route classified as "miscellaneous" were the *Cushing*, carrying 8,492 tons of crude oil from Tuxpan to Pisagua; and the *Dorset* and the *Carpenteria* from New Zealand to England, with 7,500 and 5,564 tons of cargo, respectively.

#### Tolls Fall to Meet Cost of Operation and Maintenance in Fiscal Year.

During the fiscal year ending with the close of business on June 30, 1916, the total receipts of tolls from vessels passing through the Canal were \$2,399,830.42. The total amount expended on account of the operation and maintenance of the Canal was \$6,999,750.15. This left a deficit in the account of \$4,599,919.73.

For every dollar which the Government spent for operation and maintenance it re-

ceived back in tolls 34.28 cents. It spent practically three times (2.9167 to be exact) as much to maintain and operate the Canal as it received in tolls in payment for the service.

During the preceding fiscal year the tolls had exceeded the expenses by \$276,656.38, which represented a profit of .67 per cent on the expenditure for operation and maintenance alone, not counting anything for interest on the money invested or for depreciation of plant.

The summary of the items charged to operation and maintenance published herewith shows that under this classification are included all the diversified expenditures which have been made for keeping the Canal open—it was open approximately half the year—and in order, and the work of handling vessels through; and in addition are charged prorated parts of the general expenses of civil government, sanitary work, and administration. About two-thirds of the total overhead expense of the Canal is charged to operation and maintenance at present.

The largest item in the operation and maintenance costs is the charge for dredging, which is slightly over one-half of the total. The dredging in Gaillard Cut cost \$3,513,350.06, and the total dredging charge in this account was \$3,560,016.04. This is just about twice the charge for the preceding fiscal year, which was \$1,769,475.59. The increased cost in this matter was due to the slides on both banks of the Canal north of Gold and Contractor's Hills, which caused the suspension of traffic from the middle of September to the middle of April and the consequent great falling off in the amount of tolls collected for the year.

A summary of the charges for operation and maintenance in June, 1916, as compared with May; with June of 1915; and with the fiscal year to date, 1916 and 1915, is given in the table on page 422, second page of this issue.

#### Coastwise Trade during the Fiscal Year.

The total tolls on vessels in the United States coastwise trade amounted to 18.36 per cent of all tolls collected. During the preceding fiscal year the coastwise traffic yielded over 36 per cent of the total, or practically double the proportion which existed during the fiscal year 1916. It will be noted that since the Canal was closed in September the tolls on coastwise traffic for the remainder of the fiscal year amounted to \$17,955.95; this is because many of the ships which were in the coastwise trade prior to the closing of the Canal were diverted subsequently to foreign trade. In several of the months United States Government vessels passed through the Canal, carrying coal from Norfolk to California, hence were classed in the coastwise trade, but they paid no tolls. In the months after the closing of the Canal the tolls on the coastwise trade amounted to 1.86

per cent of the collections from other traffic.

A comparison of collections is given.

#### Collections by Months.

The collections of tolls in June on vessels making the transit of the Canal amounted to \$363,799. Collections from ships passing from the Atlantic to the Pacific amounted to \$123,103.11; from ships passing from the Pacific to the Atlantic, to \$150,695.89.

The June collections bring the total of the

(Continued on page 423.)

Month.	Atlantic to Pacific.	Pacific to Atlantic	Total on coastwise.	Total on traffic other than U. S. coastwise.
July, 1915.....	\$78,840.10	\$ 56,331	\$135,171.10	\$438,194.57
August.....	57,580.20	121,200.80	128,781.00	36,011.03
September.....	45,921.40	44,547.35	90,468.75	259,029.55
October.....				
November.....				
December.....		2,252.50	2,252.50	8,573.50
January.....				654.39
February.....				834.00
March.....				418.80
April.....	6,187.50	5,606.35	11,793.85	223,824.59
May.....	3,909.60		3,909.60	364,114.19
June.....				365,799.00
Total.....	\$192,438.80	\$179,938.00	\$372,376.80	\$2,027,453.62

### CHARGES FOR OPERATION AND MAINTENANCE, 1915 AND 1916.

(See article on first page of this issue.)

ITEMS.	June, 1916.	May, 1916.	June, 1915.	Fiscal Year to Date.	
				This Year.	Last Year.
<b>Marine Division:</b>					
Admeasurement of vessels.....	\$978.63	\$894.57	\$744.50	\$7,905.40	\$9,026.54
Local inspection.....	287.43	487.05	216.80	4,075.36	3,926.98
Aids to navigation.....	6,817.41	5,985.66	3,749.27	58,848.34	48,059.59
Pilotage.....	7,520.41	7,173.90	5,855.98	41,342.29	61,515.50
Operation of harbor tugs—balance.....	3,812.52	3,356.30	2,491.77	42,720.58	2,491.77
Total, Marine Division.....	\$19,416.40	\$17,877.48	\$13,058.41	\$154,891.97	\$125,918.38
<b>Lock operation and maintenance—</b>					
<b>Gatun Locks:</b>					
Superintendence.....	\$1,204.86	\$1,181.20	\$1,492.56	\$12,970.82	\$17,398.37
Operation.....	7,598.14	8,030.11	9,009.71	80,991.61	101,494.91
Maintenance of machinery and equipment.....	8,348.91	6,099.11	6,317.92	140,073.13	76,497.75
Maintenance of structure.....	2,391.64	3,730.60	2,230.51	16,130.71	32,105.13
Miscellaneous supplies and expenses.....	185.54	174.20	131.03	1,079.37	2,718.52
Total, Gatun Locks.....	\$19,729.09	\$19,815.22	\$19,171.73	\$252,245.64	\$230,214.68
<b>Gatun Spillway:</b>					
Operation.....	90.91	39.34	79.90	860.06	1,128.50
Maintenance of machinery and equipment.....	352.93	66.92	386.66	5,046.05	4,901.10
Maintenance of structure.....	63.57	44.24		11,226.34	6,082.60
Total, Gatun Spillway.....	\$507.41	\$150.50	\$466.56	\$17,132.44	\$12,112.20
<b>Pedro Miguel Lock:</b>					
Superintendence.....	\$1,365.43	\$1,547.66	\$1,526.12	\$16,369.88	\$14,921.07
Operation.....	4,954.46	5,173.54	6,332.76	49,355.32	78,964.47
Maintenance of machinery and equipment.....	3,761.02	3,972.46	4,260.54	62,328.39	45,975.44
Maintenance of structure.....	1,429.15	1,659.61	1,153.66	15,816.02	25,385.91
Miscellaneous supplies and expenses.....	183.16	313.67	216.85	2,770.80	1,952.18
Total, Pedro Miguel Lock.....	\$11,693.21	\$12,656.94	\$13,489.93	\$146,640.41	\$167,199.07
<b>Pedro Miguel Dam:</b>					
Maintenance.....		\$91.59		\$91.59	\$42.00
<b>Miraflores Locks:</b>					
Superintendence.....	\$1,882.61	\$2,191.08	\$1,444.97	\$17,577.33	\$17,323.13
Operation.....	\$7,061.97	7,115.78	8,115.96	67,258.16	102,239.26
Maintenance of machinery and equipment.....	11,280.84	16,646.07	2,362.44	101,588.72	70,909.20
Maintenance of structure.....	1,585.22	1,246.87	1,852.01	15,083.97	24,250.97
Miscellaneous supplies and expenses.....	296.92	365.23	88.73	3,243.11	3,324.44
Total, Miraflores Locks.....	\$22,110.56	\$28,145.03	\$13,864.11	\$202,700.49	\$218,047.00
<b>Miraflores Spillway and East Dam:</b>					
Operation.....	\$75.23	\$62.86	\$45.45	\$431.95	\$696.95
Maintenance of machinery and equipment.....	126.16		16.97	1,951.95	8,223.27
Maintenance of structure.....	264.96	98.82	57.39	750.81	755.23
Total, Miraflores Spillway and East Dam.....	\$476.35	\$161.68	\$119.81	\$3,134.71	\$9,675.45
<b>Miraflores West Dam:</b>					
Maintenance.....				\$347.72	\$377.17
Total, lock operation and maintenance.....	\$54,516.62	\$61,020.96	47,112.14	\$622,293.01	\$637,667.57
<b>Dredging:</b>					
Atlantic entrance.....	\$18,077.88	\$534.45	\$1,365.20	\$26,478.35	\$125,563.30
Gatun Lake.....	\$41,090.65	313,673.36	139,587.51	3,513,350.00	1,633,030.06
Gatun Cut.....		463.56		20,187.63	2,253.44
Miraflores Lake.....					8,628.79
Pacific entrance.....					
Total, dredging.....	\$359,168.53	\$314,671.37	\$140,952.71	\$3,560,016.04	\$1,769,475.59
<b>Gatun Dam, maintenance:</b>					
Removal of floating obstructions.....	\$2,208.33	\$2,029.94	5,154.19	\$20,230.04	\$48,458.19
Gatun-Miraflores locks.....	1,679.53	1,758.12	1,088.50	20,372.17	14,488.51
Colon West Breakwater, maintenance.....	146.21	20.08	957.16	1,772.05	6,939.54
Colon East Breakwater, maintenance.....				41,328.32	134.54
Naos Island Breakwater, maintenance.....			1,793.58	38.45	4,492.21
Damages to vessels in locks.....		23.11	212.50	787.78	2,417.07
Damages to vessels in Canal.....				948.83	
Operation of floating derricks.....	11,450.56	16,080.30		101,858.04	
Maintenance of transportation tracks.....	4,787.02	2,274.16	1,229.91	25,602.63	37,171.63
Shop expense, Balboa, balance.....					56,400.78
Loss on Sales and Services to Outsiders.....					
Total, operation and maintenance.....	\$453,373.20	\$415,755.52	\$211,559.10	\$4,550,159.33	\$2,742,722.56
Proportion of overhead expenses.....	\$223,793.66	\$243,818.33	\$130,734.23	\$2,449,590.82	\$1,380,405.53
Total.....	\$677,166.86	\$659,573.85	\$342,293.33	\$6,999,750.15	\$4,123,128.09
<b>Tolls.....</b>	\$363,799.00	\$368,023.79	\$359,229.05	\$2,399,830.42	\$4,343,383.69
<b>Tolls earned in excess of expenses.....</b>			\$196,935.72		\$220,255.60
<b>Expenses in excess of tolls earned.....</b>	\$313,029.96	\$291,550.06		\$4,509,919.73	



tolls for the fiscal year to \$2,399,830.42. The total for the preceding fiscal year was \$1,343,383.69; and for the fiscal year 1914, for barges sent through the Canal in May and June of 1914, the tolls were \$14,618.68. The total collections, from the beginning until July 1, 1916, have amounted to \$6,757,832.79.

Of the total tolls for the fiscal year 1916, \$2,399,830.42, the collections on ships passing from the Atlantic to Pacific were \$1,254,208.28; on ships from the Pacific to the Atlantic, \$1,145,622.14. The collections on the traffic each way, by months during the fiscal year, are presented in the following table:

Month.	Vessels entering from Pacific.	Vessels entering from Atlantic.	Total.
1915			
July...	\$308,264.32	\$365,101.35	\$573,365.67
Aug....	268,391.80	238,894.80	498,921.03
Sept....	168,450.30	181,048.00	349,498.30
Oct....			
Nov....	93.60	10,732.41	10,826.00
Dec....			
1916			
Jan....	18.00	636.39	654.39
Feb....	832.80	2.20	834.00
Mar....	268.80	150.00	418.80
April....	97,779.29	137,839.15	235,618.44
May....	197,000.83	171,022.96	368,023.79
June....	213,103.11	150,695.89	363,799.00
Total...	\$1,254,208.28	\$1,145,622.14	\$2,399,830.42

#### The "Balboa" Applies for Passenger License.

The steamship *Balboa*, which has been plying between the Atlantic terminus of the Canal and the Colombian ports of Buenaventura and Tumaco, has applied for license to carry passengers. She has been inspected under the authority of the Board of Local Inspectors and the granting of the license is contingent upon the installation of radio equipment and other improvements. The agents report that orders for the equipment have been placed.

The *Balboa* has made eight trips through the Canal, the first from Balboa to Cristobal on May 12, the latest southward on July 10; this is at the rate of approximately two round voyages a month. As she is supplying a long-felt want in this trade, she has been well laden with cargo.

The *Balboa* is 190 feet long by 29½ feet beam and has gross and net Canal tonnage of 705 and 315, respectively. She was built in 1901 at Paisley, Scotland, as the *Manuel Herreras* and operated under the Mexican flag out of Mazatlan by the Compañía Naviera del Pacifico. The operating company became involved in the several revolutions of the past years, the ships being commandeered to carry troops, and eventually the company took the ships away and the *Herreras* was transferred to American registry under the name of *Balboa*. Her home port is now San Diego, Cal., and her operators the Colombian Maritime Company, Ltd.

#### Remittances to the Collector by Mail.

The Collector of The Panama Canal calls attention to the fact that it is desirable for persons making remittances to his office, for rent, light, or other items, to send only post-office money orders and not to enclose currency in letters. This is on account of the danger of loss in transit. All orders should be made payable to "Collector, Panama Canal," whether to be presented at the office of the Collector at Balboa Heights or that of the deputy collector at Cristobal.

### Distribution of Traffic through the Panama Canal in the Fiscal Year 1916.

#### ATLANTIC TO PACIFIC.

Month.	United States coastwise				United States to South and Central America				United States to Far East, including Australasia				Atlantic terminus to South and Central America				Europe to West Coast of South America				Europe to West Coast of North America				Miscellaneous				Ballast				Total	
	Ves- sels	Cargo carried tons	Canal net	net	Ves- sels	Cargo carried tons	Canal net	net	Ves- sels	Cargo carried tons	Canal net	net	Ves- sels	Cargo carried tons	Canal net	net	Ves- sels	Cargo carried tons	Canal net	net	Ves- sels	Cargo carried tons	Canal net	net	Ves- sels	Cargo carried tons	Canal net	net	Ves- sels	Cargo carried tons	Ves- sels	Cargo carried tons		
July, 1915	20	74,170	66,849	10,715	11	32,508	33,933	24	174,574	110,545	10	9,816	13,864	4	11,115	2,921	5	9,385	19,089	1	4,965	3,067	18	37,120	93	316,773	297,328	1	1,100	694				
August	13	67,102	51,876	10,715	9	36,341	28,740	16	108,745	67,286	13	14,310	24,737	2	4,722	9,097	5	8,853	20,462	1	13,950	7,225	29	78,841	89	249,194	288,494	1	4,381	102,378				
September	10	42,357	39,923	6	36,327	21,192	12	88,534	49,632	10	14,410	7,560	4	9,160	14,149	1	4,965	10,989	1	13,950	7,225	11	31,173	49	181,380	166,751	1	4,381	102,378					
October																																		
November																																		
December																																		
January, 1916																																		
February																																		
March																																		
April																																		
May																																		
June																																		
Total	52	227,103	183,372	56	205,659	180,594	99	706,876	437,333	73	75,351	121,845	14	45,070	45,826	20	51,045	70,938	14	62,512	40,456	85	27,860	41	1,434	26	1,308	230	1,884	728				
Fiscal year 1915	72	951,044	659,790	79	294,510	258,951	102	1,627,517	1,413,691	52	65,299	124,636	31	99,478	105,764	19	87,587	61,217	75	241,119	130	212,575	735	1,884	728									

#### PACIFIC TO ATLANTIC.

Month.	United States coastwise				South and Central America to United States				Far East, including Australasia, to United States				South and Central America to Atlantic terminus				West coast, South America to Europe				West coast North America to Europe				Miscellaneous				Ballast		Total	
	Ves- sels	Cargo carried	Canal net	Cargo net	Ves- sels	Cargo carried	Canal net	Cargo net	Ves- sels	Cargo carried	Canal net	Cargo net	Ves- sels	Cargo carried	Canal net	Cargo net	Ves- sels	Cargo carried	Canal net	Cargo net	Ves- sels	Cargo carried	Canal net	Cargo net	Ves- sels	Canal net	Ves- sels	Canal net	Ves- sels	Cargo carried		
July, 1915	11	73,321	52,372	25	110,999	74,691	17,715	8	8,356	13,911	14	102,010	51,663	8	42,059	28,319	8	42,059	28,319	5	17,470	12,161	1	1,790	1	1,790	1	1,790	1	1,790	1	1,790
August	10	49,251	38,690	23	139,738	77,673	20,496	13	14,438	21,507	14	102,010	51,663	13	44,404	28,319	13	44,404	28,319	5	17,470	12,161	1	1,790	1	1,790	1	1,790	1	1,790	1	1,790
September	15	83,613	61,888	33	139,738	77,673	20,496	13	14,438	21,507	14	102,010	51,663	13	44,404	28,319	13	44,404	28,319	5	17,470	12,161	1	1,790	1	1,790	1	1,790	1	1,790	1	1,790
October	10	49,251	38,690	9	60,123	31,727	6	40,921	24,971	6	7,873	9,793	9	46,474	31,309	9	46,474	31,309	9	46,474	31,309	2	19,603	9,907	5	20,675	51	20,675	51	20,675	51	20,675
November	1	2,656	1,792	1	550	388																										
December	1	2,656	1,792	1	550	388																										
January, 1916	1	2,656	1,792	1	550	388																										
February	2	3,014	4,069	20	134,531	73,020	4	2,301	22	35,012	41,127	7	44,583	24,697	5	26,531	16,556	5	26,531	16,556	4	20,282	20,633	5	40,348	48	40,348	48	40,348	48	40,348	
March	2	3,014	4,069	20	134,531	73,020	4	2,301	22	35,012	41,127	7	44,583	24,697	5	26,531	16,556	5	26,531	16,556	4	20,282	20,633	5	40,348	48	40,348	48	40,348	48	40,348	
April	2	3,014	4,069	20	134,531	73,020	4	2,301	22	35,012	41,127	7	44,583	24,697	5	26,531	16,556	5	26,531	16,556	4	20,282	20,633	5	40,348	48	40,348	48	40,348	48	40,348	
May	2	3,014	4,069	20	134,531	73,020	4	2,301	22	35,012	41,127	7	44,583	24,697	5	26,531	16,556	5	26,531	16,556	4	20,282	20,633	5	40,348	48	40,348	48	40,348	48	40,348	
June	2	3,014	4,069	20	134,531	73,020	4	2,301	22	35,012	41,127	7	44,583	24,697	5	26,531	16,556	5	26,531	16,556	4	20,282	20,633	5	40,348	48	40,348	48	40,348	48	40,348	
Total	41	217,285	167,594	115	709,019	400,219	20	169,213	76,136	78	109,911	137,746	48	309,416	113,732	34	178,801	113,957	15	72,009	56,019	25	46,945	376	2,705	810	1,171	531	1,171	531	1,171	531
Per Year	163	895,614	615,501	127	653,361	448,512	16	91,195	74,826	103	438,373	49,528	111	7,542	422,815	8	73,093	81,915	8	23,093	18,158	30	74,967	558	2,943,057	1,958,307						

## INFANTILE PARALYSIS.

### Steps to Prevent Its Spread—No Cause for Alarm On Isthmus.

The epidemic of infantile paralysis in New York City and vicinity has caused considerable apprehension on the part of the Public Health Service of the United States, and the Panama Railroad Steamship Line has been requested to cooperate as far as possible in preventing the passage to or from the Isthmus of persons suffering from the disease.

The steamship passenger agent at Colon has been instructed to furnish passage tickets covering the transportation of children under 16 years of age from the Canal Zone to New York only on the sailing day of the steamer, and then after the surgeon of the ships has certified from examination of the prospective passengers that they do not exhibit any symptoms of infantile paralysis. A similar procedure is followed in New York, the tickets being issued on the pier only after examination.

The Washington Office of The Panama Canal has suggested to patrons of the Panama Railroad Steamship Line "as an additional precaution the advisability of passengers securing from their family physician before leaving home a certificate to the effect that all children accompanying them under 16 years of age are in good health and free from any symptoms of infantile paralysis."

There are at present no known cases of infantile paralysis on the Isthmus, though there have been cases at times in preceding years. The quarantine officer for Cristobal-Colon has been instructed to examine incoming passengers on ships from New York with special care to detect any cases of it which might be aboard. Should a case be discovered he will remove it to the quarantine station for isolation and treatment during the continuance of the disease. Other members of the family of the case and such children on the ship as may be considered "contacts" in the judgment of the quarantine officer will be held at the quarantine station under daily observation for such period as may be considered necessary, not exceeding seven days. The officer is on the lookout for mild or suspicious cases, which, being most likely to go unobserved, would be most prolific in infection if they developed on the Isthmus.

Infantile paralysis, known in the technical language of medicine as "poliomyelitis," is not thoroughly understood at the present time, especially in relation to its mode of contagion. It is known that the virus is found in the secretions of the nose, throat, and other mucous membranes of the body, but the germ itself has not been identified, as has been done in many other infectious diseases. The latest researches indicate that the disease is transmitted through contact with acute cases of the disease, or through germ carriers in healthy individuals, and rarely, through other agencies. The period of incubation of the disease is not known, and it is not possible, as yet, to determine whether or not a certain individual is a carrier, (unless he has had the disease recently), as can be done in the case of other disease carriers.

There is no occasion for an alarm on the part of residents of the Isthmus. Should a case of this disease gain access at our ports, the precautionary measures already taken will tend to restrict and localize the disease, without menace to the community at large,

unless the case should develop at a later period after passing the careful scrutiny of the Quarantine officials, which appears improbable.

### Additional Passenger Accommodations.

Effective August 1, 1916, the Panama Railroad will inaugurate a mixed train service from Colon to Panama, handling through freight and first-class passengers.

This train will be operated on the following schedule, daily except Saturday:

Leave Cristobal commissary...	11.00 p. m.
Mount Hope.....	11.05 p. m.
Gatun.....	11.20 p. m.
Monte Lirio.....	11.35 p. m.
Frijoles.....	11.46 p. m.
Darien.....	11.53 p. m.
Gamboa.....	12.04 a. m.
New Culebra.....	12.15 a. m.
Pedro Miguel Junction.....	12.29 a. m.
Miraflores Locks.....	12.35 a. m.
Corozal.....	12.39 a. m.
Balboa Heights.....	12.45 a. m.
Panama.....	12.50 a. m.

All forms of first-class transportation now in use will be accepted on this train, and there will be no excess charged on cash fares collected.

This service consists essentially of the attachment of a first-class coach to the through freight train which is sent across every night. It is designed primarily for the convenience of residents of Gatun who wish to spend the evening in Colon. No way freight will be handled on this train.

### Clearing Away Cofferdam at Balboa.

Dredge No. 5 and the drill boat *Teredo* are working continuously to afford an entrance for colliers to the new coaling handling plant at Balboa. They are drilling and dredging the cofferdam which formerly excluded the water of the Pacific entrance channel from the approach basin of the dry dock No. 1 and the coaling plant.

The work of blasting the cofferdam was originally done by Star drills, working in the dry, and from a trestle over the water. On account of the danger of injury to the dock gates and to the large masses of concrete in the immediate vicinity, the quantities of dynamite used were too small to break up the rock sufficiently to handle with the small ladder dredges.

The cleaning out of the dam developed a hard rock core, carrying a depth of only 14 feet at mean tide. The drill boat *Teredo* was placed on this area on July 27 and on the 29th fired her first blast of 1,765 pounds of 60 per cent dynamite, in 60 holes, over an area of 1,500 square feet to minus 32 mean tide. It is assumed that the lower 13 feet, from —32 to —45 were broken by the previous blasting.

### Survey of Pipelines at Tank Farms.

A survey has just been completed for the accurate location and charting of the oil and water pipelines and the fence lines at the oil tank farms at the Atlantic and Pacific entrances of the Canal. This work has been done principally as a precautionary measure, it being very important to know the exact situation of the pipelines in case of fire. It is the plan of the Mechanical Division, which is operating the oil handling plants, to keep the charts up to date, indicating on them every little change in the lines, and preparing revised charts as often as may be necessary.

## EXECUTIVE ORDER.

### Leave of Absence for Civil War Veterans to Attend Encampment.

It is hereby ordered that all veterans of the Civil War in the service of the Government of the United States who desire to attend the Grand Army Encampment to be held in Kansas City, Missouri, August 26th to September 3rd, 1916, shall be granted leave of absence with pay, in addition to the annual leave provided for by statute, from August 26th to September 3rd, inclusive, that they may have the opportunity to attend the encampment, and that they be granted as many more days additional leave with pay in each case as are necessary for the journey to Kansas City and return to their posts of duty.

WOODROW WILSON.

THE WHITE HOUSE,

July 17, 1916.

[No. 2423.]

## OFFICIAL CIRCULARS.

### Free Entry of Parcel Post Packages.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 13, 1916.

CIRCULAR NO. 613-2:

1. Postmasters and postal clerks of Canal Zone post-offices are hereby authorized to sign for the Executive Secretary requests of both gold and silver employees for the release of parcels upon which no duty is payable, when such requests comply with the provisions of this circular.

2. Parcel post packages containing articles for the exclusive use of an employee of The Panama Canal, the Panama Railroad Company, or a contractor for The Panama Canal entitled to free entry of personal goods, or the family of such an employee or contractor, will be admitted free of duty.

3. Duty will not be remitted on articles imported for sale or on spirituous liquors.

4. When the declared value of the contents of a package does not exceed three dollars United States currency the packages will be released without the submission of a special form request in cases where no duty is payable.

5. To procure release from duty of packages where declared value is greater than three dollars, the employee must submit a request on the form provided for that purpose to the postmaster or postal clerk, who will approve it for the Executive Secretary. In case of doubt as to the identity of applicant as an employee on the gold roll, postmasters may require the certificate of the head of his department or the district quartermaster. Employees on the silver roll must have requests certified by foreman or other persons in charge before submitting them to the postmaster for approval.

6. Sealed packages on which a customs declaration has not been made by the sender will not be exempted under the provisions of paragraph 4 unless inspection shows that the value of contents does not exceed three dollars. Applicants may be required to open sealed packages before delivery to show that declaration made on release form is correct description of the contents.

7. Abuse or attempted abuse of this privilege by employees, postmasters, postal clerks, or by others may be punished by discharge or prosecution, or both.

CHESTER HARDING,  
Acting Governor.

### Free Quarters, Fuel, and Current—Assignment to Quarters.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 27, 1916.

To all concerned—The following cablegram received from the Washington Office of The Panama Canal, under date of July 26, 1916, is quoted below for the information and guidance of all concerned:

"President signed Executive Order July 25 granting free quarters, fuel, and electric current to employees under regulations to be prepared by you effective July first, 1916."

The provisions of Circular No. 627-14 are hereby canceled, and the regulations for the assignment of quarters in effect prior to the issuance of Circular No. 627-14 will govern the assignment and retention of quarters after this date.

CHESTER HARDING,  
Acting Governor.



### Specific Designations on Complimentary Trip Passes.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 12, 1916.

To all concerned—Attention has been called to the fact that complimentary trip passes are being issued for more than one party, without definitely specifying all of the persons for whom passage is intended, thus:

Mrs. Jones and one.  
Mrs. Smith and two.

In future, the Panama Railroad will not accept for passage, complimentary trip passes where the names of the parties traveling on such passes are not shown in every case, unless specifically enforced by this office. The following forms will be acceptable:

Miss R. C. Mills.  
Misses R. C. Mills and M. Bryan.  
J. B. Jones, wife and child.

The above regulations are necessary to prevent parties to whom passes are issued carrying persons not entitled to transportation.

CHESTER HARDING,

Acting Governor, The Panama Canal,  
Second Vice President, Panama Railroad Company.

### Appointments.

THE PANAMA CANAL,  
PANAMA RAILROAD COMPANY,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 18, 1916.

CIRCULAR No. 661-31 (Superseding circular No. 661-30) Effective July 1, 1916, Mr. Samuel W. Heald is appointed Superintendent of the Panama Railroad, vice Mr. Charles H. Motsett, resigned.

Mr. W. F. Foster is appointed Master of Transportation, effective the same date.

CHESTER HARDING,

Acting Governor, The Panama Canal,  
Second Vice President, Panama Railroad Company.

### Cristobal Shops.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 22, 1916.

HEADS OF DEPARTMENTS AND DIVISIONS:

The Cristobal dry dock shops, known as the "Dry Dock Shops," will hereafter be officially known as the Cristobal Shops.

This change is made in order to avoid any confusion which may be likely to arise in view of the opening of dry dock No. 1 at Balboa.

CHESTER HARDING,  
Acting Governor.

### Officers in Board of Local Inspectors.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 31, 1916.

To all concerned—Effective this date, Lieut. A. B. Reed, U. S. N., will act as Chairman of the Board of Local Inspectors until the return from leave of Mr. James MacFarlane; Mr. MacFarlane will then act as Chairman of the Board until the return from leave of Lieut. P. Basset, U. S. N.

Effective this date, Canal Pilot H. G. Oliver will, during the leave of absence of Lieutenant Basset, be Acting Member of the Board of Local Inspectors.

CHESTER HARDING,  
Acting Governor.

### Leaves of Absence and Transfers of Commissary Managers.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 24, 1916.

To all managers—With the approval of the Acting Governor, my circular of January 9, 1916, relative to leave of absence and transfers of commissary managers, is hereby cancelled and no arrangements will be made in the future for inventories prior to allowing managers of commissaries to go on leave; nor will the effective dates of the leave of these employees be confined to the period between the first and tenth of the month.

WM. R. GROVE,  
Chief Quartermaster.

### Condition of Nesselrode Pudding, Brick Ice Cream and Water Ices.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., July 26, 1916.

BULLETIN No. 657:

To commissary managers—Hereafter orders for nesselrode pudding, brick ice cream and water ices for delivery along the line, will be accepted only with the understanding that we will not be responsible for their condition upon arrival at destination. In putting

up the orders we use every precaution in the way of packing, etc., to insure arrival in good condition, but after the long trip across the Isthmus it is not always possible to repack them properly at line commissaries, and in spite of our best efforts they do not always hold up well, and sometimes look "messy" when opened up to be served.

Please advise your customers accordingly, when accepting their orders for these items.

WM. R. GROVE,  
Chief Quartermaster.

### Handling of Cattle.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 26, 1916.

To all concerned—Effective this date the Depot Commissary will be relieved of all responsibilities in connection with cattle and pastures.

Mr. W. B. Brown, cattle buyer, will have charge of all Supply Department cattle, and all pastures on the Atlantic end.

Mr. A. R. Morrell will report to Mr. Brown as assistant.

The abattoir will remain under charge of the Depot Commissary, who will daily requisition the number of cattle required.

The master of the Caribbean will report to Mr. Brown in all matters connected with the time of sailing of the ship and handling of the cattle.

WM. R. GROVE,  
Chief Quartermaster.

### Changes and Appointments, Supply Department.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 21, 1916.

To all concerned—Effective August 1, 1916, the title of Depot Commissary is changed to General Manager, Commissary Division.

Mr. R. K. Morris is appointed General Manager, Commissary Division.

Mr. J. J. Jackson is appointed General Storekeeper, Supply Department.

WM. R. GROVE,  
Chief Quartermaster.

### Administration of Retail Stores.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,

CRISTOBAL, C. Z., July 26, 1916.

MEMORANDUM No. 185:

To commissary managers—Effective August 1, 1916, and until further notice, all commissary managers and commissary inspectors will report direct to Mr. D. W. McCormack, Chief Commissary Inspector.

All matters connected with stock and its up-keep will be taken up with the Depot Commissary, but all other questions connected with the administration and operation of retail stores should be referred to Mr. McCormack, whose office will be over the office of the Depot Commissary, at Cristobal, and whose telephone is No. 28 on the Depot Commissary switchboard.

WM. R. GROVE,  
Chief Quartermaster.

### Obsolete Store to be Consolidated with Dry Dock Store.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 27, 1916.

To all concerned—Effective August 1, 1916, the obsolete storehouse, Mount Hope, will be abolished as a separate store, and the stock will be consolidated with that of the dry dock store, Cristobal.

Mr. R. B. Groves will be in charge of the consolidated stock, as of that date, his title being Storekeeper, Supply Department, Cristobal, C. Z.

WM. R. GROVE, Chief Quartermaster.

### Superintendent of Cattle Industry.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 29, 1916.

To all concerned—The designation of cattle buyer, Supply Department, is changed to Superintendent, Cattle Industry.

Mr. W. B. Brown is appointed superintendent of cattle industry and will, in addition to handling the buying of cattle, have charge of the supervision of pastures.

WM. R. GROVE, Chief Quartermaster.

### Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 304, on Wednesday, August 9, 1916, beginning promptly at 8 a. m. for persons desiring the following classes of licenses: Pilots, masters, mates, marine

engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the Board, room No. 211, Balboa Heights, forms of application and information respecting the filling out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination as follows: At Cristobal, noon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port at Gamboa, the Deputy Inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, August 11, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

Geo. J. VANDERSLICE,  
Recorder, Board of Local Inspectors.

### Sale of 2-Cylinder Jer Gas Engine.

Sealed bids will be received at the office of the Storekeeper, S. D., Cristobal, until 3 p. m., the 18th inst., when they will be opened in the presence of attending bidders, for the purchase of one Fairbanks-Morse, two-cylinder gasoline engine, approximately 12 to 15 horsepower, suitable for boat or stationary power, said engine available for inspection at the Mount Hope storehouse any time between the hours of 7 and 11 a. m. and 1 to 5 p. m. Right is reserved to reject any or all bids. Bids must be plainly marked "Proposal for purchase of gasoline engine, to be opened August 18, 1916" and addressed to R. B. Groves, Storekeeper, S. D., Cristobal, C. Z."

### Handling of Personnel Papers.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., July 21, 1916.

To all concerned—Considerable delay is being experienced by the Personnel Bureau on account of the failure to receive promptly the necessary information concerning employments and changes affecting the personnel.

To expedite and facilitate as much as possible the handling and preparation of all papers, and in order that all changes may be shown on the payrolls for the month in which the changes occur, it is absolutely necessary that such information be furnished the bureau with a greater degree of promptness and accuracy.

Particular attention is called to the fact that the information slips, properly filled out, and the medical examination forms are not being forwarded in all cases until after a considerable loss of time in an effort to secure them. These papers should accompany the notification to this office of any employment or reemployment in all cases, which, if not done, causes a delay in the preparation of the necessary papers and results in the holding up of the pay certificates of the employees at the end of the month.

The following telephones are installed in the Personnel Bureau for the facilitation of business, connection with which may be secured through the Balboa Heights exchange:

Name.	Occupation.	Phone No.
R. S. Erdman	Chief of Bureau	5 P. B. X
Albert Wilson	Civil service and miscellaneous	3 P. B. X
David F. Fisher	Leave clerk	168
George V. Graft	Organization clerk	211
R. S. Hammond	Personnel clerk	220
A. G. T. Dorton	File clerk	280
A. L. Bancroft	Service letters	286
Walter C. Poore	Transportation clerk	184

C. A. McCLAVINE,  
Executive Secretary.

### Fuel Oil.

Fuel oil may be obtained at Balboa or Cristobal from plants of The Panama Canal, or from private corporations. The present price from the Canal is \$1.25 per barrel, to advance on My 1. Prices from the corporations may be obtained on application to them.

Diesel engine oil is for sale by several companies at approximately 50 shillings per ton or seven barrels.



## COMMISSARY DEPARTMENT.

## Special Sale of China, Hardware, and Dry Goods.

Odd lots of china, hardware, and men's and women's dry goods will be placed on sale at 8 a. m., August 7, in commissaries as follows:

China, hardware, and dry goods. . . . .	Cristobal
China. . . . .	Ancon
Dry goods. . . . .	Balboa

## Purchase of Oil Cans.

The Commissary Branch will issue refund and credit notes at the rate of five cents each for empty 5-gallon kerosene tins returned in good condition. Cans so offered should be free from rust and punctures, should have tops still on them, and should not be bent up too badly.

These cans may be turned over to the Commissary wagon drivers, who will issue receipts therefor, which will later be covered by refund or credit notes."

## Price Changes.

EFFECTIVE JULY 29, 1916.

	Old.	New.
Beds, single, ea. . . . .	\$2.30	\$3.00
Bowls, sugar, ea. . . . .	.07	.09
Broilers, ea. . . . .	.39	.60
Coolers, water, ea. . . . .	3.75	4.70
Dishes, fruit, ea. . . . .	1.40	1.55
Jugs, ea. . . . .	.82	.95
Jugs, ea. . . . .	.82	.95
Kettles, Berlin, ea. . . . .	.57	.86
Ladies, ea. . . . .	.09	.12
Pans, fry, ea. . . . .	.07	.08
Pans, dish, ea. . . . .	.46	.46
Porcelatons, ea. . . . .	1.18	1.25
Pots, tea, ea. . . . .	.32	.46
Saucepans, ea. . . . .	.32	.49
Saucepans, ea. . . . .	.32	.58
Tires, rubber, ea. . . . .	.23	.27

EFFECTIVE AUGUST 3, 1916.

Blouses, ea. . . . .	1.30	.75
Blouses, ea. . . . .	.95	.91
Blouses, ea. . . . .	1.15	.75
Brassieres, ea. . . . .	.47	.25
Cloth, lace. . . . .	.12	.08
Corsets, ea. . . . .	.68	.25
Corsets, ea. . . . .	1.80	1.00
Drawers, crepe, pr. . . . .	.35	.15
Drawers, pr. . . . .	.28	.15
Hats, straw, ea. . . . .	2.20	1.00
Hose, pr. . . . .	.23	.10
Hose, children's, pr. . . . .	.42	.25
Hose, children's, pr. . . . .	.12	.08
Hose, men's, pr. . . . .	.20	.10
Hose, children's, pr. . . . .	.20	.10
Mitts, bath, ea. . . . .	.26	.10
Stocks, corset, ea. . . . .	.09	.20
Suits, bathing, suit. . . . .	2.25	1.50
Thread, spool. . . . .	.07	.01
Ties, neck, ea. . . . .	.25	.10
Vests, ladies, ea. . . . .	.23	.10
Tooth wash, Odd bot. . . . .	.30	.20

EFFECTIVE AUGUST 4, 1916.

Boats, sauce, ea. . . . .	2.10	1.05
Bowls, sugar, ea. . . . .	.83	.43
Cups, egg, ea. . . . .	.11	.05
Dishes, bakera, ea. . . . .	.75	.37
Dishes, pickle. . . . .	.78	.39
Dishes, butter, ea. . . . .	.82	.41
Dishes, bakera, ea. . . . .	.65	.32
Glasses, ea. . . . .	.06	.01
Hangers, garment, ea. . . . .	.22	.10
Hangers, coat, ea. . . . .	.49	.35
Jugs, cream, ea. . . . .	.13	.04
Plates, soup, ea. . . . .	.22	.11
Plates, dinner, ea. . . . .	.26	.13
Plates, dessert, ea. . . . .	.20	.10
Plates, B. & B., ea. . . . .	.16	.08
Plates, sauce, ea. . . . .	.16	.08
Plates, cake, ea. . . . .	.26	.13
Platters, meat, ea. . . . .	.55	.27
Platters, meat, ea. . . . .	1.45	.72
Platters, chop, ea. . . . .	.65	.32
Platters, meat, ea. . . . .	1.00	.50
Pots, coffee, ea. . . . .	.90	.45
Racks, toast, ea. . . . .	1.55	.77
Scales, family, ea. . . . .	.55	.20
Tureen, soup, ea. . . . .	7.35	.67

## Additions to Stock.

Bedspreads, H. S. and embroidered. . . . .	9.65
Cloths, tea, emb., Madeira linen, round, ea. . . . .	2.20
Cloths, tea, emb., Madeira linen, square, ea. . . . .	4.65
Coats, rain, Slipover, ea. . . . .	11.30
Covers, cushion, Madeira linen, emb., No. 4133 ea. . . . .	2.55
Covers, cushion, Madeira linen, emb., No. 4117, each. . . . .	2.35
Covers, cushion, Madeira linen, emb., No. 4129 ea. . . . .	1.15

Hose, children's pr. . . . .	13
Napkins, Madeira linen, emb., No. 238, ea. . . . .	33
Napkins, Madeira linen, emb., No. 174, ea. . . . .	56
Napkins, Madeira linen, emb., No. 207, ea. . . . .	46
Napkins, Madeira linen, emb., No. 237. . . . .	46
Oil, Omega, bot. . . . .	20
Organdie, striped, yd. . . . .	25
Ribbon, pon, yd. . . . .	28
Ribbon, pon, yd. . . . .	50

## Civil Service Examination.

The following civil service examinations will be held on the date indicated below, in formation concerning the same being posted at clubhouses and post-offices, as per the number of announcement indicated:

Scientific assistant in oceanography (male); \$900 a year; examination on or about August 27, 1916; No. 989.

Apprentice (male); \$700 a year; examination about August 27, 1916; No. 1003.

Agriculturist in sugar beet investigations (male); \$1,800 to \$2,100 a year; examination August 22, 1916; No. 1000.

## Red Cross Finances.

The following is a statement of finances for the Canal Zone chapter of the American National Red Cross for the quarter from May 1 to July 31, 1916:

Balance on hand last report. . . . .	\$5,661.82	\$6,500.02
Membership dues. . . . .	799.00	
Interest on checking balance. . . . .	39.18	
<b>Disbursements. . . . .</b>	<b>1,118.18</b>	
Individuals assisted. . . . .	413.68	
Membership dues remitted. . . . .	542.50	
Tuberculosis cases. . . . .	85.00	
Printing. . . . .	9.00	
Carding membership record. . . . .	5.00	
Postage. . . . .	3.00	
Transportation to San Francisco. . . . .	60.00	

Balance on hand August 1, 1916. . . . . \$5,361.84

Approved: JOHN H. McLEAN,  
Treasurer.  
FRANK FEUILLE,  
Chairman.

## Misdirected Letters.

BALBOA HEIGHTS, C. Z., August 1, 1916.  
The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be obtained upon request of the addressees. Requests may be made by telephone, calling

Balboa, No. 182. . . . .	Bryson, C. E.
Bald, Mrs. Jeannie. . . . .	Campbell, Charles R.
Ballen, Daniel. . . . .	Cannon, Jno. L.
Bardin, H. . . . .	*Carr, Thomas
Barrett, C. J. . . . .	Chadwick, Joseph
Barton, A. . . . .	Clapp, Mrs. Charles A.
Beachboard, Mrs. Carrie. . . . .	Crabtree, A. W.
Blake, Dr. D. E. . . . .	Dawson, Millard
Brennan, Marky. . . . .	Deakins, M. A.
Brewer, E. R. . . . .	

## Deceased Employees.

Name	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
Joseph Branch. . . . .		Barbados. . . . .	Colon. . . . .	P. R. R. . . . .	July 18, 1916.
Somer Daphne. . . . .	73031	Martinique. . . . .	Colon. . . . .	Fortifications. . . . .	July 15, 1916.
Stedman E. Hawkins. . . . .	66497	Jamaica. . . . .	Panama. . . . .	Mun. Engineer. . . . .	July 12, 1916.
Samuel Joseph James Hinkson. . . . .	112263	Barbados. . . . .	Camp Bird. . . . .	P. R. R. . . . .	July 13, 1916.
Robert William Linder. . . . .	39974	Montserrat. . . . .	Panama. . . . .	Dredging Div. . . . .	July 18, 1916.
Lewis McLean. . . . .	95905	Jamaica. . . . .	Cristobal. . . . .	P. R. R. . . . .	July 18, 1916.

## Insane Employees.

Name.	Check No.	Native of	Isthmian Residence.	Employed by	Date of commitment.
Charles Bailey. . . . .	87*97	Jamaica. . . . .	La Boca. . . . .	P. R. R. . . . .	July 8, 1916.

The estates of the abovenamed deceased and insane employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of the heights with the windings will indicate whether the tide is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 15.2 feet below mean high water. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign be before the height, in which case subtract it.

Example. On the 15th of April, 1854, the day for the meridian 75° W. The hours of the day are numbered consecutively from 0<sup>h</sup> (midnight) to 23<sup>h</sup> (11.00 p. m.). All hours greater than 12, are in the afternoon (p. m.), and hence the day is 15.47. To give the usual reckonings, for instance, 15.47 is 3.47 p. m.

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., July 30, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
July 24	Curaca	British	New York & Pacific S. S. Co.	New York	Iquique	General	6,275	6,503	4,621
July 25	Toyama Maru	Japanese	Nippon Yusen Kabushiki K.	New York	Kobe	General	10,693	7,752	5,562
July 25	Salvador	British	Pacific Steam Nav. Co.	Cristobal	Guayaquil	Ballast		1,190	692
July 25	Jamovic	British	Pacific Steam Nav. Co.	Cristobal	Buenaventura	General	1,040	1,170	620
July 25	*Wado Maru	Japanese	Muraishoten Company	New York	Adelphi	Case oil	3,200	3,488	2,467
July 26	*Skerries	British	Clyde Shipping Company	Newport News	Pisagua	Ballast		4,777	3,491
July 27	Crown of Cordoba	British	Crown Steamship Company	Glasgow	St. Rosalia	Coke	3,136	3,804	2,858
July 27	Urayali	Peruvian	Peruvian Steamship Co.	Cristobal	Callao	General	1,657	4,278	2,206
July 27	Egmont Castle	British	Lancashire Shipping Co.	New York	Vladivostok	General	7,500	6,019	4,389
July 27	*Vancouver	British	Vancouver S. S. Co., Ltd.	Newport News	Pisagua	Ballast		4,882	3,652
July 27	*Essex	British	Federal Steam Nav. Co.	New York	Wellington	General	7,500	9,099	6,483
July 27	Alfred Noble	Norwegian	Dampsselsk Concordia	Norfolk	Torrevilla	Ballast		6,036	4,297
July 28	*Walton Hall	British	Ellerman Lines, Ltd.	New York	Lyttelton	General	8,730	5,522	3,840
July 29	*Kaikoura	British	New Zealand Shipping Co.	Norfolk	Auckland	General	9,000	9,019	6,499
July 29	*Toncoriro	British	New Zealand Shipping Co.	Newport News	Auckland	General	7,361	9,011	6,725
July 29	*Craonne	British	Compania Franca de Marine	Port Arthur	Brisbane	Case oil-gasoline		4,679	3,447
July 30	*Korora	British	Toyo Kisen Kaisha	New York	San Francisco	Steel	2,397	12,194	5,899
July 30	*Arbocan	American	American-Hawaiian Line	Newport News	Valparaiso	Coal	8,443	6,146	4,329
July 30	*Ecuador	American	Pacific Mail Company	New York	San Francisco	General		2,131	1,439

\*Indicates vessels making maiden voyage through Canal.

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

July 24	Conce	British	Pacific Steam Navigation Co.	Guayaquil	Cristobal	General	1,024	1,557	998
July 24	Jonckhead	British	Port Steamship Line	Iquique	Norfolk	Nitrates	6,875	5,184	3,870
July 25	Triumph	British	Kendall, Ohlsen & Jansau	Vancouver	Hallifax	Ballast		246	90
July 26	Celia	British	New York-Pacific S. S. Co.	Valparaiso	New York	Nitrates	7,777	5,852	4,377
July 26	Huasco	Chilean	South American S. S. Co.	Talcahuano	Cristobal	General	1,592	4,563	3,121
July 27	Varnate	British	New Zealand Shipping Co.	Wellington	London	General	5,600	6,977	5,483
July 27	Inverkip	British	Inver Steamship Co.	Junin	Newport News	Nitrates	6,900	4,830	3,620
July 27	Sir Francis	American	Capt. Thomas Drake	Seattle	Nova Scotia			7	6
July 29	Nissei Maru	Japanese	Okazaki Kisen Kaisha	Antofagasta	New Orleans	Nitrates	3,860	6,236	2,319
July 29	Dreconion	British	Cambrian Steam Nav. Co.	Astoria	Newport News	Lumber	4,800	4,431	3,145
July 29	Chimbo	American	New York and Pacific S. S. Co.	Tacapilla	Norfolk	Nitrates	8,900	6,439	4,624
July 30	Potosi	British	Pacific Steam Nav. Co.	Chausay	Liverpool	General	5,692	5,343	4,316

## EXPECTED ARRIVALS FROM PACIFIC.

July 30	Indrakula	Indra Line	San Francisco	Aug. 1	Bowdoin	Bowdoin S. S. Co.	San Francisco
July 30	Matinick	Standard Oil Co.	Paleta and Talara	Aug. 1	Urubamba	Peruvian S. S. Co.	Callao
July 30	Frankby	Palaca Shipping Co.	Calita Buena	Aug. 1	Kimda	P. Johannessen	Tacapilla
July 30	Thetis	Vm. C. Job	San Francisco	Aug. 1	Thode Faglund	Wilhelmsen Dmask Acties	
July 31	Middletex	Federal Steam Nav. Co.	Wellington	Aug. 1	Geo. W. Elder	North Pacific S. S. Co.	San Francisco

## PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
July 29	Coronado	Elders & Fyffes	Port Limon	July 27	Merchant	Harrison Line	Galveston
July 30	Harald	United Fruit Company	New Orleans	July 29	Puerto Rico	French Line	Saint Nazaire
July 31	Wailola	Pacific Steam Nav. Co.	London	July 29	Coronado	Elders & Fyffes	Bristol via way pts

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

				Aug. 2	Quillota	Pacific Steam Nav. Co.	Kingston
				Aug. 1	Harold	United Fruit Company	Kingston, S. H.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

ARRIVALS.				DEPARTURES.			
Date	Vessel	Line	From	Date	Vessel	Line	For
July 28	Kurohime Maru	Mitsui & Co.	Antofagasta	July 30	Kurohime Maru	Mitsui & Co.	Vladivostok

\*Other than ships passing through the Canal.

Sailings of Vessels in Regular Service with the United States.				NEW ORLEANS TO CRISTOBAL-COLON.				Coal			
NEW YORK TO CRISTOBAL-COLON.				Curto	U. F. C.	Aug. 2	Aug. 7	Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bulkers, or from cars alongside wharf, landed by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$1; at Balboa, the price is \$1 more per ton, either form of delivery.			
Vessel.	Line.	Sails.	Arrives.	Abangarez	U. F. C.	Aug. 5	Aug. 12				
CRISTOBAL-COLON TO NEW YORK.				Heredia	U. F. C.	Aug. 9	Aug. 14				
				CRISTOBAL-COLON TO NEW ORLEANS.							
Colon	P. R. R.	July 27	Aug. 2	Parissima	U. F. C.	Aug. 6	Aug. 11				
Almirante	U. F. C.	July 27	Aug. 3	Atenas	U. F. C.	Aug. 6	Aug. 14				



# CANAL



# RECORD

Volume IX.

BALBOA HEIGHTS, CANAL ZONE, WEDNESDAY, AUGUST 9, 1916.

No. 51.

## The Canal Record

Official publication of The Panama Canal.

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Address all Communications.

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

## NOTES OF PROGRESS.

### Notice to Steamship Lines.

The following notice was issued under date of July 29, 1916:

1. In view of the present high price and scarcity of bottoms, and the difficulty experienced in maintaining the coal reserve on the Isthmus, and on after October 1, 1916, and until further notice, the following prices will obtain at the Panama Canal for coal supplied steamships, including warships of all nations:

### CRISTOBAL-COLON.

Delivered alongside of vessel in lighters or in cars on the wharves, trimmed in bunkers, when handled by ship's gear (per ton), \$7.50.

### BALBOA.

Delivered alongside of vessel in lighters or in cars on the wharves, trimmed in bunkers, when handled by ship's gear (per ton), \$9.00.

An additional charge of \$2 per hour will be made for the use of each mechanical hoist or crane furnished by the Panama Railroad Company.

2. These changes apply to the prices given on pages 41-42 of the Sailing Directions and General Information, the Panama Canal, and its supplements.

### Increase in the Price of Fuel Oil.

The price of fuel oil sold to steamships at the Canal ports by The Panama Canal will be increased to \$1.75 per barrel at Balboa and

\$2 per barrel at Cristobal, effective October 1, 1916.

This is an increase of 35 cents per barrel at both terminals, the current prices being \$1.40 at Balboa and \$1.65 at Cristobal. This will be the second advance this year, as prior to May 1 the price was \$1.25 per barrel at either terminal.

Diesel oil is not sold by The Panama Canal at this time, but is for sale at both terminals by the corporations which have erected tanks on the farms. Their prices on Diesel and crude oil may be obtained on application to them.

### Principal Commodities.

The following is a list of the 50 principal commodities passing through the Canal during the fiscal year 1916:

Order	Commodity.	Atlantic to Pacific	Pacific to Atlantic	Total.
1	Nitrates.....	60	894,079	894,139
2	Refined petroleum.....	260,540	10,501	271,041
3	Coal.....	243,211	5	243,216
4	Sugar.....	16	128,528	128,544
5	Copper.....	1,175	88,510	89,685
6	Manufactured goods of iron and steel.....	87,052	323	87,375
7	Crude oil.....	30,033	19,779	49,812
8	Railroad material.....	57,829	57,829	115,658
9	Iron ore.....	52,250	52,250	104,500
10	Canned goods.....	2,587	38,713	41,300
11	Barley.....	38,006	38,006	76,012
12	Copper.....	849	35,851	36,700
13	Wire fencing.....	31,189	31,189	62,378
14	Chromium ore.....	25,920	25,920	51,840
15	Machinery.....	24,447	95	24,542
16	Cotton, raw.....	10,502	12,667	23,169
17	Zinc concentrate.....	22,079	22,079	44,158
18	Copper ore.....	17,940	17,940	35,880
19	Naptha.....	201	17,732	17,933
20	Manufactured goods.....	16,224	640	16,864
21	Tin.....	9,205	6,004	15,209
22	Coffee.....	2,863	11,828	14,691
23	Wool.....	695	12,549	13,244
24	Cacao.....	122	13,089	13,211
25	Iron.....	8,364	4,152	12,516
26	Cement.....	11,697	11,697	23,394
27	Fruit, dried.....	25	9,712	9,737
28	Skins and hides.....	10	9,622	9,632
29	Textiles.....	7,890	1,259	9,149
30	Hemp.....	8,995	8,995	17,990
31	Paper.....	8,943	8,943	17,886
32	Automobiles.....	8,309	8,310	16,619
33	Ivory nuts.....	7,521	7,521	15,042
34	Wines and liquors.....	1,825	5,539	7,364
35	Vegetable oils.....	3,535	3,587	7,122
36	Leaves.....	6,986	4	6,990
37	Lubricating oils.....	6,904	23	6,927
38	Flour.....	1,144	5,291	6,435
39	Lead.....	476	6,189	6,665
40	Quits.....	50	6,000	6,050
41	Chemicals.....	5,207	664	5,871
42	Frozen meat.....	5,589	5,589	11,178
43	Wire.....	4,177	4,177	8,354
44	Rubber.....	84	4,268	4,352
45	Benzine.....	293	3,896	4,189
46	Rice.....	2,483	3,459	5,942
47	Tobacco.....	421	2,994	3,415
48	Wheat.....	2,403	100	2,503
49	Gasoline.....	2,494	2,294	4,788
50	Seed.....	91	1,936	2,027

The total of the 50 principal commodities passing through the Canal during the fiscal year was 2,417,146 tons. The total of all cargo going through was 3,140,046 tons. The 50 commodities were, accordingly, 77 per cent of all cargo. With the 550,958 tons of cargo listed as "general cargo" during the year the 50 commodities aggregated 2,968,104 tons, or 94.5 per cent of all cargo.

The 12 commodities of greatest quantity (in

order, nitrates, refined petroleum, coal, sugar, lumber, manufactured goods of iron and steel, crude oil, railroad material, iron ore, canned goods, barley, and copper) aggregated 2,009,897 tons, or 64 per cent of all cargo. Nitrates, which were three times as great in quantity as any other commodity, amounted to 894,139 tons, or about 28 1/2 per cent of the total cargo passing through the Canal.

A comparison of the quantities of the 12 most important commodities passing through the Canal this past fiscal year with the quantities in the fiscal year ending June 30, 1915, is afforded herewith:

Numerical order, 1916	Commodity.	Total, fiscal year 1916	Total, fiscal year 1915	Numerical order, 1915
1	Nitrates.....	894,139	651,948	1
2	Refined petroleum.....	271,041	257,428	4
3	Coal.....	243,216	286,564	3
4	Sugar.....	128,544	298,864	2
5	Lumber.....	89,685	181,666	8
6	Manufactured goods of iron & steel.....	87,375	202,202	7
7	Crude oil.....	69,812	30,594	16
8	Railroad material.....	57,829	56,106	10
9	Iron ore.....	52,250	86,104	9
10	Canned goods.....	41,300	46,998	14
11	Barley.....	38,006	204,751	6
12	Copper.....	36,700	49,799	12
	Total.....	2,009,897	2,348,024	

The commodity fifth in importance in the fiscal year 1915 was wheat, amounting to 230,222 tons; the eleventh in order that year was flour, 54,094 tons.

### Canal Traffic in June.

A part of the usual monthly summary of Canal traffic, covering the month of June, was omitted from THE CANAL RECORD of last week on account of the space required for the summary for the fiscal year. The omitted items are published herewith:

The numbers of ships of the several nationalities, and their aggregate net tonnages, passing through the Canal in the month of June, 1916, are given in this table:

Nationality	No. of ships	Canal net tonnage	No. of ships	Canal net tonnage	No. of ships	Canal net tonnage
British.....	33	110,008	26	82,421	59	192,429
American.....	16	52,302	15	39,441	31	91,743
Chilean.....	4	12,511	5	14,231	9	26,742
Norwegian.....	4	16,244	4	17,520	8	33,644
Peruvian.....	3	7,009	3	7,754	6	15,061
Danish.....	4	19,780	4	19,780	4	19,780
Japanese.....	3	10,022	1	2,319	4	12,341
Dutch.....	3	8,702	.....	.....	3	8,702
Total.....	70	236,358	54	163,686	124	400,044

During the month 91 various commodities were listed on the cargo declarations furnished by the masters of the ships passing through the Canal. Of these, 10 were carried through the Canal in both directions. A summary of the movements of cargo through the Canal in the month is given in the tables on the following pages:

## Commodities Shipped through the Panama Canal In June, 1916.

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Antimony.....	22	22	44	Antofagasta to Bordeaux.
Antimony ore.....	549	549	1,098	Antofagasta to Liverpool.
Balsam.....	12	12	24	Central American ports to Cristobal.
Barrilla.....	62	62	124	Antofagasta to Liverpool, 7 tons; Chilean ports to Cristobal, 55 tons.
Bark.....	32	32	64	From Moelende to Liverpool, 24 tons; to Barcelona, 2 tons; Manta to Cristobal, 6 tons.
Barley.....	398	398	796	Valparaiso to Liverpool.
Pooks.....	1	1	2	Guayaquil to Cristobal.
Borax.....	302	402	704	From Antofagasta to Havre, 153 tons; to Cristobal, 149 tons. New York to Kobe, 100 tons.
Boric acid.....	54	32	86	New York to Kobe.
Cocoa.....	2,840	2,840	5,680	From Guayaquil, 1,593 tons; to Liverpool, 321; to New York, 382; to Cristobal, 809; from Tumaco to Cristobal, 20; from various Ecuadorian ports to Cristobal, 1,221; Salaverry to Cristobal, 6. Chilean ports to Liverpool.
Cakes, cotton seed.....	576	576	1,152	New York to Talara; San Francisco to Cristobal.
Canned goods.....	3	15	18	Brisbane to London.
Fruit.....	3	15	18	New York to Huachu.
Meat.....	20	20	40	New York to Liverpool, 574; Chile to Liverpool, 3,321.
Cement.....	181	181	362	From Newport News and Norfolk, 56,95 tons; to ports on the west coast of South America, 38,871; to ports on the west coast of North America, 17,284; from Cardiff to Esquimalt, 9,790; from Liverpool to South American ports, 168; from New York to Talara, 67 tons.
Coal.....	66,180	66,180	132,360	Puntarenas to Cristobal.
Cocobolo.....	15	15	30	Salaverry to Cristobal, 10; Callao to Cristobal, 6.
Cocoa leaves.....	16	16	32	San Francisco to Cristobal, 500; Buenaventura to Cristobal, 450; La Union to Cristobal, 74; Guayaquil to Cristobal, 29; Ecuadorian ports to Cristobal, 5; various Central American ports to Cristobal, 916.
Coffee.....	40	1,974	2,014	New York to Vladivostok, 40.
Coke.....	15,143	15,143	30,286	From Baltimore to Callao, 2,412; to Caldera, 5,000; to Guayaquil, 3,288; to Valparaiso, 4,443.
Condurango.....	6	6	12	Paita to Cristobal.
Copper.....	6,704	6,704	13,408	Valparaiso to Liverpool, 197; Townsville to London, 500; Chilean ports to New York, 1,968; Valparaiso to Cristobal, 10; Callao to Cristobal, 4,509; Wilmington to Vladivostok, 8,500.
Copper ore.....	3,059	3,059	6,118	Arica to Liverpool, 737; Chile to New York, 1,258; Chile to Havre, 521; Callao to Cristobal, 270; Salaverry to Cristobal, 223.
Copra.....	90	90	180	Central American ports to Cristobal.
Cotton.....	574	1,064	1,638	New York to Callao, 1,441; Cristobal to Valparaiso, 8,603; Cristobal to Callao, 3,525; Cristobal to Callao to Cristobal, 419; New Zealand to London, 1; Central American ports to Cristobal, 3.
Earthenware.....	17	17	34	Liverpool to west coast of South America.
Eucalyptus.....	3	3	6	New Zealand to London.
Explosives.....	3,569	4	3,573	New York to Vladivostok, 3,567; London to Guayaquil, 4.
Frozen meat.....	2,088	2,808	4,896	New Zealand to London.
Gas cylinders.....	4	4	8	Guayaquil to Cristobal.
General cargo.....	96,919	15,503	112,422	New York to Melbourne, 9,000 tons; New York to Shanghai, 2,836; New York to New Zealand, 15,116; New York to Callao, 1,381; Cristobal to Guayaquil, 4,033; Cristobal to Salina Cruz, 175; Cristobal to San Francisco, 5,576; Cristobal to Tumaco, 160; New York to Hongkong, 6,909; New York to Vladivostok, 13,400; New York to Yokohama and Vladivostok, 779; New York to Chilean ports, 5,805; Baltimore to Caldera, 1,900; Port Talbot to Iquique, 3,567; London to Guayaquil, 4,509; Wilmington to Vladivostok, 8,500; Wellington to Avonmouth, 7,500; Guayaquil to London, 4,740; Valparaiso to Cristobal, 1,108; San Francisco to Cristobal, 1,289; Buenaventura to Cristobal, 495; Talcahuano to Cristobal, 4; Valparaiso to New York, 27; Valparaiso to Liverpool, 16; Callao to Cristobal, 8; Guayaquil to Cristobal, 18; Central American ports to Cristobal, 288; Ecuador to Cristobal, 2; Junin to New York, 7.
Ghee.....	16	16	32	Junin to New York.
Gold.....	2	2	4	Central American ports to Cristobal, 1; Ecuador to Cristobal, 1.
Gun cotton.....	230	230	460	New York to Vladivostok, 230 tons.
Hair.....	10	10	20	Queensland to London.
Hair, horse.....	7	7	14	Valparaiso to Cristobal, 10 tons.
Hats.....	7	7	14	Guayaquil to Cristobal, 4 tons; Ecuador to Cristobal, 2 tons; Tumaco to Cristobal, 1.
Hay.....	19	19	38	Valparaiso to Cristobal, 19.
Hemp.....	300	300	600	Manila to New York, 300 tons.
Iodine.....	104	104	208	Iquique to Cristobal, 72 tons; Iquique to New York, 2; Tocopilla and Talta to Havre and New York, 30.
Iron.....	1,250	2	1,252	New York to Antofagasta, 200 tons; New York to Shanghai, 400; New York to Vladivostok, Yokohama, Kobe, 650; Guayaquil to Cristobal, 2.
Ivory nuts.....	1,719	1,719	3,438	Ecuador to Cristobal, 700; Tumaco to Cristobal, 13; Bahia to Cristobal, 976; Guayaquil to Cristobal, 30.
Lead.....	105	509	614	New York to Talara, 5 tons; New York to Yokohama, 100; Sydney to Cristobal, 500; Callao to Cristobal, 9.
Leather.....	7	7	14	La Union to Cristobal, 3 tons; Guayaquil to Cristobal, 4.
Live stock.....	4	4	8	Central American ports to Cristobal, 4 tons.
Lumber.....	33	130	163	New York to Callao, 35 tons; Corinto to Cristobal, 137.
Manganese.....	79	79	158	Central American ports to Cristobal 35 tons; Punta Arenas to Cristobal, 44.
Mfd. goods—Iron & steel.....	13,366	13,366	26,732	New York to Callao, 11 tons; New York to Vladivostok and Shanghai, 2,800; Liverpool to South American ports, 233; New York to Yokohama, 1,000; New York to Chilean ports, 7,972; New York to Vladivostok, Shanghai, and Kobe, 1,350.
Mfd. goods—Machinery.....	1,288	1,288	2,576	New York to Callao, 798 tons; New York to Vladivostok, 350; Liverpool to South Pacific ports, 140.
Mfd. goods—Miscellaneous.....	299	299	598	Liverpool to southern Pacific ports, 289 tons; New York to New Zealand ports, 10.
Mfd. goods—R. R. material.....	463	463	926	New York to Callao, 463 tons.
Mfd. goods—Textiles.....	793	793	1,586	Liverpool to south Pacific ports, 550 tons; New York to Vladivostok, 243.
Metals, miscellaneous.....	825	825	1,650	Coginimbo to New York, 18; Amapala to Cristobal, 2; New Caledonia to Glasgow, 800; Central American ports to Cristobal, 5.
Naphtha.....	7,600	7,600	15,200	Talara to New York, 7,600 tons.
Naval stores.....	1,521	166	1,687	Manila to Virginia, 166 tons; Norfolk to San Francisco, 1,521 tons.
Nitrates.....	152,198	152,198	304,396	Chile to France, 6,000 tons; Iquique to Norfolk, 8,400; Iquique to Cristobal, 5,610; Mejillones to Norfolk, 7,800; Tocopilla to New York, 8,549; Antofagasta to New York, 2,900; Pisagua to Norfolk, 7,100; Talta to France, 5,400; Tocopilla to Newport News, 5,115; Iquique to Cristobal, 6,300; Antofagasta to Charleston, 5,900; Tocopilla to Delaware River, 7,000; Antofagasta to Marseilles, 5,901; Junin to Norfolk, 1,271; Junin to New York, 8,236; Mejillones to Norfolk, 6,710; Chile to Charleston, 5,777; Antofagasta to New Orleans, 3,908; Caleta Buena to Cristobal, 2,269; Tocopilla to Norfolk, 10,160; Mejillones to Delaware River, 9,000; Talta to Virginia, 8,200; Antofagasta to New York, 8,601.
Oils, vegetable.....	1,311	1,311	2,622	New York to Shanghai, 642 tons; Liverpool to south Pacific ports, 36; New York to New Zealand ports, 63.
Oil, crude.....	8,492	3,790	12,282	San Francisco to Cristobal, 3,785 tons; New Zealand, to Cristobal, 5; Tuxpan to Pisagua, 8,492.
Oil, lubricating.....	810	810	1,620	New York to Yokohama, 600 tons; New York to Kobe, 210.
Ores, miscellaneous.....	4,064	4,064	8,128	Callao to Liverpool, 24 tons; Junin to New York, 5 tons; Callao to New York, 35 tons; New California to Glasgow, 4,000 tons.
Paint.....	32	32	64	Liverpool to South Pacific ports, 32 tons.
Pearl shells.....	13	13	26	Central American ports to Cristobal, 13 tons.
Peas.....	70	70	140	Chile to Havre, 70 tons.
Petroleum, refined.....	62,748	62,748	125,496	New York to Shanghai, 11,577 tons; New York to Taku Bar, 8,200; New York to Chinkiang, 5,868; New York to Chilean ports, 625; New York to New Zealand ports, 9,792; New York to Brisbane, 6,000; New York to Hongkong, 8,000; New York to Chifu, 9,200; Philadelphia to Sakai, 3,486.
Railroad cars.....	4,000	4,000	8,000	New York to Vladivostok, 4,000 tons.
Rice.....	61	61	122	San Francisco to Cristobal, 2 tons.
Rosewood.....	2	2	4	Central American ports to Cristobal, 2 tons.
Rosin.....	300	300	600	New York to Vladivostok, 300 tons.
Rubber.....	74	74	148	Central American ports to Cristobal, 14 tons; Guayaquil to Cristobal, 23; Tumaco to Cristobal, 8; Callao to Cristobal, 22; Chilean ports to Cristobal, 5; Ecuador to Cristobal, 2.
Scrap metal.....	7	7	14	Valparaiso to Liverpool, 1 ton; Valparaiso to Cristobal, 7.
Seed.....	1,567	1,567	3,134	Paita to Liverpool, 1,278 tons; New Caledonia to Glasgow, 289.
Silver.....	1	1	2	Central American ports to Cristobal, 1.
Silver ore.....	15	15	30	Salaverry to Cristobal, 15 tons.
Silver sulphide.....	5	5	10	Callao to Cristobal, 5 tons.
Skins and hides.....	1,440	1,440	2,880	Central American ports to Cristobal, 133; Chilean ports to Liverpool, 71; Junin to New York, 241; Callao to Cristobal, 101; Ecuador to Cristobal, 104; Tumaco to Cristobal, 34; Chilean ports to New York, 45; Guayaquil to Cristobal, 23; Salina Cruz to Cristobal, 28; Paita to New York, 2; Chilean ports to Cristobal, 160; Brisbane to Cristobal, 500.

Commodity.	Atlantic to Pacific.	Pacific to Atlantic.	Total tons.	Remarks.
Staples.....	800	800	1,600	New York to Yokohama, 800 tons.
Sugar.....	5,096	5,096	10,192	Chilean ports to Liverpool, 511 tons; Salaverry to Cristobal, 1,438 tons; San Francisco to Colon, 500; Acajutla to Cristobal, 103; Callao to Cristobal, 1,641; Salaverry to Cristobal, 824; Central American ports to Cristobal, 82.
Tallow.....	57	57	114	New Zealand to Cristobal, 57 tons.
Tea.....	7	7	14	Liverpool to south Pacific ports, 7 tons.
Textile material.....	100	100	200	Bluff, N. Z., to London, 100 tons.
Tin.....	1,886	6	1,892	Valparaiso to Liverpool, 6 tons; New York to Talara, 311; New York to Kobe, 1,500; Liverpool to South America, 75.
Tin ore.....	390	390	780	Chilean ports to Liverpool, 390 tons.
Tobacco.....	890	2	892	Corinto to Cristobal, 2 tons; New York to Shanghai, 640; New York to Yokohama, 250.
Tungsten.....	6	6	12	Mollendo and Arica to New York, 6 tons.
Vanadium.....	143	143	286	Callao to Cristobal, 143 tons.
Wax.....	300	10	310	New York to Yokohama, 300; Valparaiso to New York, 5 tons; Valparaiso to Cristobal, 5 tons.
Wheat.....	7,060	7,060	14,120	Sydney to London, 464 tons; Portland to Norfolk, 6,596 tons.
Wire fencing.....	9,065	9,065	18,130	New York to Vladivostok, 2,000 tons; Newport News to Vladivostok, 5,465; New York to Shanghai, 1,600.
Wool, hard.....	58	58	116	Cuerpo to London, 3 tons; Paeta Arica to Cristobal, 55.
Woolfram.....	47	47	94	Arica to New York, 24 tons; Callao ports to Cristobal, 23.
Wool.....	1,138	1,138	2,276	Callao to Liverpool, 256 tons; Junin to New York, 35 tons; Callao to Cristobal, 23 tons; Mollendo to Cristobal, 96; Arica to Liverpool and New York, 128 tons; Queensland to London, 600.
Totals.....	292,771	225,020	517,791	

## WEATHER CONDITIONS.

Prevailing Over the Canal Zone in the Month of July, 1916.—New Records.

The rainfall for the month was above the average at eight stations and deficient at 10 stations. Over the Pacific section and the Trinidad branch of Gatun Lake, the rainfall was generally above the normal, while along the Canal proper, there was a marked deficiency extending from Frijoles to Colon. The rainfall at Colon was 5.75 inches below the 46-year average, and the lowest July rainfall at this station since 1905. The rainfall at Bocas del Toro was the lowest on record for July. Totals for the month (Bocas del Toro excepted) ranged from 7.23 inches at Frijoles to 18.56 inches at the Indio station on the upper Chagres. The greatest amount of precipitation recorded on any one day was 4.06 inches, at Alhajuela on July 5, which was the only daily rain in excess of four inches.

Comparisons are afforded by this tabulation of rainfall in July for the past three years:

STATIONS.	1914	1915	1916	Station average.	Years of record.	Rainy days, 1916.
<i>Pacific Section.</i>	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>In.</i>		
Balboa.....	5.00	6.66	9.79	8.20	20	21
Balboa Heights.....	4.32	6.03	10.13	7.84	20	23
Miraflores.....	4.81	8.14	8.88	8.00	8	22
Pedro Niguel.....	7.15	8.54	9.17	8.59	9	21
Rio Grande.....	5.80	10.24	8.10	9.85	12	25
<i>Central Section.</i>						
Culebra.....	5.28	12.99	8.84	9.31	25	22
Canacho.....	4.94	12.06	9.31	9.01	10	22
Empire.....	5.02	12.17	7.85	8.11	12	24
Gamboa.....	3.91	8.13	9.59	10.10	36	24
Juan Mina.....	9.72	13.50	10.27	9.82	6	23
Alhajuela.....	7.21	15.71	12.05	12.62	18	27
Vigia.....	8.23	17.74	12.05	12.04	8	28
Frijoles.....	4.06	2.10	7.23	9.56	5	27
Trinidad.....	2.42	13.61	13.26	9.47	9	20
Monte Lirio.....	3.54	15.73	9.64	12.03	9	20
<i>Atlantic Section.</i>						
Gatun.....	4.28	18.21	9.68	11.78	12	23
Brazos Brook.....	10.30	21.34	11.44	15.70	11	21
Colon.....	10.74	20.72	10.44	16.19	46	20
Bocas del Toro.....	18.77	7.59	2.30	15.15	8	12

The estimated rainfall over Gatun Lake watershed was six per cent above the 6-year average, and over the Chagres River basin above Alhajuela it was 10 per cent below the 15-year average.

The air temperature was approximately two degrees Fahrenheit below the normal on the Pacific coast, and one degree Fahrenheit above the normal on the Atlantic. The atmospheric pressure, daytime cloudiness, and temperature of the seas were slightly

above normal on both coasts, and the relative humidity was approximately normal. There was a marked deficiency of the wind movement, the average hourly velocities at Balboa Heights and Colon being the lowest on record for the month of July. There was an excess of evaporation on the Atlantic coast, and a deficiency on the Pacific coast and over Gatun Lake.

No fogs were observed on either coast, but a number of fogs were observed at Alhajuela,

37 per cent of which were dissipated by 6.30 a. m. All lifted or were dissipated by 8 a. m.

Elevations of Gatun Lake, in feet above mean sealevel, were as follows: Maximum, on the 5th, 86.57; minimum, on the 31st, 86.24; mean for the month, 86.40.

Evaporation from the lake surface during the month amounted to 3.491 inches.

The following is a summary of the climatological conditions at the ends of the Canal:

STATIONS.	Temperature.						Precipitation.				Wind.			
	Pressure (reduced to mean of 24 hours.)						Mean relative humidity.							
	Mean.	Maximum.	Date.	Minimum.	Date.	Mean relative humidity.	Total inches.	Station average.	Days of .01 inch or more.	Total movement (inches).	Prevailing direction.	Max. velocity in miles.	Direction.	Date.
Colon.....	29.862	80.6	90 July 3	73 July 6	89	10.44	16.19	20	4,325	S.E.	23	N.E.	July 18	
*Balboa Heights...	29.866	78.5	90 July 13	70 July 11	91	10.13	7.84	23	3,896	N.	30	S.W.	July 28	

\*Formerly Ancon.

## Large Dredges Placed in Dry Dock.

The 15-yard dipper dredge *Paraiso* was docked in the new dry dock No. 1 at Balboa shops on July 21, 1916, for minor repairs to the plating around the spud-wells and for cleaning and painting of the hull. Work was done by forces from the Balboa and *Paraiso* shops of the Mechanical Division, working 12-hour shifts, day and night. The repairs necessary consisted principally of renewing rivets and patching plates in the spud-wells, and work was completed on July 27.

The *Paraiso* was returned to service in the Cut on July 28, and the *Gamboa* was brought into the dry dock for repairs of similar nature at noon on August 2. The *Gamboa* left the dock in the morning of August 9.

## Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below, information concerning the same being posted at Canal clubhouses and post offices, as per the numbers of announcements indicated:

Assistant material engineer (male); \$5.04 and \$6 a day entrance salaries; examination September 5, 1916; No. 1012.

Explosives chemist (male); \$3,000 a year; examination September 12, 1916; No. 1031.

Architectural and structural steel draftsman (male); \$1,500 a year; examination on or about September 10-11, 1916; No. 1032.

## Levelman and Transman Examination.

A levelman and transman examination will be held in the board room of the Administration Building at Balboa Heights on

Sunday morning, September 24, 1916, at 9 o'clock.

Those desiring to take the examination will submit an application through the heads of their divisions, giving the following information:

(a) Examination desired (levelman or transman).

(b) Name and address.

(c) State the extent of your education, with names of preparatory schools and colleges, together with dates of graduation.

(d) Give an outline of your experience, with the approximate length of time served in each position.

All applications are to be mailed to the Office Engineer, Balboa Heights, on or before September 14, 1916.

On Sunday, the 24th proximo, a written and oral examination will be given, all papers to be completed by 12 m., all parts of the examination to have the following count:

	Points.
Education.....	10
Experience.....	15
Written examination.....	50
Oral examination.....	20
Free hand lettering.....	5

Total..... 100

Those receiving a standing of 70 or better will be eligible for promotion to the positions of levelman and transman, respectively, as vacancies occur.

C. J. EMBREE, O. E. MALSBUY, A. WILSON,  
Board of Examiners.



## PANAMA CANAL DIRECTORY.

## Executive Department.

Headquarters, Balboa Heights.

GEO. W. GOETHALS, U. S. A., Governor.

M. B. Stevens, Secretary.

C. A. McILVAINE, Executive Secretary.

W. P. Copeland, Chief Clerk,

Executive Office.

Crede H. Calhoun, Chief, Division

of Civil Affairs, Balboa Heights.

Capt. Harry D. Mitchell, U. S. A.,

Chief, Division of Police and

Fire, Balboa Heights.

A. R. Lang, Superintendent, Division

of Schools, Balboa Heights.

T. S. Booz, General Secretary, Bureau

of Clubs and Playgrounds,

Balboa.

FRANK FEUILLE, Special Attorney, Ancon.

WALTER F. VAN DAME, Assistant to

the Special Attorney, Ancon.

R. S. CARLSON, Land Agent, Ancon.

CHARLES R. WILLIAMS, District Attorney,

Ancon.

## Department of Operation and Maintenance.

(Under immediate direction of the Governor as

Head of the Department.)

Headquarters, Balboa Heights.

LIEUT.-COL. CHESTER HARDING, U. S.

A., Engineer of Maintenance.

LIEUT.-COL. JAY J. MORROW, U. S. A., Assistant

to the Engineer of Maintenance.

C. O. Carlson, Secretary.

C. J. EMBREE, Office Engineer.

CAPT. W. H. ROSE, U. S. A., Electrical Engineer,

Electrical Division.

D. E. WRIGHT, Municipal Engineer, Division

of Municipal Engineering.

CAPT. T. H. DILLON, U. S. A., Superintendent,

Gatun Locks, Gatun.

R. H. WHITEHEAD, Superintendent, Pacific

Locks, Pedro Miguel.

F. D. WILLSON, Chief Hydrographer, Section

of Meteorology and Hydrography.

O. E. MALSBUY, Assistant Engineer, Section

of Surveys.

F. H. COOKE, Civil Engineer, U. S. N.,

Designing Engineer.

T. B. MONNICHE, Engineer of Docks,

Cristobal.

A. H. JONES, Assistant Engineer, Balboa.

C. C. SNEDEKER, Superintendent, Coco

Solo, Cristobal.

J. W. WRIGHT, Superintendent of Steel

Erection, Balboa.

COMMANDER HUTCHINSON I. CONE,

U. S. N., Marine Superintendent,

Marine Division, Balboa Heights.

LIEUT. P. P. BASSETT, U. S. N., Captain

of the Port, Cristobal.

LIEUT. A. B. REED, U. S. N., Captain

of the Port, Balboa.

Board of Local Inspectors—LIEUT. P. P.

BASSETT, Chairman; J. MACFARLANE,

LIEUT. A. B. REED, Headquarters,

Balboa Heights.

Gen. J. Vanderslice, Recorder.

W. G. COMBER, Resident Engineer,

Dredging Division, Paraiso.

J. MACFARLANE, Superintendent, Paraiso.

C. A. BLACK, Superintendent, Cristobal.

C. L. VANDEBURGH, Junior Engineer,

Paraiso.

D. C. NUTTING, JR., Constructor, U. S. N.,

Superintendent, Mechanical Division,

Balboa.

A. L. BELL, Mechanical Engineer,

Balboa.

GEO. M. WELLS, Resident Engineer, Building

Division, Balboa Heights.

SAMUEL M. HITT, Architect.

T. C. MORRIS, Assistant Engineer.

## Supply Department.

MAJ. W. R. GROVE, U. S. A., Chief Quar-

termaster, Balboa Heights.

CAPT. F. H. SMITH, U. S. A., Assistant

Chief Quartermaster, Balboa

Heights.

R. K. MORRIS, General Manager, Com-

missary Division, Cristobal.

J. J. JACKSON, General Storekeeper, Bal-

boa.

## Accounting Department.

H. A. A. SMITH, Auditor, Balboa Heights.

JOHN H. MCLEAN, Paymaster, Balboa

Heights.

T. L. CLEAR, Collector, Balboa Heights.

AD. FAURE, Chief Accountant, Balboa

Heights.

ELWYN GREENE, Chief Examiner, Balboa

Heights.

## Health Department.

LIEUT.-COL. DEANE C. HOWARD, U. S.

A., Chief Health Officer, Balboa

Heights.

MAJ. ELBERT E. PERSONS, U. S. A.,

General Inspector, Balboa Heights.

MAJ. ALBERT E. TRUBY, U. S. A.,

Superintendent, Ancon Hospital.

MAJ. T. L. RHODES, U. S. A., Super-

intendent, Colon Hospital, Cristobal.

DR. M. C. GUTHRIE, U. S. P. H. S.,

Chief Quarantine Officer, Balboa

Heights.

CAPT. D. W. HARMON, U. S. A., Health

Officer of Colon, Cristobal.

CAPT. H. P. CARTER, U. S. A., Health

Officer of Panama, Ancon.

## Washington Office.

MAJ. EARL I. BROWN, U. S. A., General

Purchasing Officer and Chief of Office.

A. L. FLINT, Chief Clerk, Purchasing

Department.

RAY L. SMITH, Assistant to the Chief of

Office.

Panama Railroad Company.

Office in the United States 24 State Street, New York City.

SAMUEL W. HEALD, Superintendent, Bal-

boa Heights.

W. F. FOSTER, Master of Transporta-

tion, Balboa Heights.

FRANK FEUILLE, Counsel, Ancon.

WALTER F. VAN DAME, Assistant to

the Counsel, Ancon.

## Courts.

WILLIAM H. JACKSON, District Judge,

Ancon.

E. M. Goolsby, Clerk, Ancon.

W. H. MAY, Marshal, Ancon.

S. E. BLACKBURN, Magistrate, Balboa.

JOHN W. THOMPSON, Magistrate, Cris-

tobal.

## Joint Commission.

RICARDO J. ALFARO, Panama City.

CLEMENT L. BOUVE, Ancon.

FEDERICO BOYD, Panama City.

NICHOLAS CORNET, Ancon.

William Taylor, Secretary, Ancon.

## Obituary.

Louis N. Vacher, employed as a carpenter

in the Supply Department and living at Bal-

boa, died in Ancon Hospital on July 25. He

was a native of France but had become an

American citizen and his residence in the

United States at the time of his coming to

the Isthmus was in Baltimore.

## DRY DOCK PUMPING PLANT.

Tests of Equipment at New 1,000-foot Dry Dock

at Pacific Terminus.

In order to demonstrate the fitness of the pumping plant at dry dock No. 1, Balboa, for its duty, and to prove the ability to meet the specified capacities, efficiencies, and reliability tests, a series of tests has been conducted as contemplated by the contract.

The plant comprises four 54-inch main pumps, and two 20-inch drainage pumps, each with a vertical induction motor, and includes the necessary piping, valves, hydraulic control system for valves, electrical switchboard, bilge pump, structural steel and crane, all housed with the motor-driven air compressors in building No. 29, on the south wall of the dry dock at its entrance.

The contract with Henry R. Worthington, contractor for the entire plant, requires that each main 54-inch pump shall discharge an average of 11,100 cubic feet per minute of sea water when pumping against a rising tide, which tide was specified to reach an elevation +8.5 when the dry dock floor, at elevation -39.5, is bare of water. The average overall efficiency of these units is specified as 64½ per cent, including all losses in motors and pumps.

The 20-inch drainage pumps are required to have an average capacity of 1,375 cubic feet per minute each, with an overall efficiency of 64 per cent, when pumping from the culvert below the floor of the dry dock, from elevation -42 to elevation -52, with the tide rising from elevation 0.0 to elevation +8.5.

After preliminary runs during the operation of docking the dredge *Corozal*, official tests were started with unit No. 1 on July 14. The dry dock was flooded and pumping began about five hours before the predicted high tide, with about 35 feet of water in the dock. A timekeeper stationed in building No. 29 rang a series of electric bells located near the observers. The bells rang the first five seconds of each 5-minute period, and as the bells stopped, readings were taken, as follows:

1. Height of tide.
2. Level of water in the dock, both at head and at entrance.
3. Pressure, or head, developed by the pump, by mercury manometer.
4. Power input.

From the level of water in the dock, the volume pumped, in cubic feet, was calculated. From the head developed by the pump, the height to which the water was being lifted was known. These two factors, weight of water and feet lifted, represent the output of work done. The electrical instruments showed the power input. Reducing both input and output to foot-pounds of work, the quotient of output by input gives the overall efficiency. Capacity was found by dividing the volume of the dock at the level where pumping started, by the number of minutes run. Electrical instruments specially calibrated in New York were used, check readings being taken also on the switchboard instrument, and another set of instruments already on the Isthmus. Readings of frequency, motor speed, and temperature of motor windings and thrust bearings were also taken at short intervals.

The mercury manometer consisted of a closed "U"-shaped loop of small pipe, with two sections of glass tubing connected as

## OFFICIAL CIRCULARS.

## Estimates for the Fiscal Year 1918.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 3, 1916.  
HEADS OF DEPARTMENTS AND DIVISIONS:

part of the loop. One end of the "U" was connected to the pump below the impeller and one above. The glass sections were partly filled with mercury and the remainder of the pipe with water. The difference in pressure above and below the impeller pushed the mercury down in one glass and up in the other, so that the difference in the two mercury levels gave a very accurate reading of pressure against the pump.

The same apparatus and methods were used on each main pump and drainage pump in turn. It was found that with 35 feet of water in the dock, one main pump can lay bare the floor in five hours and 10 minutes. On July 18, at 4.20 a. m., all four main pumps were run at once, starting with about 47 feet of water in the dock. On this run, the dock was emptied in one hour and 45 minutes.

The drainage pumps emptied the culvert under test conditions in about 2 hours and 40 minutes, showing comfortably above the specified capacity.

As The Panama Canal, by the terms of the contract, is to pay a bonus for better performance than that guaranteed, and will exact a double penalty for performance not equal to the contract quantities, both field readings and office calculations have to be made with the best possible accuracy. Accordingly, measurements were made with a hook gage to determine how much water flows into the dock by seepage, leaking of gates and valves, etc. These readings were taken just before and just after each drainage pump test, while no pumping was being done. The exact elevation of the water was taken at intervals of two to five minutes for half an hour or more, the rise of water in the culvert showing the quantity of water coming in.

While the complete computations have not yet been finished, enough calculations have been made to show that each unit exceeds the guaranteed capacity and efficiency, and the contractor will be entitled to a bonus on the performance of the units.

The pumping plant, with the air compressors controlled from the same switchboard, constitutes the largest single electrical load on the Isthmus. If all pumps and compressors are running a total of about 7,500 horsepower is required, or almost the entire present output of the Gatun hydroelectric installation.

## Ships to be Used in New Trans-Pacific Service of Pacific Mail.

The steamship *Ecuador*, one of the three ships purchased from the Royal Dutch West India Mail by the Pacific Mail Steamship Company, arrived at Cristobal from New York on July 27, and passed through the Canal on her way to San Francisco. These ships have been engaged in the Atlantic trade, and the *Venezuela* is to follow the *Ecuador* to San Francisco after discharging her next cargo from Europe at New York. The third ship, the *Colombia*, is being repaired at Gravesend, near which port she struck a mine.

The three ships will be used in a resumption of the Pacific Mail service between San Francisco and the Far East. Five other ships for this service are under order, to be constructed in Atlantic coast shipyards. The itinerary of the lines is to be from San Francisco to Honolulu, Yokohama, Kobe, Nagasaki, Shanghai, Hongkong, and Manila, and return over the same course.

1. Detailed estimates for all departments and divisions for the fiscal year ending June 30, 1918, for submission to Congress, will be forwarded, in sextuplicate, direct to the Auditor on or before September 10, 1916.

2. The estimates must be prepared and submitted in accordance with Section 6 of the Sanitary Civil Appropriation Act for the fiscal year 1915, approved August 1, 1914, reading as follows:

"Sec. 6: That for the fiscal year nineteen hundred and sixteen and annually thereafter the estimates of appropriations for the Panama Canal shall be submitted in detail showing the amounts required for personal services and the amounts required for material, including all supplies, under the heads of construction, maintenance, operation, sanitation, and civil government, and following each there shall be submitted notes giving in parallel columns information which will show the number, by grade and classes, of officers, employees, and skilled and unskilled laborers proposed to be paid under each of said appropriations for the ensuing fiscal year and those paid at the close of the fiscal year next preceding the period when such estimates are prepared and submitted; also, in connection with each item for material and miscellaneous purposes other than salaries or pay for personal services, the amounts actually expended or obligated, quantities purchased, and prices paid for material or supplies during the entire fiscal year preceding the preparation and submission of said estimates.

"There shall also be submitted in connection with the foregoing information, statements of actual unit cost of all construction work done, and of estimated unit cost of work proposed to be done, for the fiscal years included in the notes so required to be submitted with the annual estimates."

3. The estimates must be submitted under each of four heads—"Construction," "Maintenance and Operation," "Sanitation," and "Civil Government." Operation and maintenance divisions that will do construction work must specify the items of construction work that they will perform, the amount that will be charged for such work, and the proportion of labor, material, and indirect charges to be charged by them to construction.

4. The estimates for salaries and wages of officers and employees and skilled and unskilled labor will be prepared on form P. C. 279; the estimates for material, supplies, plant, equipment, and miscellaneous items will be prepared on form P. C. 280-Rev.

5. The estimates for salaries and wages will be arranged in the order in which they were included in the estimates for 1916. The form of the estimates for 1917 should be followed exactly.

6. Under "Organization paid June 30, 1916," the exact organization should be shown as it existed at that time.

7. If an increase in any item is submitted, either in number of employees or rates of pay, concise reasons for the increase must be given on a separate statement.

8. In submitting estimates for "Officers and employees" and "Skilled and unskilled labor," the heading "Officers and employees" and "Skilled and unskilled labor" should be shown in both the column "Estimates for 1918" and "Actual force paid June, 1916." Subtotals must be made both as to number of men and the amount for "Officers and employees" and "Skilled and unskilled labor." Where more than one sheet is used, this sub-total must show on the last sheet, and the total of both must be carried to the bottom of the last sheet of the estimate.

9. Overtime will be estimated for separately as a lump sum item.

10. In addition to the items of material and supplies estimated for on form P. C. 280-Rev., there will be submitted an estimate for the following items:

a. Purchase, maintenance, repair, and operation of motor-propelled or horse-drawn passenger carrying vehicles, with an explanation of the amount required, the public purposes for which the vehicles are intended and the officials or employees by whom the same are to be used.

b. Equipment, item by item.

c. Freight transportation furnished by the Panama Railroad.

d. Telephone service.

e. Traveling expenses.

f. Work to be performed by other departments and divisions, specifying each department or division separately and the character of the work to be done.

11. In addition the estimates will be accompanied by a statement of the work to be performed for other departments and divisions. This statement, as well as the statement of work to be performed by other departments and divisions, should only be submitted after an agreement is reached as to the character of the work to be done and the amount to be charged therefor.

12. The estimates for construction work will be accompanied by a statement showing the estimated cost of the proposed work to be done, compared in parallel columns with the actual cost of similar construction work done during the fiscal year 1916.

13. Care must be taken to have the estimates for "Salaries and wages," form P. C. 279, typewritten in exactly the same form as they appear in the book of estimates for the fiscal year 1917. The following form is the only correct one:

16 foremen at \$1,950 each.....	\$31,200.00
60 foremen at \$1,800 each.....	108,000.00
15 foremen at \$1,500 each.....	22,500.00

The symbol "6" for "at," or "ditto" or "do" must not be used, nor should the word "each" after each rating be omitted. The zeros ".00" indicating cents must be omitted when typing rate of pay, but must be used in column "Total per annum."

14. Under Section 3 of the Sanitary Civil Appropriation Act approved June 23, 1913, the Auditor has been designated to supervise the compilation and classification of all estimates for the Panama Canal, and he should be consulted if these instructions are not understood. Before the estimates are typewritten the Auditor should be consulted as to the form so as to make it unnecessary to rewrite them in his office.

CHESTER HARDING,  
Acting Governor.

## Gravel and Sand for Building in Colon.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 5, 1916.  
To all concerned—Circular of July 8, 1916, withdrawing the concession in the price of gravel and sand for use in construction of buildings in the burned district of Colon, applies only to the area destroyed by fire on April 30, 1915.

This concession will continue to be granted for the period of one year from date on gravel and sand used in constructing buildings in the area covered by fire of July 9, 1916. Parties desiring gravel and sand at a concession of 50 cents per cubic yard from the regular price of \$1.75 per cubic yard, must notify the Auditor of The Panama Canal of any contract entered into for the construction of buildings in the burned area, giving an estimate of the quantity of gravel and sand that will be required. This material will be charged at \$1.75 per cubic yard and upon completion of the building, claim for rebate of \$.50 per cubic yard will be entertained when supported by original expense bills.

CHESTER HARDING,  
Acting Governor.

## Acting Captain of the Port at Cristobal.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 1, 1916.  
To all concerned—During the absence on leave of Lieut. P. P. Bassett, U. S. Navy, Canal Pilot H. G. Oliver will, effective this date, be Acting Captain of the Port, Cristobal, and Acting Member of the Board of Admeasurers.

CHESTER HARDING,  
Acting Governor.

## Acting Magistrate at Balboa.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 2, 1916.  
To all concerned—Effective August 3, 1916, and during the absence on leave of Judge Samuel E. Blackburn, Mr. F. G. Swinson will perform the duties of magistrate for the subdivision of Balboa.

CHESTER HARDING,  
Acting Governor.

## Mailing Printed Reports and Articles of Merchandise under Penalty Cover.

THE PANAMA CANAL,  
EXECUTIVE DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 2, 1916.  
HEADS OF DEPARTMENTS AND DIVISIONS:  
The attention of this office has been invited to the fact that mail matter of the second, third, and fourth classes destined for delivery beyond the Canal Zone is being forwarded under penalty cover as first-class matter by various departments and divisions of The Panama Canal. Owing to the great difference in cost of steamship transportation of first-class matter and other classes of mail matter, it is requested that de-



partments and divisions mailing matter which need not be included in bags of "letter mail" stamp such matter "Third class" or "Fourth class" as the case may be, or else advise the post-offices of the nature of the contents, in order that the matter may be despatched in the class to which it belongs.

By direction of the Acting Governor,  
C. A. McILVAINE,  
Executive Secretary.

#### Accountable Official.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT.  
BALBOA HEIGHTS, C. Z., August 1, 1916.

#### CIRCULAR NO. 131:

Effective August 1, 1916, Mr. J. J. Jackson is designated an accountable official for The Panama Canal, and as such will account for all stock carried at Balboa store.

Mr. R. K. Morris will cease to be an accountable official upon effecting a transfer of his accountability to Mr. Jackson.

Ad. FAURE,

Approved: Acting Auditor, The Panama Canal.  
CHESTER HARDING,  
Acting Governor.

#### Accountable Official for Dry Dock Storehouse.

THE PANAMA CANAL,  
ACCOUNTING DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 1, 1916.

#### CIRCULAR NO. 131:

Effective August 1, 1916, Mr. R. B. Groves is designated as accountable official for the dry dock storehouse under the title of "Storekeeper, Supply Department," as such he will account for all obsolete material and stock carried at Mount Hope.

Mr. L. J. Stapleton will cease to be an accountable official upon effecting a transfer of his accountability to Mr. Groves.

Ad. FAURE,

Approved: Acting Auditor, The Panama Canal.  
CHESTER HARDING,  
Acting Governor.

#### Acting Chief Clerk, Mechanical Division.

THE PANAMA CANAL  
DEPT. OF OPERATION AND MAINTENANCE.  
BALBOA, C. Z., August 2, 1916

To all concerned—During the absence of Mr. F. G. Swanson on other assignment, effective August 3, Mr. R. H. Adams will act as chief clerk of the Mechanical Division.

D. C. NUTTING,

Superintendent, Mechanical Division.

#### Sale of 2-Cylinder Gas Engine.

Sealed bids will be received at the office of the Storekeeper, S. D., Cristobal, until 3 p. m., August 18, when they will be opened in the presence of attending bidders, for the purchase of one Fairbanks-Morse 2-cylinder gasoline engine, approximately power, said engine available for inspection at the Mount Hope storehouse any time between the hours of 7 to 11 a. m., and 1 to 5 p. m. Right is reserved to reject any or all bids. Bids must be plainly marked "Proposal for purchase of gasoline engine, to be opened August 18, 1916," and addressed to R. B. Groves, Storekeeper, S. D., Cristobal, C. Z.

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., August 8, 1916.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be obtained upon request of the addressee. Requests may be made by telephone, calling Balboa, No. 182:

Barrett, Susie L.  
Briggs, Chas. B.  
Britt, Charles  
Conklin, Bertha  
Costello, T. G.  
Daly, Patrick F.  
Daniels, H. A.  
Donohed, J. O.  
Dunn, Larry  
French, Jas. S.  
Fuller, J. J.  
Henry, Leslie H.  
Hoffman, George C.  
Hudson, John E.  
Hudson, Clara A.  
Jerry, Edward N.

Johnson, Wm.  
Johnston, F. H.  
Joyce, R. Robert  
Leaves, C. J.  
Shirley, George  
Lowrey, Mr.  
McCauley, Wm. F.  
McKay, John  
Lori, J. R.  
Nichols, Chas.  
Richardson, Miss E.  
Rosenthal, Dr. I. P.  
Shirley, George  
Stonecipher, Earl  
Wilby, Capt. Francis B.  
Yates, Franklin

#### Joint Commission Calendar.

The following is a calendar of claims set for hearing for the week ending August 19:

Monday, August 14—Docket 566, José Chong; docket 784, José Medina.  
Tuesday, August 15—Docket 1470, Dolores Icaza de Arias.

WILLIAM TAYLOR,

Secretary.

## COMMISSARY DEPARTMENT.

### Price Changes.

The following changes in prices of articles in stock at the commissary stores became effective July 11:

ARTICLE.	PRICE CHANGE.	
	Old.	New.
Belted, yd.	\$0.15	\$0.17
Belted, yd.	0.17	0.17
Capet, rain, ea.	2.00	2.35
Combs, ea.	.20	.24
Hats, twill, ea.	.40	.46
Hats, stetson, ea.	3.15	3.50
Hose, children's, wtd. pr.	.20	.24
Hose, children's, black, pr.	.20	.24
Hose, children's, pr.	.20	.24
Hose, children's, pr.	.18	.25
Laces, corset, ea.	.04	.05

#### EFFECTIVE JULY 17, 1916.

Shoes, boys', pr.	2.75	3.00
Shoes, children's, pr.	2.00	2.40
Shoes, children's, pr.	2.00	2.40
Shoes, children's, pr.	1.45	1.65
Shoes, girls', pr.	2.20	2.50
Shoes, girls', pr.	2.20	2.70
Shoes, men's, pr.	4.00	4.50
Shoes, men's, pr.	5.65	5.85
Shoes, men's, pr.	5.25	5.65
Shoes, men's, pr.	5.15	5.65
Shoes, women's, pr.	3.45	3.80
Shoes, women's, pr.	2.70	2.85
Bags, hand, ea.	10.70	11.35
Brushes, shoe, ea.	.34	.27
Trunks, ea.	12.00	10.40
Leggins, pr.	4.05	4.75

#### EFFECTIVE JULY 19, 1916.

Bottles, vacuum, ea.	1.95	2.50
Carrriages, baby, ea.	8.75	10.95
Clocks, alarm, ea.	2.00	2.20
Mattings, yd.	.19	.26
Mattings, yd.	.19	.26
Pots, alaska, ea.	.25	.18
Kacis, towel, ea.	.50	.42
Spoons, ea.	.45	.07
Spoons, ea.	.28	.35
Spoons, ea.	.10	.14
Trunks, ea.	9.45	7.80
Trunks, ea.	13.15	14.60
Trunks, ea.	8.95	10.60
Trunks, ea.	4.35	4.75
Trunks, ea.	15.90	16.20
Trunks, ea.	11.30	13.50
Coats, rain, ea.	8.30	10.45
Nainsook, yd.	.17	.15
Napkins, ea.	.17	.14
Nightgowns, ea.	.95	.83
Organdy, yd.	.16	.21
Overalls, pr.	.85	1.15
Overalls, pr.	.97	1.10
Pads, scratch, ea.	.04	.06
Pajamas, suit.	1.60	1.75
Pants, khaki, pr.	1.85	2.10
Pants, white duck, pr.	1.70	2.00
Pants, Palm Beach, pr.	2.70	2.35
Pencils, copying, ea.	.09	.03
Robes, bath, ea.	5.10	6.00
Serge, yd.	1.50	2.25
Sheeting, rubber, yd.	.68	.74

#### EFFECTIVE JULY 22, 1916.

Hose, men's, pr.	.18	.11
Ribbon, yd.	.14	.08

#### EFFECTIVE JULY 24, 1916.

Pompeian olive oil, tin.	.34	.67
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#### EFFECTIVE JULY 26, 1916.

Shoes, children's, pr.	2.10	2.20
Shoes, children's, pr.	1.60	1.70
Shoes, children's, pr.	1.10	1.20
Shoes, children's, pr.	2.35	2.60
Shoes, children's, pr.	2.35	2.60
Shoes, girls', pr.	2.65	3.10
Shoes, men's, pr.	4.65	5.10
Shoes, men's, pr.	2.30	2.40
Shoes, men's, pr.	2.35	2.45
Shoes, men's, pr.	4.00	4.70
Shoes, men's, pr.	4.15	4.70
Shoes, men's, pr.	4.15	4.90
Shoes, men's, pr.	5.80	6.10
Shoes, men's, pr.	4.00	5.00
Shoes, men's, pr.	4.00	4.80
Shoes, men's, pr.	4.20	4.85
Shoes, men's, pr.	4.70	4.10
Shoes, men's, pr.	3.35	6.00
Shoe laces, pr.	.03	.04

#### EFFECTIVE JULY 27, 1916.

Lace, yd.	.28	.37
Muslin, yd.	.69	.10
Supporter, hose, pr.	.10	.16
Tape, piece.	.06	.08
Thread, spool.	.07	.10
Towels, ea.	.07	.08
Turkish bath, ea.	.29	.35
Undershirts, ea.	.44	.50

### EFFECTIVE AUGUST 5, 1916.

Bags, shopping, ea.	.18	.20
Brushes, hair, ea.	.65	.83
Canvases, ea.	.81	.92
Clips, pen and pencil, ea.	.01	.02
Cloths, tea, ea.	1.50	2.10
Cloths, tea, ea.	2.20	2.40
Collars, Arrow, ea.	.11	.13
Collars, Arrow, soft, ea.	.12	.13
Combs, ea.	.21	.17
Elastic, yard.	.32	.33
Flannellette, yard.	.09	.11
Hammocks, ea.	5.00	4.75
Handkerchiefs, ea.	.10	.13
Hats, felt, ea.	1.35	1.70
Hose, ladies', black, pr.	.30	.35

### EFFECTIVE AUGUST 8, 1916.

Hose, ladies', tan, pr.	.30	.35
Hose, children's, pair.	.20	.22
Ink, fountain pen, bot.	.17	.20
Knickerbockers, pr.	.78	.50
Paper, crepe, roll.	.07	.09
Paper, crepe, roll.	.07	.09
Pins, safety, doz.	.05	.06
Pins, safety, doz.	.06	.07
Pins, safety, doz.	.03	.01
Sateen, yd.	.16	.19
Shirts, ea.	1.70	1.80
Shirts, ea.	1.40	1.50
Suits, union, each.	.77	.72
Tacks, thumb, doz.	.06	.10
Undershirts, ea.	.18	.20

### EFFECTIVE AUGUST 9, 1916.

Shoes, boys', pr.	3.60	3.80
Shoes, boys', pr.	2.70	3.00
Shoes, children's, pr.	1.45	1.80
Shoes, girls', pr.	1.80	2.05
Shoes, girls', pr.	1.60	1.90
Shoes, men's, pr.	3.90	4.40
Shoes, men's, pr.	4.30	4.55
Shoes, men's, pr.	4.10	4.55
Shoes, men's, pr.	4.10	4.70
Shoes, women's, pr.	3.25	3.65
Shoes, women's, pr.	3.25	3.65
Slippers, men's, pr.	1.85	2.00
Slippers, men's, pr.	1.85	2.00
Slippers, men's, pr.	10.00	11.35
Slippers, men's, pr.	9.00	11.00
Nuts, walnut meat, jar.	.26	.17
Coffee and chicory, No. 4.	.13	.14
Coffee, special, No. 5, lb.	.14	.15
Gelatine, C. & B., pkg.	.14	.20
Mushrooms, tin.	.47	.37
Oil, olive, surfine, pint bot.	.37	.43

### Additions to Stock.

Tobacco, Tuxedo, tin.	\$0.10
Water, Ayenta, pint bot.	.19
Briar pipes, ea.	.57
Clocks, alarm, Tattler, ea.	1.05
Towels, buck, ea.	.10
Curtain, Arcola, ea.	.46
Cheewing gum, juicy fruit, pkg.	.03
Empty King Bee cigarette tins, clean, free	.05
rust, not denters, ea.	.05
Mens' tan blucher shoes, pr.	6.30
Mens' gun me al blucher shoes, pr.	6.00
Mens' tan blucher shoes, pr.	6.10
Embroidery, stickered wash edging, yd.	.02

### Sallings of Vessels in Regular Service with the United States.

NEW YORK TO CRISTOBAL-COLON.				
Vessel.	Line.	Sails.	Arrives.	
Santa Marta.	U. F. C. Aug.	2.	Aug. 9	
Colon.	P. R. R. Aug.	3.	Aug. 9	
Metapan.	U. F. C. Aug.	5.	Aug. 16	
Almirante.	U. F. C. Aug.	9.	Aug. 14	
Advance.	P. R. R. Aug.	10.	Aug. 17	
Pastores.	U. F. C. Aug.	12.	Aug. 20	
Zacapa.	U. F. C. Aug.	16.	Aug. 23	
Alfonso.	P. R. R. Aug.	17.	Aug. 23	

### CRISTOBAL-COLON TO NEW YORK.

Cristobal.	P. R. R. Aug.	10.	Aug. 17
Corrallo.	U. F. C. Aug.	10.	Aug. 17
Tenadores.	U. F. C. Aug.	14.	Aug. 21
Colon.	P. R. R. Aug.	17.	Aug. 23
Santa Marta.	U. F. C. Aug.	17.	Aug. 24
Metapan.	U. F. C. Aug.	21.	Aug. 29
Advance.	P. R. R. Aug.	24.	Aug. 31
Almirante.	U. F. C. Aug.	24.	Aug. 31
Pastores.	U. F. C. Aug.	28.	Sept. 4
Alfonso.	P. R. R. Aug.	31.	Sept. 6

### NEW ORLEANS TO CRISTOBAL-COLON.

Abangares.	U. F. C. Aug.	5.	Aug. 12
Heredia.	U. F. C. Aug.	9.	Aug. 14
Turrialba.	U. F. C. Aug.	12.	Aug. 19
Paraisma.	U. F. C. Aug.	16.	Aug. 21
Atenas.	U. F. C. Aug.	19.	Aug. 26
Corinto.	U. F. C. Aug.	23.	Aug. 28

### CRISTOBAL-COLON TO NEW ORLEANS.

Corinto.	U. F. C. Aug.	13.	Aug. 18
Abangares.	U. F. C. Aug.	13.	Aug. 21
Heredia.	U. F. C. Aug.	20.	Aug. 25
Turrialba.	U. F. C. Aug.	20.	Aug. 28
Paraisma.	U. F. C. Aug.	27.	Sept. 1
Atenas.	U. F. C. Aug.	27.	Sept. 4



## SHIPPING INFORMATION.

## September Weather Probabilities.

The following weather conditions may be expected at the Canal entrances during the month of September, 1916. Predictions are based on the records at Colon and Ancon for the past nine and 10 years, respectively.

**Winds**—Light southeast winds will prevail over the Atlantic coast, with an average hourly velocity of about seven miles, although a maximum velocity as high as 35 miles an hour may occur during the passage of local rain or thunder showers.

Light northwest winds will continue over the interior and the Pacific coast, with an average hourly velocity of about six miles. A maximum velocity of 25 or 35 miles an hour may be expected during local rain or thunder storms, but such velocities seldom last for more than a few minutes.

**Rain**—The average September rainfall on the Atlantic coast, for a period of 45 years, is 12.55 inches, while the average amount at the Pacific entrance, for a period of 19 years, is 7.58 inches. Heavy showers can be expected over both coasts, and 19 to 24 days on which .01 inch or more of rain occurs. The average number of days on which the rainfall equals or exceeds one inch (1.00) is four on the Atlantic coast, and two on the Pacific coast.

**Fogs**—Few, if any, fogs are likely to occur on either coast, but night and early morning fogs will be numerous over the interior. The average number of fogs over the Gaillard Cut section of the Canal during the month of September is 25, fifty-seven per cent of which are dense. (In a dense fog objects can not be distinguished at a distance of 1,000 feet). All fogs that occur may be expected to lift or become dissipated by 8.30 a. m.

**Temperature**—The average shade air temperature over both coasts will be approximately 80° Fahrenheit. At the Pacific entrance, the maximum temperature for the month is not likely to exceed 94° F., or the minimum be lower than 68° F., while at the Atlantic entrance a temperature higher than 91° F., or lower than 71° F., is not likely to occur. The mean daily range in temperature will be about 14° F. on the Pacific coast, and 9° F. on the Atlantic.

**Barometric pressure**—Except for the well-marked diurnal change, variations in atmospheric pressure on the Isthmus are so slight as to have little value as indicators of future weather conditions. The mean atmospheric pressure for the month will be about 29.84 inches over both coasts. The highest pressure is not likely to be above 29.95 inches, or the minimum lower than 29.70 inches.

**Relative humidity**—The percentage of moisture in the air varies but slightly from month to month during the rainy season. The average for the month of September will be close to 85 per cent. The daily range, however, will be greater on the Pacific coast, where the percentage of moisture is higher during the nighttime and lower during the daytime, than on the Atlantic side.

**Storms**—Local wind, thunder, or rain squalls of more or less limited extent may be expected quite frequently over the Isthmus during the month of September. No severe general storms are likely to occur, as the Canal Zone lines without the regions of violent and widespread atmospheric disturbances. The West Indian hurricane season is from July to Oc-

tober, but the normal path of the storms during September lies well to the northward of the Isthmus. However, a rough sea and brisk winds may be experienced occasionally outside the breakwaters, following the passage of one of these storms. The average number of days on which thunderstorms occur is 20 on the Atlantic coast, and 18 on the Pacific.

Generally cloudy weather will continue over both coasts, and smooth to moderate seas may be expected at the Pacific entrance to the Canal.

**Tides**—No consideration need be given to the tidal fluctuation at the Atlantic entrance, as the maximum tidal range at Colon is about two feet.

Panama (Balboa) tide predictions for the remainder of August and for the month of September are given below:

## Tide Predictions, Port of Balboa.

AUGUST.				
DATE.	Time and height of high and low water.			
Wed., Aug. 9.....	5:01	11:01	17:58	.....
	4:0	13:0	3.1	.....
Thurs., Aug. 10.....	0:04	6:20	12:32	19:11
	12.2	3.6	13.4	2.3
Fri., Aug. 11.....	1:18	7:34	13:41	20:15
	13.2	2.7	14.3	1.1
Sat., Aug. 12.....	2:20	8:38	14:41	21:09
	14.4	1.4	15.3	-0.2
Sun., Aug. 13.....	3:15	9:31	15:35	21:57
	15.6	0.2	16.1	-1.2
Mon., Aug. 14.....	4:06	10:19	16:26	22:42
	16.6	-0.8	16.7	-1.8
Tues., Aug. 15.....	4:55	11:04	17:15	23:25
	17.3	-1.3	16.9	-1.8
Wed., Aug. 16.....	5:40	11:47	18:01	.....
	17.4	-1.3	16.6	.....
Thurs., Aug. 17.....	0:07	6:23	12:30	18:44
	-1.3	17.1	-0.8	16.0
Fri., Aug. 18.....	0:49	7:05	13:15	19:27
	-0.4	16.3	0.1	15.0
Sat., Aug. 19.....	1:35	7:46	14:01	20:10
	0.9	15.2	1.3	13.8
Sun., Aug. 20.....	2:22	8:29	14:52	20:55
	2.2	14.0	2.6	12.6
Mon., Aug. 21.....	3:15	9:19	15:48	21:57
	3.5	12.8	3.7	11.5
Tues., Aug. 22.....	4:15	10:21	16:54	23:10
	4.6	11.8	4.4	10.8
Wed., Aug. 23.....	5:24	11:41	18:06	.....
	5.1	11.3	4.6	.....
Thurs., Aug. 24.....	0:38	6:37	12:57	19:15
	10.8	5.2	11.5	4.3
Fri., Aug. 25.....	1:43	7:41	13:54	20:10
	11.4	4.6	12.0	3.5
Sat., Aug. 26.....	2:51	8:33	14:59	20:56
	12.1	3.8	12.7	2.6
Sun., Aug. 27.....	3:10	9:16	15:18	21:35
	12.9	2.8	13.4	1.8
Mon., Aug. 28.....	3:46	9:54	15:54	22:09
	13.7	1.9	14.0	1.2
Tues., Aug. 29.....	4:18	10:28	16:30	22:42
	14.3	1.2	14.5	0.7
Wed., Aug. 30.....	4:50	11:01	17:03	23:14
	14.8	0.8	14.7	0.5
Thurs., Aug. 31.....	5:21	11:34	17:37	23:46
	15.2	0.5	14.9	0.6

## SEPTEMBER.

DATE.	Time and height of high and low water.			
Fri., Sept. 1.....	5:52	12:08	18:11	.....
	15.3	0.6	14.8	.....
Sat., Sept. 2.....	0:19	6:24	12:44	18:45
	0.9	15.3	0.9	14.5
Sun., Sept. 3.....	0:55	6:59	13:24	19:23
	1.4	15.0	1.4	14.0

DATE.	Time and height of high and low water.			
Mon., Sept. 4.....	1:36	7:38	14:11	20:07
	2.0	14.5	2.1	13.3
Tues., Sept. 5.....	2:26	8:25	15:00	21:02
	2.8	13.8	2.8	12.6
Wed., Sept. 6.....	3:28	9:28	16:18	22:19
	3.6	13.1	3.2	12.2
Thurs., Sept. 7.....	4:45	10:52	17:34	23:46
	3.9	12.7	3.2	12.5
Fri., Sept. 8.....	6:05	12:18	18:49	.....
	5.6	13.1	2.5	.....
Sat., Sept. 9.....	7:03	7:19	13:28	19:54
	13.4	2.7	13.9	1.4
Sun., Sept. 10.....	2:03	8:21	14:27	20:49
	14.6	1.4	14.9	0.3
Mon., Sept. 11.....	2:57	9:14	15:20	21:37
	15.7	1.1	15.7	-0.6
Tues., Sept. 12.....	3:45	10:01	16:09	22:21
	16.6	-0.8	16.3	-1.2
Wed., Sept. 13.....	4:30	10:43	16:55	23:01
	17.0	-1.4	16.5	-1.2
Thurs., Sept. 14.....	5:14	11:24	17:39	23:43
	17.0	-1.3	16.3	-0.7
Fri., Sept. 15.....	5:56	12:04	18:20	.....
	16.6	-0.8	15.7	.....
Sat., Sept. 16.....	0:24	6:36	12:45	18:50
	0.1	15.9	0.2	14.8
Sun., Sept. 17.....	1:05	7:16	13:27	19:39
	1.2	14.9	1.3	13.8
Mon., Sept. 18.....	1:50	7:56	14:15	20:21
	2.5	13.7	2.6	12.6
Tues., Sept. 19.....	2:40	8:39	15:09	21:11
	3.7	13.5	3.7	11.6
Wed., Sept. 20.....	3:39	9:35	16:12	22:21
	4.8	11.6	4.5	10.9
Thurs., Sept. 21.....	4:48	10:54	17:23	23:50
	5.3	11.0	4.8	10.8
Fri., Sept. 22.....	6:00	12:15	18:32	.....
	5.3	11.1	4.6	.....
Sat., Sept. 23.....	1:02	7:05	13:19	19:31
	11.3	4.7	11.6	3.9
Sun., Sept. 24.....	1:52	8:00	14:06	20:19
	12.1	8.3	12.4	3.1
Mon., Sept. 25.....	2:31	8:45	14:46	21:01
	13.0	2.8	13.2	2.2
Tues., Sept. 26.....	3:05	9:24	15:23	21:38
	13.8	1.7	13.9	1.5
Wed., Sept. 27.....	3:39	9:59	16:00	22:13
	14.5	0.9	14.5	0.9
Thurs., Sept. 28.....	4:13	10:35	16:36	22:47
	15.1	0.3	14.9	0.6
Fri., Sept. 29.....	4:48	11:09	17:12	23:21
	15.5	-0.1	15.1	0.5
Sat., Sept. 30.....	5:24	11:45	17:49	23:58
	15.7	-0.1	15.1	0.7

The times are placed in the order of occurrence, with their tides on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sea level. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

## Coal and Diesel Oil

Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bulkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$2; at Balboa, the price is \$1 more per ton, either form of delivery.

Diesel engine oil is for sale by several companies at approximately \$2.50 per barrel.

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., August 6, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
July 31..	Canca	British	Pacific Steam Nav. Co.	Cristobal	Gnayaquil	General	862	1,557	998
July 31..	Pinotepa	Mexican	Pacific Navigation Co.	Cristobal	Salina Cruz	General		452	236
July 31..	Hackensack	British	Brown Jenkinson & Sons	Baltimore	Corinto	Coal	5,701	4,203	2,780
July 31..	City of Manila	British	Norton Lilly & Co.	New York	Moreton	Mixed	12,000	9,172	7,011
July 31..	Saint Ronald	British	British & Foreign S. S. Co.	Baltimore	Iquique	Coal	6,090	4,962	3,583
July 31..	Chile	Danish	East Asiatic Co.	Copenhagen	San Francisco	General	7,100	7,379	5,659
July 31..	Eurylochus	British	Alfred Holt & Co.	New York	Vladivostok	General	7,600	6,707	4,606
Aug. 1..	Cilicia	British	International Line of S. S.	Kingston	Pacific Ocean	Coal	5,998	4,099	2,925
Aug. 1..	Huasco	Chilean	South American S. S. Co.	Cristobal	Valparaiso	General	1,316	4,563	3,121
Aug. 1..	Chile	British	Pacific Steam Nav. Co.	Cristobal	Guayaquil	General	1,523	4,040	2,628
Aug. 1..	Demeterion	British	Carlton Steamship Co.	Cardiff	Junin	Ballast		6,057	4,454
Aug. 2..	Baron Minio	British	Hogarth Shipping Co.	New York	Melbourne	Oil	6,000	4,991	3,763
Aug. 2..	Middelen	Norwegian	J. L. Mowinkel & Son	New York	Valparaiso	General	6,700	4,411	3,382
Aug. 2..	African Transport	British	Empire Transport Co. Ltd.	Gibraltar	Paiza	Ballast		4,978	3,657
Aug. 2..	Huheri	British	Booth Steamship Co.	Norfolk	Tocopilla	Ballast		4,922	3,559
Aug. 3..	Taison Maru	Japanese	Hashimoto Kisen K. Kaisha	Port Arthur	Sebai	Oil	4,000	3,651	2,668
Aug. 4..	Hugo Hamilton	Swedish	August Lefler & Son	Maine	Valparaiso	Cement	3,750	2,368	2,208
Aug. 4..	Brisbane River	British	British Empire Steam Nav. Co.	New York	Melbourne	General	8,317	5,554	4,157
Aug. 4..	Port Nicholson	British	Commonwealth & Lominion Line	New York	Auckland	General	14,000	10,609	7,906
Aug. 4..	Albert G. Force (tug)	American	United States Army	Cristobal	Balboa				
Aug. 6..	Admiral Schre	American	Pacific Alaska Nav. Co.	Baltimore	Callao	Coke general	2,617	2,473	1,861
Aug. 6..	San Francisco	American	United States Steel Products Co.	New York	Buenaventura	General	7,400	6,186	4,449
Aug. 6..	Sakara	British	Glasgow Navigation Co.	Norfolk	Mejillones	Coal	5,622	4,357	3,350
Aug. 6..	Bradford	British	Standard Oil Co.	Tuxpan	Pisagua	Oil	9,086	7,236	3,598
Aug. 6..	Landia	Danish	East Asiatic Co.	Copenhagen	Valparaiso	General	6,150	5,371	3,932

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

July 30..	Indrahuala	British	Infra Line	San Francisco	Havana	General	8,000	6,858	4,754
July 30..	Mattinock	American	Standard Oil Co.	Paiza and Talara	New York	Naphtha	9,228	8,071	6,338
July 31..	Frankly	British	Palace Shipping Co.	Caleta Buena	Colon (orders)	Nitrates	6,400	5,173	3,812
July 31..	Thetis	British	Wm. C. Job	San Francisco	New York	Ballast		828	396
Aug. 1..	Middlesex	American	Federal Steam Nav. Co.	Wellington	Meat, guetcl.		4,107	8,495	6,884
Aug. 1..	Eosdin	American	Bowdoin Steamship Co.	San Francisco	Colon (orders)	General	59	800	450
Aug. 1..	Urubamba	Peruvian	Peruvian Steamship Co.	Callao	Colon	General	2,725	4,975	3,118
Aug. 1..	Kim	Norwegian	P. Johannessen	Tocopilla	Norfolk	Nitrates	10,160	7,552	5,605
Aug. 1..	Thade Fagland	Norwegian	W. Wilhelmsens	Callao	Colon (orders)	Nitrates	7,100	4,578	3,586
Aug. 2..	Imperial	Chilean	South American S. S. Co.	Valparaiso	Colon	General	945	3,621	2,397
Aug. 3..	Salvador	British	Pacific Steam Nav. Co.	Corinto	Colon	General	989	1,190	692
Aug. 3..	Beckenham	British	Britain S. S. Co.	Cruz Grande	Philadelphia	Iron ore	6,900	4,043	3,508
Aug. 4..	Oswald	British	Booth Line	Iquique	Liverpool	Nitrates	6,386	5,427	3,750
Aug. 4..	Magellan	French	A. D. Bordes & Sons	Iquique	France	Hides, nitrates	7,200	6,421	4,343
Aug. 5..	Pennsylvania	American	Pacific Mail S. S. Co.	San Francisco	Cienfuegos	Rice flour	2,844	3,429	2,444
Aug. 5..	Darrister	British	Charante S. S. Co.	San Francisco	Liverpool	General	4,007	4,154	2,863
Aug. 5..	Diamondstein	British	Ellerman & Bucknall S. S. Co.	San Francisco	New York	General	6,800	5,633	4,182
Aug. 6..	Copenhagen	Danish	Glasgow Shipowners Co.	Iquique	Colon (orders)	Nitrates	7,048	5,029	3,735

## EXPECTED ARRIVALS FROM PACIFIC.

Aug. 8..	Borates	Ellerman & Bucknall	British Columbia	Aug. 18..	Wakatani	New Zealand Shipping Co.	Wellington.
Aug. 8..	Aysen	South American S. S. Co.	Valparaiso	Aug. 20..	Nippon		Yokohama.
Aug. 15..	Pelona	South American S. S. Co.	Valparaiso	Sept. 7..	Jason	U. S. Navy	San Diego.
Aug. 22..	Linari	South American S. S. Co.	Valparaiso		Quipue	Pacific Steam Nav. Co.	
Aug. 18..	Orari	New Zealand Shipping Co.	Wellington.				

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
July 31..	Quillota	Pacific Steam Nav. Co.	London	Aug. 1..	Herald	United Fruit Company	Ceiba.
Aug. 1..	Kilpatrick	United States Army	New York	Aug. 2..	Quillota	Pacific Steam Nav. Co.	Kingston.
Aug. 5..	Orubian	Leyland Line	Liverpool	Aug. 4..	Kilpatrick	U. S. Army	New York.

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Aug. 8..	Europa	La Veloce Line	Genoa.	Aug. 12..	Europa	La Veloce Line	Genoa.
Aug. 9..	Montevideo	Spanish Line	Barcelona.	Aug. 12..	Montevideo	Spanish Line	Barcelona.
				Aug. 8..	Orubian	Leyland Line	Galveston.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## \*ARRIVALS.

## \*DEPARTURES.

Aug. 2..	Geo. W. Elder	North Pacific S. S. Co.	Puntarenas.	Aug. 3..	Geo. W. Elder	North Pacific S. S. Co.	Arica, Chile.
Aug. 3..	Clapet No. 2	National Navigation Co.	Panama.	Aug. 3..	Clapet No. 2	National Navigation Co.	Pedregal.

\*Other than ships passing through the Canal.



## The Canal Record

Official publication of The Panama Canal.

The Canal Record is published every week. The subscription rate is \$1 per year for delivery in the United States and its possessions, and in Canada, Cuba, Mexico, and Panama (to which mail can be forwarded under domestic postal rates).

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Address all Communications,

THE CANAL RECORD,

Balboa Heights, Canal Zone,  
Isthmus of Panama.

### NOTES OF PROGRESS.

#### Leasing of Coal Storage Areas to Private Corporations.

The construction work on the permanent coaling plants at the terminals of the Canal has advanced to such a point that their entire completion will require only a few more months. The various coaling companies which have applied for storage space have been notified of this fact, and requested to express their exact desires for space, in order that The Panama Canal may proceed with the assignments of space and the issuance of revocable licences.

Some of the companies had made a blanket application for space, with the understanding that before the completion of the plants they should indicate more precisely their needs; and others had applied for space for a designated number of tons. The latter are given opportunity to increase or decrease the space applied for, and all are requested to advise whether they wish the space in one plant, at either Cristobal or Balboa, or divided between the two.

It is the policy of the Canal to provide space for all applicants and to give equal opportunity to all; companies which may be interested but have not submitted applications heretofore need not, therefore, feel in any way handicapped in entering the field. The Canal has issued the following circulars governing in this matter, which may be secured on application: No. 703, "Private coal and oil depots;" No. 704, "General condi-

tions relative to leasing of coal storage areas;" No. 704-1, "Berths alongside of coal dock;" No. 704-2, "Maximum coal prices." All of these were published in THE CANAL RECORD; Nos. 703 and 704 in the issue of November 3, 1915; No. 704-1 on November 10; and No. 704-2 on May 3, 1916.

#### Operations of the Terminal Oil Plants in July.

During the month of July the tanks of The Panama Canal at the terminal oil handling plants received a total of 87,351.15 barrels of crude oil. The plants issued to departments or divisions of the Canal and railroad organization on the Isthmus an aggregate of 44,093.74 barrels, and sold to outside interests a total of 21,715.97 barrels. The plants used 308.21 barrels for fuel to drive the pumps. The total issues by The Panama Canal were 66,117.92 barrels.

The oil pumped for lessees of lots amounted to 146,703.44 barrels. The aggregate of oil handled by the two plants during the month was 299,864.30 barrels.

Detailed statements of the operations at each plant follow:

	Balboa.	Barrels.
<b>Received—</b>		
From Standard Oil Company (J. A. Moffet).....	60,230.22	
<b>Issued to Divisions—</b>		
Mechanical Division.....	7,983.71	
Health Department.....	464.46	
Supply Department (Ancon Laundry).....	358.29	
Supply Department (dry dock store).....	44.36	
Municipal Engineering Div.....	126.40	
Dredging Division.....	29,361.47	
		38,338.69
<b>Sold to outside interests.....</b>		18,457.53
<b>Pumped for—</b>		
Panama Agencies Co.....	51,288.16	
Union Oil Company.....	46,224.54	
		97,512.70
Oil consumed by plant during the month.....		217.10
Total fuel oil handled during month.....		214,529.14
<b>Cristobal.</b>		
<b>Received—</b>		
Cargo of barge No. 93.....	27,130.93	
<b>Issued to divisions—</b>		
Terminal Construction Division.....	75.23	
Panama Railroad Company.....	952.46	
Health Department.....	217.66	
Dredging Division.....	4,509.70	
		5,755.05
<b>Sold to outside interests.....</b>		3,258.44
<b>Pumped for—</b>		
Texas Oil Company.....	49,190.74	
Oil consumed by plant during the month.....		91.11
Total fuel oil handled during month.....		85,335.16

#### Delivery to Ships of Mail Containing Merchandise.

Delivery of mail parcels containing merchandise addressed to officers and members of crews of ships making the passage through the Canal or calling at the terminal ports of Cristobal and Balboa may be made without the payment of duty to the Republic of Panama, as such merchandise is not being brought into the country. The postmasters at Cristobal and Balboa will forward such parcels to the office of the Captain of the

Port for delivery to the ships in care of which the mail is addressed.

This arrangement is made in line with other extensions of postal facilities to ships which use the Canal and its terminal ports, and have no relations with the Republic of Panama. Care will be exercised to see that the privilege is not abused, and that goods delivered under this arrangement are not brought into Panama afterward.

#### Area of the Canal Zone.

The area of the Canal Zone within the limits of five miles on either side of the center line of the Canal, including land and water but not including the area within the 3-mile limit from the Atlantic and Pacific ends, is 441.5 square miles. This is made up as follows:

	Square miles.
Land area inside of 5-mile limits.....	332.35
Gatun Lake area inside 5-mile limits at elevation plus 87 feet.....	106.40
Miraflores Lake at elevation plus 55 feet.....	1.90
Area of channel from Atlantic coast to Gatun Locks and Pacific coast to Miraflores Locks.....	.85
<b>Total.....</b>	<b>441.50</b>

The statement of the Official Handbook of 1911 that the area of the Canal Zone was 448 square miles was correct at that time. By a treaty proclamation of February 18, 1915, however, an area of about 6½ square miles contiguous to the city of Panama was ceded to Panama in exchange for a small tract in front of the Tivoli Hotel and a small tract in the city of Colon on which a battery is situated.

By the same treaty The Panama Canal acquired absolute control of all the waters of Gatun Lake outside the 5-mile limits and also of all land contiguous thereto up to the 100-foot contour. The area of the portions of the lake lying outside the 5-mile limits is 61 square miles, the total area of the lake being 167.4 square miles, at elevation plus 87 feet. Adding the 61 square miles to the 441.5 square miles lying within the 5-mile limits makes the area of the Canal Zone 502.5 square miles, exclusive of such land as lies between the edge of the lake at 87 feet and the 100-foot contour, and of the areas within the 3-mile limits at the ends.

Supplement No. 4 to Circular No. 571-B, Covering Charges for Stevedoring and Transferring Cargo, etc., issued January 29, 1916, Effective March 1, 1916.

PANAMA RAILROAD COMPANY,  
BALBOA HEIGHTS, C. Z., August 1, 1916.

Effective August 1, paragraph 17, under item 6, is cancelled and replaced by the following:

Steamers must furnish power for operating winches, as well as suitable gear and tackle.

S. W. HEALD,  
Superintendent,

Approved:

CHESTER HARDING,  
Second Vice President.



## COASTWISE TRAFFIC.

## Proportions of Tolls Collected from Vessels in the United States Coastwise Trade.

Including the earnings of tolls for the month of July, 1916, amounting to \$460,122.95, the total amount of tolls collected on traffic passing through the Canal, from the beginning of the towing of laden barges between the terminal ports in May, 1914, and the beginning of the current month is \$7,217,955.74. The collections from vessels in the coastwise trade of the United States, have amounted to \$1,923,122.21; collections from traffic other than coastwise, to \$5,294,833.53.

The tolls from traffic other than coastwise have been 2.7 times the collections from coastwise traffic. The coastwise collections have been 26.64 per cent of all collections.

The proportions in the months of important collections are shown in the accompanying chart. The months of October and November, 1915, are omitted for the reason that no tolls were earned; and in January, February, and March, 1916, the earnings were too slight to show on the chart.

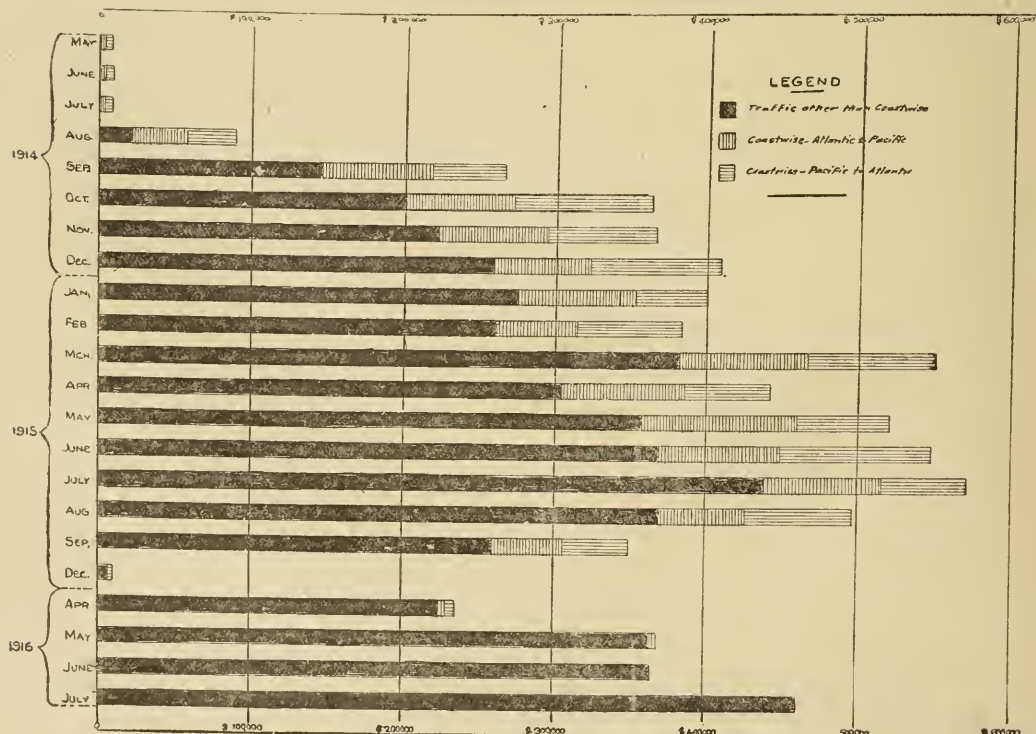
The collections by months since the beginning of traffic are given in the table below. In May, June, and July, of 1914 the traffic consisted of barges towed through the Canal; as they were transferring cargo between ships engaged in the coastwise trade the tolls collected on their passage have been reckoned as coastwise tolls. In the fiscal year 1915 all tolls were, accordingly, coastwise; in the following year, during most of which the Canal was in commercial operation, the

coastwise tolls were 37.67 per cent of all tolls; while in the fiscal year 1916 they were 18.36 per cent. With the closing of the Canal in September, 1915, the vessels of the interrupted coastwise services were diverted to great extent to the foreign trade, and since the reopening of the Canal the regular lines in the coastwise trade have not been rees-

tablished. For the months of July, August, and September the coastwise tolls were 24.97 per cent of all tolls; but for the later months of the fiscal year their proportion was only 1.83 per cent, the percentage for the whole year being 18.36.

The collections, by months, have been as follows:

Month.	Coastwise traffic.			Total on traffic other than U. S. coastwise.	Total on all traffic.
	Atlantic to Pacific.	Pacific to Atlantic.	Total on coastwise.		
May, 1914.....	\$3,216.92	\$3,082.80	\$6,299.72		\$6,299.72
June.....	3,408.16	4,910.80	8,318.96		8,318.96
Total for fiscal year 1914.....	6,625.08	7,993.60	14,618.68		14,618.68
July, 1914.....	2,970.00	4,628.40	7,598.40		7,598.40
August.....	36,488.40	30,876.00	67,364.40	21,037.40	88,401.80
September.....	71,022.43	48,574.80	119,597.23	146,003.52	265,600.80
October.....	71,862.00	90,956.40	162,818.40	203,968.08	366,786.48
November.....	71,035.20	72,482.40	143,517.60	225,643.68	369,161.28
December.....	62,434.80	86,124.00	148,558.80	259,356.00	407,914.80
January, 1915.....	77,226.00	46,348.80	123,574.80	275,026.32	398,601.12
February.....	50,760.00	69,398.40	120,158.40	263,746.56	383,904.96
March.....	85,102.80	84,895.20	169,998.00	381,094.56	551,092.56
April.....	80,611.25	57,080.95	137,692.20	304,723.29	442,415.49
May.....	101,595.35	62,863.30	164,458.65	358,218.30	522,676.95
June.....	80,092.65	90,697.15	170,789.80	368,439.25	539,229.05
Total for fiscal year 1915.....	791,200.93	744,925.80	1,536,126.73	2,807,256.96	4,343,383.69
July, 1915.....	78,840.10	56,331.00	135,171.10	438,194.57	573,365.67
August.....	57,580.20	71,200.80	128,781.00	368,011.03	496,792.03
September.....	45,921.40	44,547.35	90,468.75	259,029.55	349,498.30
October.....					
November.....					
December.....		2,252.50	2,252.50	8,573.50	10,826.00
January, 1916.....				654.39	654.39
February.....				834.00	834.00
March.....				418.80	418.80
April.....	6,187.50	5,606.35	11,793.85	223,824.59	235,618.44
May.....	3,909.60		3,909.60	364,114.19	368,023.79
June.....				363,799.00	363,799.00
Total for fiscal year 1916.....	192,438.80	179,938.00	372,376.80	2,027,453.62	2,399,830.42
July, 1916.....				460,122.95	460,122.95
Grand total to Aug. 1, 1916.....	990,264.81	932,857.40	1,923,122.21	5,294,833.53	7,217,955.74



## The 12 Principal Commodities.

The circle below, representing the aggregate quantity of cargo carried through the Canal during the fiscal year 1916, has been divided into segments in proportion to the 12 principal commodities. The 12 commodities together made up 67 per cent of all



cargo, being 2,009,897 tons out of a grand total of 3,140,046 tons. The miscellaneous articles other than the 12 principal commodities aggregated 1,130,149 tons.

Nitrates amounted to 894,139 tons; refined petroleum to 271,041; coal, 243,216; sugar, 128,544; lumber, 89,685; manufactured goods of iron and steel, 87,375; crude oil, 69,812; railroad material, 57,829; iron ore, 52,250; canned goods, 41,300; barley, 38,006; and copper, 36,700 tons.

## Civil Service Examinations.

The following civil service examinations will be held on the dates indicated below. Information concerning the same has been posted at Canal clubhouses and post-offices, as per the numbers of announcements indicated:

Mechanic and laboratory assistant (male); \$3.50 per diem; examination about September 24, 1916; No. 1082.

Specialist in cotton classing (male); \$2,500 to \$3,500 a year; examination September 19, 1916; No. 1081.

Assistant in cotton classing (male); \$1,800 to \$2,400 a year; examination September 19, 1916; No. 1080.

Leather chemist (male); \$1,600 a year; examination about September 24, 1916; No. 1064.

Bacteriologist (male); \$2,000 to \$2,250 a year; examination September 12, 1916; No. 1065.

## Excavation from the Cut during Two Weeks.

Excavation of material from the bases of the slides at Culebra, on the east and west banks of the Canal, amounted to 106,095 cubic yards in the week ending at midnight of Monday, August 7. Excavation from these slides during the month of July amounted to 1,073,675 cubic yards; the total for the current fiscal year, to August 7, was accordingly 1,259,145 cubic yards.

Excavation from Cucaracha slide during the week amounted to 79,375 cubic yards.

Excavation from the bases of the Culebra slide during the week ending at midnight of August 14 amounted to 136,175 cubic yards, in addition to 31,840 cubic yards at Cucaracha slide and 16,745 cubic yards of miscellaneous maintenance excavation.

## Summary of House-to-House Canvass of Population of the Canal Zone, June 1 to 10, 1916.

## BALBOA DISTRICT

Location.	Americans.		All others.		Americans.		All others.		Total.
	Men.	Em- ploys.	Men.	Em- ploys.	Women.	Child- ren.	Women.	Child- ren.	
ANCON.....	903	903	170	170	385	363	54	3	1,878
Alfonso Hospital.....									
Doctors.....	21	21							21
Nurses.....	5	5			66				71
Patients (except soldiers).....	38	33	269	160	27	5	10		361
Attendants.....	19	19	87	87					116
Tivoli Hotel.....	46	6	44	44	11	4	2		107
PUELO NUEVO.....			48	22			60	49	157
NAOS ISLAND.....	10	10	46	46					56
CULEBRA ISLAND.....									
PALO SECO.....	1	1	14	14	1		5		21
Patients, Palo Seco.....			32				18	12	62
BALBOA, BALBOA HEIGHTS, AND LA BOCA.....									
Quarantine station.....	4	4	16	16	3	1	726	715	4,658
Balboa harbor.....	3	3	6	6					24
Rural district.....									9
CORRAL.....	28	28	111	111	15	6	17	12	189
Asylum.....	3	3			4	4			11
Doctors.....	3	3							3
Nurses.....	4	4							8
Patients.....	5		161				116		282
Attendants.....			25	25			12		37
Rural district.....			80	5			16	13	51
PEPITO MIGUEL.....	233	233	80	80	122	144	59	53	691
Labor camps.....			206	206					206
Rural district, east and west of Canal prism.....									
Red Tank.....			6	76				4	12
MIRALLORES.....	28	28	47	47	75	91	24	31	242
PARAISO.....	20	320	227	213	79	90	183	230	1,129
Jamaica Town.....			204	182			136	127	467
Spanish Town.....			93	60			46	32	171
Floating equipment.....	84	84	400	471					804
Labor camps.....			471	471					471
Rural, from Paraíso to Gamboa.....	4	4	102	99	1	1	12	19	139
CULEBRA.....	9	5	3	74	5	4	24	3	24
El Grande.....			103	103			41	55	199
Enterprise.....									
West Culebra.....									
Golden Green.....			109	17			113	9	314
EMPIRE.....	8	8	109	17	6	4	97	112	353
Lirio Camp.....			99	98			68	92	259
Cerro Camp.....			69	63			71	103	243
Cunette.....	1	1	71	21	1	2	66	61	205
Marlinque Camp.....			40	40			22	19	81
BAS GIBISO.....	7	7	8	8					15
GAMBOA STOCKADE.....									
Total employees.....		2,661		4,609					
Total persons.....	2,724		5,298		1,072	950	1,002	2,008	14,754

## CRISTOBAL DISTRICT

Location.	Americans.		All others.		Americans.		All others.		Total.
	Men.	Em- ploys.	Men.	Em- ploys.	Women.	Child- ren.	Women.	Child- ren.	
GAMBOA.....	25	24	88	88	6	4	20	21	164
Floating equipment.....	8	8	83	83					91
DARIEN.....			5	5					21
FRIOLES.....	2	2	43	39	1		13	17	76
MONTE LIRIO.....	3	3	43	31	2	1	27	31	107
GATUN.....	203	219			180	222			6
Labor camps.....			238	338					210
NEW GATUN.....			1,083	878			742	704	2,534
BOCA MINDI.....			2	2					2
PUERTO ESCONDIDO.....			6	6					6
MARAJUAL.....			44	43					52
MONTE HOPE.....	15	15	84	75	11	20	12	24	166
CRISTOBAL.....	658	658	28	28	195	295			1,176
Folks River.....	16	7	351	314	10	8	234	347	966
Camp Bird.....			1,683	1,683			37	98	1,818
BRACHO.....			17	17					17
TORO POINT.....			4	4			6	1	11
Total employees.....		937		3,534					
Total persons.....	951		5,807		405	550	1,223	1,459	8,795

## GATUN LAKE AREA

Location.	Americans.		All others.		Americans.		All others.		Total.
	Men.	Em- ploys.	Men.	Em- ploys.	Women.	Child- ren.	Women.	Child- ren.	
UPPER CHAGRES.....									
CANO QUEBRADA.....			4				1		5
AGUA SALUD.....				1					
TRINIDAD RIVER.....			3					3	14
GATUN RIVER.....			3					8	12
ZERRO ISLAND.....			3				2	2	7
Total employees.....				1					
Total persons.....			15				10	13	38

## MILITARY ORGANIZATIONS.

## United States Army

Location.	Americans.		All others.		Americans.		All others.		Total.
	Men.	Em- ploys.	Men.	Em- ploys.	Women.	Child- ren.	Women.	Child- ren.	
ANCON-BALBOA:									
Army headquarters (Quarry Heights).....					16	190	10	9	225
Fort Grant.....					28	920	54	41	1,243
COLOMBIA.....					44	1,008	4	63	1,191
CULEBRA.....					38	786	61	57	942
EMPIRE.....					54	1,659	91	69	1,873
LAS CASCADAS.....					55	1,646	48	17	1,797
GATUN.....					13	250	19	15	277
CRISTOBAL.....					4	20	9	11	44
Fort Randolph.....					11	248	19	28	306
Fort Sherman.....					15	425	17	12	469
Total persons.....					278	7,152	404	353	8,187

## United States Navy.

Darien Radio Station.....	1	15	3	2	21
Balboa Radio.....	1	5	2	3	11
Total persons.....	1	20	5	5	31

## PRISONERS.

Location.	Americans		All others		Americans		All others		Total
	Men.	Em- ployes.	Men.	Em- ployes.	Women.	Child- ren.	Women.	Child- ren.	
BALBOA.....	2	21							23
ANCON.....		30							30
PEDRO MIGUEL.....		30							30
GAMBOA PENITENTIARY.....	3	49							52
MONTE LIRIO.....	1	1							2
GATUN.....		22							22
CRISTOBAL.....	1	22							23
Total persons.....	6	137							143

## RECAPITULATION

Location.	Americans		All others		Americans		All others		Total
	Men.	Em- ployes.	Men.	Em- ployes.	Women.	Child- ren.	Women.	Child- ren.	
BALBOA DISTRICT.....	2,724	2,661	5,298	4,609	1,072	980	2,202	2,008	14,254
CRISTOBAL DISTRICT.....	951	937	3,807	3,534	405	550	1,223	1,459	8,392
GATUN LAKE AREA (within C. Z.).....			15	1			10	13	38
MILITARY ORGANIZATIONS (including radio stations).....	7,451				409	358			8,218
PRISONERS.....	6		137						143
Total employees.....		3,598		8,144					11,742
Total persons.....	11,137		9,257		1,886	1,888	3,435	3,480	26,348

H. D. MITCHELL,  
Chief, Police and Fire Division.

## Deceased Employees.

Name	Check No.	Native of	Isthmian residence.	Employed by	Date of death.
James Blake.....	73433	Jamaica.....	Cristobal.....	Supply Dept.....	Aug. 7, 1916.
John Daly.....	87114	Mo. Isthmian.....	CRISTOBAL.....	P. R. R.....	Aug. 1, 1916
Field E. Grut.....	4274	United States.....	Ancon.....	Building Div.....	Aug. 3, 1916
Louis N. Vacher.....	757	United States.....	Balboa.....	Supply Dept.....	July 27, 1916
Norman Walker.....	32763	Jamaica.....	Colon.....		July 26, 1916
William Smith.....	115716	Jamaica.....	Colon.....	P. R. R.....	Aug. 8, 1916

The estates of the abovesaid deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against the estates or any information which might lead to the finding of heirs or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due to them, should be presented at once to the Administrator of Estates, Room 320, Administration Building, Balboa Heights, C. Z. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. The names will be published but once.

## Quarantine Activities in Canal Ports.

The number of persons embarking for foreign ports from the Isthmus in July exceeded by 371 the number of persons arriving from foreign ports, according to the count of the quarantine officials at the ports of Cristobal-Colon and Balboa-Panama. Including the ships which made the transit of the Canal, the total number of persons in the crews examined was 12,573. The number of passengers examined was 4,030; and there were 10 stowaways.

A summary of the activities at the two ports is given below:

Number of vessels inspected and passed.....	220
Number of vessels held in quarantine.....	16
Total.....	236
Number of special inspections made to enforce compliance with anti-plague and mosquito-breeding regulations.....	109
Number of vessels fumigated on arrival.....	18
Number of vessels fumigated on departure.....	4
Number of vessels detained, but sailed in quarantine.....	6
Number of stowaways inspected.....	10
Number of crew examined.....	12,573
Number of passengers examined.....	4,030
Total.....	16,613
Number of supplementary inspections.....	2,210
Number of persons vaccinated at port of arrival because of compulsory vaccination law.....	420
Number of persons vaccinated at port of departure on route because of compulsory vaccination law.....	1,255
Total.....	1,675

Number of persons held in quarantine at the detention houses to complete period of incubation of yellow fever or plague.....	298
Number of persons held in quarantine on board vessels to complete period of incubation of yellow fever or plague.....	1,921
Total number of persons landed from foreign ports:	2,219
Cabin.....	1,661
Steerage.....	1,617
Total.....	3,278
Total number of persons embarked for foreign ports:	
Cabin.....	1,544
Steerage.....	1,805
Total.....	3,649
Total number of persons arriving from coast towns on small launches and sailing craft.....	1,665
Total number of persons sailing for coast towns on small launches and sailing craft.....	1,233
Apparent increase for month from coast towns.....	432
Apparent decrease for month from foreign ports:	
Cabin.....	183
Steerage.....	188
Total.....	371
Number of persons rejected and deported.....	25
Number of bills of health issued or vised.....	212
Number of inspections of docks.....	4
Number of inspections of vessels at docks.....	17
Total number of persons landed.....	4,943
Less number for Pacific ports.....	26
Total.....	4,674
Total number of persons sailing.....	4,882
Total apparent decrease for month.....	208

## OFFICIAL CIRCULARS.

Quarters, Fuel, and Electric Current for Employees on the Gold Roll and for American Citizens on the Silver Roll.

THE PANAMA CANAL,  
EXECUTIVE OFFICE,  
BALBOA HEIGHTS, C. Z., August 5, 1916.

CIRCULAR No. 627-15:

1. Effective August 5, 1916, all circulars covering assignment or occupancy of quarters, or regulating the issue and use of fuel are canceled and the following rules will govern:

## CLASSES.

2. Family quarters for assignment will be divided into four classes according to rate of pay. Class "A" will include all quarters regularly assignable to employees drawing less than \$200 per month; class "B" to employees drawing \$200 and less than \$250 per month; class "C" to employees drawing \$250 and less than \$350 per month, and class "D," official type house, to be assigned by the Chief Quartermaster with the approval of the Governor.

3. Lists of family quarters by classes in each district approved by the Governor, will be displayed in each district quartermaster's office.

4. Applications for original assignment in a district, will be placed on card list according to the date of employee's last entrance into the service, and opposite each man's name will be indicated the class of quarters to which his rate of pay entitles him.

5. A list showing all applications on file for each district will be posted in the office of the district quartermaster and will be open to inspection. Employees are responsible that changes in their classification are made known to the district quartermaster.

6. An employee may, at the request of the head of his department, file an application for family quarters at, or transfer his application to, one point other than that at which he is employed.

7. All applications of employees working within a district will take precedence over applications of class employees working elsewhere regardless of class.

8. Applications for transfer of quarters within a district must be filed in writing with the district quartermaster, and the rules governing original assignment will be applied to transfers within a district. Applications for transfer from without a district will be placed on the assignment list according to date of employee's last entrance into service.

9. An applicant on the waiting list for family quarters, when he becomes eligible for assignment, will be given an opportunity to refuse three separate and distinct tenders. If he does not accept the third tender, his application will be canceled and he will not be allowed to file a new application for similar quarters for a period of 10 days.

10. When an employee forfeits family quarters through failure to occupy them within the time limit, he will not be allowed to file a new application for a period of 10 days.

11. All family quarters distinctly and definitely within hospital grounds shall be regarded as for the use of doctors and nurses, but the assignment of same shall remain under the jurisdiction of the Chief Quartermaster.

12. Applicants for hospital quarters can not place applications for quarters outside of hospital grounds.

13. The wife constitutes the family of an employee, and no consideration can be given applications for family quarters for occupancy by other members of a family than the wife, except from widow or widower employees having dependent children residing with them; unless there are no other applications on file.

14. Hereafter, aliens may not be assigned to gold family quarters until all other applicants have been provided for.

## ASSIGNMENTS.

15. Quarters in each class will be assigned to applicants according to date of last entrance into the service, subject to the following exceptions: An employee in any class, due for assignment to family quarters, in his class, may be assigned to quarters of a class above his own where no applicants of said class desire them; or he may waive assignment in his own class, and await in turn, according to date of last entry into the service, his assignment to quarters in any class below his own. Where service has been equal rate of pay will govern.

16. Employees will be required to accept or reject tender of quarters within 10 days from date of tender.

17. The rules applying to assignment of family quarters will be applicable in the assignment of bachelor quarters, as far as practicable, with the approval of the Chief Quartermaster, be assigned to bachelors with dependent relatives if there are no other applications from American citizens on file for the quarters. Houses coming under the official class may be assigned to bachelors by direction of the Governor.

19. Exchange of quarters will be permitted only



when the rights of no other employee will be interfered with.

#### RETENTION OF QUARTERS.

20. Family quarters may be held during the absence of the employee to whom assigned, or his family, or both simultaneously, for two distinct periods in any service year, not to exceed a total of 120 days for both periods or 90 days for one period, except as provided for in paragraph No. 21. Employees in arranging leaves of absence for themselves, or vacations for their families, must be governed accordingly. The two periods can not be taken advantage of continuously or allowed to overlap each other, either during the absence of both employee and family at the same time or of either separately. The quarters must be regarded as entirely separate and distinct, and the quarters must be reoccupied both by the employee and his family after their first period of absence before they can be vacated, without forfeiture, for the second period of absence.

21. When family quarters are assigned, an employee will be given nine weeks from a date stated in tender in which to occupy the quarters, but this does not apply in case of transfers; except that an employee who has accumulated any leave and who is granted this leave effective at the time he is tendered quarters on an original assignment, or within 30 days thereafter, may be allowed time for the occupancy of his quarters until the expiration of leave granted; provided that in no case shall a house be so held for more than 120 days.

22. An employee, and family, is not to hold quarters, and who has been assigned quarters on an original application will not be allowed to occupy the apartment until 10 days prior to the arrival of his family nor will he be permitted to allow others to do so.

23. Services of employees discharged or resigned, securing immediate employment in some other department or division, are considered continuous as far as quarters are concerned, and the employee who holds quarters or have their applications remain on the list as of original date. Cases of this nature arising, however, should be referred to the Chief Quartermaster.

24. Whenever by reason of temporary decrease of work or other cause, employees have been furloughed without pay for a period not exceeding 30 days, they will retain the rights of quarters during that time.

25. When an employee's services are terminated he will be expected to vacate quarters within 10 days from the date of termination of services.

26. A widow can hold quarters after death of husband until arrangements can be made for her departure.

#### FURNITURE.

27. The allowance of furniture for regular family quarters will be as follows:

1 range	1 kitchen table	1 refrigerator
2 kitchen chairs	2 center tables	6 dining chairs
1 chiffonier	1 dresser	1 dining table
1 sideboard	1 double bed	3 wicker rockers
1 double mattress		

In official houses the following additional articles are authorized:

3 dining chairs	2 parlor chairs	1 serving table
1 Morris chair	1 chiffonier	1 dresser
2 towel racks	1 porch swing	1 double orchard set
1 parlor desk	1 parlor wicker chair	

Employees occupying no housekeeping quarters will be given such furniture as may be available, but in no case more than is provided above for regular family quarters.

28. The issue of beds, mattresses, and one dresser in excess of the above allowance is authorized to families with children. Employees moving from one house to another in the same district will be permitted to take with them, at their own expense, if they so desire, beds, mattresses, and refrigerators.

29. No alterations or additions will be made to any house by the occupant without the approval of the Chief Quartermaster, and no alteration or addition to the electric installation will be made except on the approval of the Electrical Engineer. Such alterations and additions when made will be at the expense of the occupant and will be considered permanent.

#### CONTINUOUS SERVICE.

30. Where due to any special reason an employee has had broken service made continuous, the time during which he was not employed will not be counted in his length of service in computing his quarters status, except that if an employee was discharged and commuted to cash payment such leave time will count.

#### RENTING.

31. Employees are not permitted to allow quarters to be occupied during their absence except by another employee. When any employee permits another employee to occupy his married quarters during an authorized leave or during the absence of his family, a charge may be made by him to cover rental of dishes, linen, and other personal household effects, but in no case shall this be more than \$3 per month.

#### QUARTERS FOR FAMILIES WITH FIVE OR MORE CHILDREN.

32. Families having five or more dependent children living with them will be given preference over all other applicants for transfers to certain designated houses in each district. The numbers of these houses will be on file with the district quartermaster in each district and list of same will be posted with list of applications. Dependent children under this rule will not include sons more than 18 years of age in normal health nor sons or daughters who are working and earning \$40 per month or more.

33. Where quarters have been constructed as an integral part of post-offices, railway stations, hotels, telephone exchanges, filtration plants, or in cases of quarters specially constructed by The Panama Canal in isolated localities adjacent to any activities, the operation of which necessitates the quartering of employees in close proximity thereto, the Chief Quartermaster may on the approval of the Governor make special assignments.

#### ELECTRIC CURRENT.

34. (a) Electric current for lighting and for such electrical appliances as are installed in conformity with the following regulations will be furnished free of charge to employees on the gold roll and American citizens on the silver roll of The Panama Canal and the Panama Railroad Company on the Isthmus of Panama.

(b) No alterations nor additions to electric circuits in quarters as installed by the Electrical Division or any other department or division of The Panama Canal or the Panama Railroad Company will be made except by the Electrical Division on written application to the Electrical Engineer. This applies to changes in number, location, or size of lights; use of extension cords; use of electrical appliances such as irons, fans, hot plates, toasters, percolators, etc., and to all alterations or additions whatsoever.

(c) A charge will be made against employees for the installation of any additional outlets, change of circuits, or other work that may, in the judgment of the Electrical Engineer, be necessary for the use of electrical appliances. This charge will be fixed by the Governor on the recommendation of the Electrical Engineer. Payment will be made to the Collector, upon notification by the Electrical Division that additional outlet is necessary. Applications for the use of irons, fans, hot plates, toasters, or other electrical appliances shall be made on form obtained from the Electrical Engineer. No electrical appliance will be used until the installation is approved by the Electrical Division. A record of all appliances whose use is approved, whether or not a special installation is necessary, will be kept by the Electrical Division.

(d) The Electrical Division will, from time to time, make such inspections of quarters as may be necessary to see that these regulations are complied with.

(e) The use of electrical appliances for which authority has already been obtained under existing regulations, may be continued without further authority.

#### COAL AND KINDLING WOOD.

35. Coal and kindling wood will be supplied to employees, as heretofore, without charge.

CHESTER HARDING, Acting Governor.

#### Use of Official Letterheads!

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., August 7, 1916.

To all concerned—This office has experienced considerable annoyance in the receipt of letters addressed to The Panama Canal and referring to other communications, of which we have no record, which prove to be replies to personal letters written by employees on official letterheads.

In future, letterheads of The Panama Canal and Panama Railroad must be used only for official communications, and employees violating these instructions will be subject to discipline.

CHESTER HARDING,

Acting Governor, The Panama Canal,  
Second Vice President, Panama Railroad Company.

#### Cars of Refuse Sent to Dump 19.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., August 8, 1916.

#### HEADS OF DEPARTMENTS AND DIVISIONS:

Cars of refuse sent to Dump 10, Balboa, will simply be tagged for shipment to that point, and request issued on the roadmaster of the Panama Railroad to have same unloaded. No other forces should do the unloading.

This is necessary in order to prevent the trucks at this point being let covered with scraps of lumber, dirt, and other waste material, which constitutes a source of danger.

CHESTER HARDING,  
Acting Governor.

#### Appointment.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., August 5, 1916.

#### CIRCULAR No. 661-32:

Effective this date, Maj. Albert E. Truby, Medical Corps, U. S. A., is appointed Superintendent, Ancon Hospital, Health Department, vice Lieut. Col. George D. Deshon, relieved from duty with The Panama Canal. Major Truby will report directly to the Chief Health Officer.

CHESTER HARDING, Acting Governor.

#### Cleaning Dump Cars Used for Coal or Gravel.

THE PANAMA CANAL,

EXECUTIVE DEPARTMENT,

BALBOA HEIGHTS, C. Z., August 8, 1916.

#### HEADS OF DEPARTMENTS AND DIVISIONS:

Owing to the fact that there is a large demand for coal and gravel at the present time, it is necessary to use Western dump cars for both purposes.

After cars containing coal or gravel have been unloaded, they should be thoroughly cleaned, in order to do away with complaints, such as gravel containing large coal mixtures and vice versa. Your cooperation in carrying out these instructions is requested.

CHESTER HARDING,

Acting Governor, The Panama Canal,  
Second Vice President, Panama Railroad Company.

#### Operation of Speeders on Panama Railroad Tracks.

THE PANAMA CANAL,

EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., August 8, 1916.

#### CIRCULAR No. 667-2:

1. Effective September 1, 1916, no person shall operate a speeder or other power car over the tracks of the Panama Railroad who does not possess a special permit issued by the Superintendent of the Panama Railroad.

2. Speeder permits will be issued only upon the recommendation of the head of the department or division in which the applicant is employed, and after passing a satisfactory examination on the book of rules of the Panama Railroad and rules governing the operation of speeders over the tracks of the Panama Railroad. The use of speeders will be curtailed as much as possible by the heads of departments and divisions, in order that the possibility of accidents may be reduced to the minimum.

3. All permits for this purpose heretofore issued will be void after September 1, 1916, and application for special permits will be made to the Superintendent of the Panama Railroad.

Any violation of the rules will be reported to this office for proper discipline.

CHESTER HARDING,

Acting Governor, The Panama Canal,  
Second Vice President, Panama Railroad Company.

#### Examination by Board of Local Inspectors.

The Board of Local Inspectors will conduct examinations at the Administration Building, Balboa Heights, room No. 304, on Wednesday, August 23, 1916, beginning promptly at 8 a. m. for persons desiring the following classes of licenses: Pilots, masters, mates, marine engineers, chauffeurs, and navigators of motor boats. All applicants for license must procure from the office of the Board, room No. 211, Balboa Heights, forms of application and information respecting the filing out of the same, not later than a day previous to the examination. In addition, all persons desiring chauffeurs' licenses must provide themselves with automobiles with which to demonstrate their ability properly to operate the same.

The demonstration for applicants for chauffeurs' licenses will be given on Tuesday, the day preceding the written examination, at 2 p. m., at the Administration Building, Balboa Heights.

Applicants for licenses as navigators of motor boats will be required to give demonstration of their ability to operate such boats, and will be obliged to provide themselves with boats for this purpose. This test will be given on Thursday, the day following the written examination as follows: At Cristobal, upon arrangement with the Captain of the Port; at Gamboa, at 8 a. m., and at Balboa at 2 p. m. Applicants for the test at Cristobal or Balboa should present themselves at the office of the Captain of the Port; at Gamboa, the deputy inspector will be present at the Panama Railroad station at the hour mentioned above.

For the benefit of applicants residing in Gatun and Cristobal or Colon, examinations for licenses as navigators of motor boats, and as chauffeurs, will be held at the office of the Captain of the Port of Cristobal on Friday, August 25, 1916, from 9 a. m. until 11 a. m. Applicants should be provided with motor boats or automobiles for the demonstration test.

GEO. J. VANDERSLICE,  
Recorder, Board of Local Inspectors.

## COMMISSARY DEPARTMENT.

## JOINT COMMISSION.

## Fastness of Colors in Bathing Suits.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., July 26, 1916.

## MEMORANDUM NO. 186:

To commissary managers—Tags, bearing the following notice, are being packed with bathing suits which we are receiving from A. G. Spalding & Brothers. It is requested that you call this notice to the attention of your trade:

## IMPORTANT TO BATHERS.

"Salt water rots cloth very quickly. To prevent this, rinse off in fresh water."

"A very unprecedented situation on dyestuffs exists at present in this country, owing to the war. We have used every effort possible to safeguard our customers, but we can not guarantee fast colors, in our knit goods products, as has been our former custom."

R. K. MORRIS,

General Manager, Commissary Division.

## Sale of Electrical Appliances.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
BALBOA HEIGHTS, C. Z., August 9, 1916.

## MEMORANDUM TO ACCOMPANY BULLETIN NO. 343:

A work order has been placed on the Electrical Division for the installation of connections, suitably located in the hardware sections of all commissaries with the exception of Camp Bied, La Boca, Fort Sherman, Fort Randolph, and Gamboa. As soon as connections are installed the following instructions in above numbered bulletin, covering the sale of electrical appliances, may be cancelled:

"Electrical household appliances will be sold in single packages in which they are received from the States. No article will be exchanged after package is opened, but in cases of complaint we will communicate with the manufacturers if purchaser desires us to do so."

All electrical appliances sold will be tested out to the satisfaction of the customer in his, or her, presence. Appliances ordered by any of the commissaries noted above from the wholesaler section or other commissaries will be tested out in the wholesale section or the forwarding commissary before shipment is made. The Commissary Division does not guarantee in any way the electrical appliances sold by it, and all complaints after sale is consummated should be taken up direct with the manufacturer by the customer.

Please give the above wide publicity among the trade.

R. K. MORRIS,

General Manager, Commissary Division.

## Sale of Fruit Baskets.

THE PANAMA CANAL,  
SUPPLY DEPARTMENT,  
CRISTOBAL, C. Z., August 9, 1916.

## MEMO. TO ACCOMPANY BULLETIN NO. 420:

Under the provisions of the above bulletin the sale of baskets of fruit has been limited to Ancon commissary and this depot, and only for delivery to hospital wards and steamships. The General Manager has authorized the removal of this restriction, and baskets of fruit may now be sold by all commissaries as any other merchandise:

The following is quoted from bulletin No. 420:

"The charge in such cases will be the value of the basket, the exact head of the fruit and candy packed therein, plus a charge of 25 cents for extra labor, special d delivery, and a ribbon bow which will be tied to the handle of the basket."

Managers will not carry more than one or two baskets of each type in stock, unless they have a steady demand for a larger quantity. The small quantity now carried will not permit the sale of the baskets separately, but if the demand warrants it our stock will be increased to enable us to do so.

D. W. MACCORMACK,  
Chief Commissary Inspector.

## Part of Local Buyer's Price List.

The following items can be had at the local commissaries, purchased through the local buyer; prices are effective Thursday, August 17, 1916:

FRESH.	Price.
Fresh fish, per lb.....	\$0.12
Turtle (wt. 100 to 200 lbs.), per lb.....	.07
FRUITS.	
Cocoanuts, dry, ea.....	.04
Cocoanuts, water, ea.....	.05*
Limes, per 100.....	.25
Pineapples, ea.....	.09
Sugar cane, ea.....	.03
Plantain, doz.....	.18

\*Indicates advance from last list.

## Certification of Disagreement.

In the matter of the claim of Juan B. Hurtado, for property located in the Trinidad River Valley, certificate of disagreement, rule No. 276, superseding rule 217, docket No. 459, July 1, 1916.—Under the provisions of Article XV of the treaty between the United States of America and the Republic of Panama ratified February 26, 1904, it is provided:

"The President of the United States shall nominate two persons and the President of the Republic of Panama shall nominate two persons and they shall proceed to a decision; but in case of disagreement of the commission (by reason of their being equally divided in conclusion) an umpire shall be appointed by the two Governments who shall render the decision."

Pursuant to the provisions of this article the Commission desires to bring to the notice of the umpire duly appointed under the treaty that the Commission has been unable to reach an agreement in the following:

## The Question of Liability.

The Joint Commission herewith certifies this disagreement to the umpire appointed under the treaty as provided for in Article XV of said treaty.

FEDERICO BOYD, NICHOLAS CORNET, R. J. ALFARO  
CLEMENT L. BOUYE, Commissioners.

In the matter of the claim of the heirs of Agustín Ayala for the property designated as San Lorenzo, certificate of disagreement, rule No. 271, dockets Nos. 1208 and 2851, June 16, 1916.—Under the provisions of Article XV of the treaty between the United States of America and the Republic of Panama ratified February 26, 1904, it is provided:

"The President of the United States shall nominate two persons and the President of the Republic of Panama shall nominate two persons and they shall proceed to a decision; but in case of disagreement of the commission (by reason of their being equally divided in conclusion) an umpire shall be appointed by the two Governments who shall render the decision."

Pursuant to the provisions of this article, the Commission desires to bring to the notice of the umpire duly appointed under the treaty that the Commission has been unable to reach an agreement on the following:

## The Question of Value.

The Joint Commission herewith certifies this disagreement to the umpire appointed under the treaty as provided for in Article XV of said treaty.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, Commissioners.

## Decisions of the Umpire.

In the matter of the claim of Juan B. Hurtado for property previously located in the valley of the Trinidad River, decision of the Umpire, award No. 116, docket No. 459, July 6, 1916.—Wherever reference is made in this decision to "the Treaty" it is understood to mean the Canal treaty between the United States of America and the Republic of Panama, ratified February 26, 1904.

On April 28, 1913, Juan B. Hurtado filed a claim with the Joint Commission for \$2,025 for a plantation said to have been destroyed by the construction of the Panama Canal. Upon hearing the claim the Commission disagreed on the question of liability and it was therefore certified to the umpire for decision in accordance with Article XV of the treaty.

The opinion of two members of the Commission sets out that the claimant claims to have owned 1,000 bananas and plantains, 993 uca plant, 693 otes, and 409 sugar cane plant at Las Dos Hermanas, and 700 plantains, 401 banana plants, and 12 alligator pear trees at Quebrado de Micho, also a house at Guarapo for which he had received payment, but these two Commissioners held that the claimant failed to make out a *prima facie* case and that the claims should therefore be dismissed.

The other two members—Commissioners Alfaro and Boyd—in their opinion held that by the testimony of Margarita Herrera, a half-sister of Hurtado, it is shown that this witness lived with the claimant Hurtado for many years, that he could write, and that he had not been paid for his *finca* which was the subject of this claim. It also appears that while at the time of the trial a voucher was produced showing that Hurtado was paid for the house as above referred to, no voucher was produced to show that he had been paid for the *finca* which is the subject of this claim, although a specific request was at that time made that if such a voucher existed it be made a part of the record in this case.

The testimony of Mr. Wm. K. Jackson on behalf of the Government of the United States is very uncertain as he himself acknowledged, although he says that the claimant was paid \$10 by the Panama Rail-

road Company for a few houses and plantings below the 87-foot contour line.

Commissioners Alfaro and Boyd further say:

"Therefore, summing up all evidence pro and con adduced at the audience, it is evident to our mind that Hurtado was not paid, and that probably some confusion had been made by the Government attorneys in regard to the settlement of some other claim, with that of Hurtado. Consequently we are of the opinion that the claim is just and believe an award should be given in the sum of \$593."

The claimant, Hurtado, died in San Tomas Hospital on February 14, 1914, 10 months after he had presented his claim to the Joint Commission; and before his claim was accorded public hearing and it was his half-sister who testified in behalf of a little girl—the only child and heir of the deceased Hurtado.

Considering that though the evidence on both sides is very meagre, it is more in favor of the claimant, and that by the expression of the treaty the other high contracting party in case of doubt is nobly inclined to favor of the claimants, and that the letter of the President of the United States of May 9, 1904, is very clear on that point, my decision as the umpire duly appointed under the treaty is that the claimant in this case is entitled to an award of \$400 United States currency for the value of his property taken by the United States and an additional \$100 United States currency for the expense of which claimant was put by the trial of the claim and all other damages sustained by him through the acts of the United States, its agents, or employees, a total of \$500 United States currency for all damages of whatever nature to date.

An award is therefore made to the heir of Juan B. Hurtado, in the sum of \$500 United States currency, for all right, title, and interest the claimant may possess or may have possessed in and to all property claimed in Joint Commission docket No. 650, including all damages of whatever nature and expenses incurred to date by the expropriation of said property.

If payment of this award or tender thereof is not made on or before the 6th day of August, 1916, said award shall thereafter bear interest at the rate of six per centum per annum until paid.

VICTOR M. CONCAS, Umpire, Joint Commission.

## Certification of Disagreement.

In the matter of the claim of Carlos Carbone for property located on the Corozal road, certificate of disagreement, rule No. 274, superseding rule No. 219, docket No. 721, June 27, 1916.—Under the provisions of Article XV of the treaty between the United States of America and the Republic of Panama ratified February 26, 1904, it is provided:

"The President of the United States shall nominate two persons and the President of the Republic of Panama shall nominate two persons and they shall proceed to a decision; but in case of disagreement of the commission (by reason of their being equally divided in conclusion) an umpire shall be appointed by the two Governments who shall render the decision."

Pursuant to the provisions of this article the Commission desires to bring to the notice of the umpire duly appointed under the treaty that the Commission has been unable to reach an agreement on the following:

## The Question of Value.

The Joint Commission herewith certifies this disagreement to the umpire appointed under the treaty as provided for in Article XV of said treaty.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, Commissioners.

## Notice of Award.

In the matter of the claim of Carlos Carbone for property along the Corozal road near the city of Panama, decision of the umpire, award No. 117, docket No. 721, July 5, 1916.—Wherever reference is made in this decision to "the Treaty" it is understood to mean the Canal treaty between the United States of America and the Republic of Panama, ratified February 26, 1904.

Mr. Carlos Carbone on May 6, 1913, filed with the Joint Commission a claim for the expropriation by the United States of America of a piece of land situated along the Corozal road near the city of Panama. At the trial of the claim, title to the property and the extension thereof, *i. e.*, 5,656 hectares was admitted by the United States. The Commission, however, was unable to arrive at a conclusion on the question of value, and the claim was therefore certified to the umpire on June 27, 1916, in accordance with Article XV of the treaty, for decision on the question of value only.

The exact location of the land is shown by certain maps filed of record in this cause, and the witnesses generally placed the property at a point about 400 meters from the boundary line of the city of Panama with the Canal Zone or more or less that distance from what is known as the Rio Hendo, Corozadu, or old



## TRANSFERRING CARGO.

### How the Goods are Handled at the Atlantic Terminus.

Five long narrow watermelons, yellow and green, loaded upon a truck, were being pushed along Pier 9 at Cristobal yesterday afternoon by a West Indian negro, one of a hundred laborers handling the cargo of the fruit ship *Parismina*, just arrived from New Orleans. Without any apparent cause, one of the melons burst open revealing watery pink heart and black seeds. The darky pushing the truck stopped and looked, mouth open and eyes glistening, at that fascinating fruit. Sharp and quick he was called back to his work by a stevedore foreman.

Romance has no place in cargo handling.

The ships must make their schedule, and their dates are fixed on the assumption that no time will be lost in unloading and loading at the Panama Canal terminals. Nor is it lost. If a ship wishes, the cargo handling will be carried on day and night. Since the service of a vessel in the Canal trade is rated at between \$500 and \$1,000 a day, many of them choose to unload and load both night and day, and the piers and wharves at Cristobal are almost as busy under the electric lights as they are in daylight.

Negroes from the West Indies make up the mass of the stevedoring force, although there are gangs of Spaniards, a few San Blas Indians, Hindus, Chinese, and Spanish negroes. They live in Colon, and are given steady work according as they "make good" with the foreman. But all go through the same process of "standing in line" for a chance. As early as three o'clock in the morning they begin to form the line; standing outdoors, whether it rains or not, some half asleep, some sitting on boxes or curbs actually asleep and snoring; all waiting until the selection is made at 6 o'clock. Again in the afternoon the line begins to form at 4 o'clock, although the work does not begin until 7.30 o'clock at night. At present about a thousand men are employed, but in times of abnormal rush twice this number are used. And these do not include the stevedoring gangs of the United Fruit Company, Pacific Mail, Pacific Steam Navigation, East Asiatic, Harrison and Leyland, and Elder & Fryles lines, all of which handle their own cargo from ship's hold to wharf and from wharf to hold. At least 500 men are engaged in their private service.

The directing force consists of fifty white Americans, foremen, subforemen, and checkers. The test of a foreman's ability is that he must never allow cargo to "hang."

"Hanging on No. 2 and 3," shouts the superintendent, and the foreman responsible for those ports turns to see cargo at the end of the ship's tackle waiting for a truck to carry it away. He in turn shouts to some darkies who are taking a little rest; they shamble over to their trucks, and soon the cargo that was "hanging" is on the way to its proper pile.

It is never easy to keep the men at work, and at night it is very difficult. The heaped up piles of merchandise make great areas of shadow into which a man may disappear unnoticed, and bags of cacao, coconuts, ivory nuts, piles of hides, packing cases fairly evenly stacked together, or, better than any, the roomy plain top of a piano or automobile box, make comfortable sleeping places. And in such places, or in or under box cars in the yard, or cuddled away in some corner of a ship or

boat, the foremen and timekeepers find the sleepers all night long. A time check is taken every two hours, and a man not in his gang at the time of this check is not paid for the two hours preceding. The ambition of the laggards is to be present at each check, but absent as much time as possible between checks. Some of them do so well at this that they are able to work all day under one name and with one identification check, and to work and sleep intermittently all night under another name and check. In the end, however, they are "spotted," and when the foremen go along the line to choose their men, morning and night, they pass the laggards by.

Arbitrary marks painted upon each parcel assist in proper sorting and storing upon the piers. Take for instance a parcel for Guayaquil delivered upon the piers for transshipment to its port of destination. It will be marked by one of the following symbols: *Compañia Sud Americana de Vapores*, yellow cross in a yellow circle; *Pacific Steam Navigation*, yellow cross in a red circle; *Compañia Peruana de Vapores*, yellow cross in a green circle; unrouned, yellow cross in a white circle; neutral, yellow cross in a blue square; *Pacific Steam Navigation* or *Compañia Sud Americana de Vapores*, yellow cross. Each port or series of ports up and down the west coast has its distinguishing mark. Quickly the stevedoring force learns the significance of the marks, and the men have now become so accustomed to them that they read them without hesitation. Cargo leaves the ship's tackle, is trucked to the checkers who examine it, then is marked by the marker, and the trucker knows without instruction to which pile of freight he should carry it. The carrier that brings the freight to Cristobal leaves its dock, a ship going to the west coast comes in, the cargo is loaded upon it, and thus the transfer is effected without loss of time or energy.

But it frequently happens that a transfer of cargo from one pier to another must be made. A ship from New Orleans carries miscellaneous cargo from various parts of the United States for various ports on the west coast between Portland and Valparaiso. This cargo may be routed by way of various lines, and thus at least half a dozen ships may get a part of it. Only one of these is likely to dock at the pier where this freight is waiting, and even this ship will receive parts of its cargo from other piers. Transfer of freight from one pier to another becomes necessary. Formerly the freight was loaded upon railroad cars, shifted through the yards to the proper wharf or pier and there unloaded and stored to await the arrival of a ship. By use of the industrial truck transfer has been greatly simplified. These trucks take a load of two tons. They are driven by electric motor energized by storage battery. They take cargo from ships' tackle and deliver it to tackle on another pier in less time than would be required under the old system to stow the cargo upon a freight car. Thirty of these trucks are in use at the Cristobal terminal wharves. The cost of operating them is about \$1.70 a day.

An improvement has been noticeable in the past few years in the method of packing goods from the United States. Usually they come to Cristobal in such wrappers or boxes as will stand both rough handling and exposure to salt air. Exceptions still exist, however, in which goods bound for South America are

packed as though for shipment by express to some nearby town. These packages show signs of weakness at Cristobal. At the port of destination they must be unloaded from ship upon a lighter, possibly in a heavy sea, and from the lighter carried to a wharf or wagon. The chance of goods so packed arriving in good condition is poor. But no matter what its condition when a shipment reaches Cristobal it is sent forward. If the case or wrapper is broken, the repair gang patches it up, as the ships will not take cargo whose covering is in bad condition. But this applies only to the wrapper. The condition of the contents is not noted. A machine broken in transit until it is quite unusable is sent forward to its destination, with exception taken all along the line. It is easier to follow out the routine than to make a special case of each damaged shipment. The result is that the consignee refuses to accept the shipment, or accepts it with exception taken. This exception travels back along the line the shipment followed, and finally falls into the hands of the agent that received the goods in good condition. The damage is upon him.

Distribution of lumber and other supplies for the Canal, railroad, and the Army on the Isthmus is made upon the pier at the time of unloading, thus avoiding the operation of sending the supplies to a central warehouse to be segregated before shipment to destination. Cargo for Colon is collected on Pier No. 8, where the merchants claim it.

Cargo destined to German firms will not be handled by English ships, and consequently much cargo for the west coast of South America is held up until the Peruvian or Chilean lines can handle it, the Pacific Steam Navigation Company being barred from this trade.

Among the exports of South America developed by the war are wolfram and tungsten, used more extensively than ever before. Wolfram is valued at \$5,000 a ton, is transported in bags as money is, and is actually handled as specie. Hides, raw and dry, always an important article of export from South America, are being sent forward in still greater quantities, as the price is so high that it pays to kill cattle for the hide alone, leaving the carcass to rot. Chile has begun to export leather, and several shipments of well tanned heavy leather have recently been transferred at Cristobal en route to Havre.

Side pocket hatches make the west coast ships the hardest to stevedore of any in the Canal trade. The *Huasco* of the Chilean Line and *Chile* of the Pacific Steam Navigation Company were in opposite docks yesterday, and working cargo all night long. Down the west coast there are no enclosed harbors, and the ships handle cargo from and into lighters while rolling badly at times, always more or less. Lifting cargo over center hatches under such conditions involved so much swinging that the work was dangerous and cargo was frequently injured. A British skipper originated the side pocket hatch to meet this condition, with the result that the rolling of the ship is actually utilized to swing the cargo inboard or out, according as the process is that of loading or unloading. But these side hatches are too small for advantageous work at wharves.

Stevedoring reaches its high point when the *Ancon* or *Cristobal* of the Panama Railroad Line is in port. These are the largest vessels calling at Cristobal, and cargo handling is carried on in 10 hatches at one time, and 18



hours a day. Three hundred men are frequently engaged on one of these ships, and ten thousand tons of cargo are unloaded and ten thousand more taken aboard in five days. Part of the cargo for the *Cristobal* is waiting now on pier No. 8. It consists of 2,000 bags of Ecuador cacao, 1,000 bags of ivory nuts, and some miscellaneous cases. To look at it is to wonder how all of this could be stowed away in one ship; yet this represents only one-fifth of the cargo that the *Cristobal* will carry to New York.

Quickest and most economical handling is that from ship to lighter to ship. For instance, the *Huasco* brought copper, hides, ivory nuts, cacao, and leather into port last week and unloaded with its own tackle upon lighters. The *Alliance* lifted this cargo from the lighters by means of her own tackle directly into the hold. The operations incident to storing upon the wharves are thus saved.

United Fruit Company ships of the 5,000 and 8,000 tons classes are most frequent callers at the Canal. Six of them enter and leave every seven days—three in the New York and three in the New Orleans service. Their hatches are open when they come into dock, and the stevedore gang of from 30 to 60 men begins at once to work the cargo. Within half an hour passengers, baggage, mail, and express packages are landed, and the deck cargo is being swung overboard upon the pier. In the handling of this cargo only enough is removed to allow working the heavier freight in the hold. As this is taken out the ship rises, and the deck cargo can then be handled on skids through side hatches. The New Orleans ships bring lumber, cold storage stuff, and general merchandise. The *Parissima* brought 74 tons of cold storage matter this week. The New York ships carry machinery, general cargo, and cold storage. On its latest voyage the *Zacapa* delivered, among other packages, two automobiles destined for La Paz in Bolivia, via Arica. Very little cargo is taken from here by the fruit ships. They discharge, run light to Almirante, Limon, or Santa Marta, and there rake their cargo of bananas and general merchandise. Returning to Cristobal they take on mail and passengers, and within three hours after docking are on their way back to the home ports.

Perishable goods damaged in transit or in stevedoring cannot be forwarded to their destination. They are usually destroyed or thrown into the docks. The watermelon that burst open before the trucker's eyes was stored with other broken or damaged fruit until a cleaning gang came along, and threw it into the dock. A dozen darkies waiting for this event jumped into the water and raced for the melon. The trucker never saw it again, except in memory.

#### Levelman and Transman Examination.

A levelman and transman examination will be held in the board room of the Administration Building at Balboa Heights on Sunday morning, September 24, 1916, at 9 o'clock.

All applications are to be mailed to the Office Engineer, Balboa Heights, on or before September 14, 1916.

Those receiving a standing of 70 or better will be eligible for promotion to the positions of levelman and transman, respectively, as vacancies occur.

## EXECUTIVE ORDER.

Establishing Regulations Providing Conditions under which The Panama Canal and the Panama Railroad Company Employees on the Isthmus of Panama, May be Allowed the Use of Quarters, Fuel, and Electric Current.

By virtue of the authority vested in me, and The Panama Canal Act approved August 24, 1912, it is hereby ordered:

1. That the Executive Order of January 15, 1915, No. 2120, is hereby rescinded and abrogated.

2. That effective July 1, 1916, officers and employees of the Panama Canal and the Panama Railroad Company on the Isthmus of Panama, shall be allowed, where available, quarters free of rent, and shall be furnished fuel and electric current free.

3. That the Governor of The Panama Canal is hereby authorized to assign to officers and employees of The Panama Canal and of the Panama Railroad Company, such quarters as may be available for occupancy, and to make all rules and regulations necessary to govern the assignment and occupancy of such quarters, including rules and regulations relative to the furnishing of fuel and electric current to officers and employees of The Panama Canal and the Panama Railroad Company while occupying such quarters.

4. That officers and employees of The Panama Canal and the Panama Railroad Company, for whom quarters are not available or who do not occupy such quarters as may be assigned to them by the Governor of The Panama Canal, shall have no claim against the Government of the United States for commutation of quarters not furnished or not occupied, nor for fuel and electric current not furnished.

5. That all rules and regulations governing the assignment and occupancy of quarters heretofore promulgated by the Governor of The Panama Canal or the Isthmian Canal Commission, not inconsistent with the provisions of this Executive Order, are continued in full force and effect until such time as they may be changed by regulations promulgated by the Governor of The Panama Canal under authority of this Executive Order; and all rules and regulations heretofore promulgated by the Governor of The Panama Canal in connection with the use and occupancy of quarters and the furnishing of fuel and electric current to officers and employees of The Panama Canal and the Panama Railroad Company inconsistent with the provisions of this Executive Order, are hereby rescinded and abolished.

WOODROW WILSON.

THE WHITE HOUSE,

July 25, 1916.

[No. 2428.]

(The above is being published as Canal circular No. 601-53.)

#### Fares for Children on Motor Buses.

Children under five years of age are allowed free transportation upon the motor busses operated by the Panama Railroad, when such children are accompanied by their parents, servants, or other guardians. Full fare will be collected for children five years of age or over. Should there be any question regarding a child's age the chauffeur will obtain the name of the child or its parents and will report the matter to the office of the Superintendent.

## ELECTRICAL APPLIANCES.

Rules Governing their Installation and Use in Quarters Occupied by Employees.

The Electrical Engineer has issued the following letter about electrical appliances:

Effective July 1, 1916, the monthly charges for current used for electric appliances by sold employees in quarters, are discontinued and no further charges of this kind will be made, in conformity to Governor's circular No. 697-15.

It will therefore be necessary to charge for installing new outlets. It will also be necessary to keep a record of all electrical appliances in use, their transfer from one house to another, etc., in order to check the load on our feeders and distributing transformers, as in the past. The following method is outlined for your guidance:

1. Employees shall make written application to the Electrical Division covering each appliance they desire to use, on a form provided for this purpose.

2. They shall notify the Electrical Division in writing when they desire to transfer their appliances from one house to another, on the above-mentioned form.

3. They shall in no case connect appliances having a consumption of more than 250 watts to a lamp socket or lamp receptacle, but shall connect it to the heater receptacles, such as the Hubbell or Chapman wall receptacles rated at 10 amperes, 250 volts, which are used for this purpose. Larger receptacles must of course be installed for large appliances, such as ranges, etc.

4. Receptacles will not be removed or disconnected when a transformer is made or when the use of an appliance is discontinued.

5. More than one appliance may be used successively in the same receptacle, provided that none of them exceed the rated current carrying capacity of the receptacle.

6. If the house or apartment is not wired for a suitable receptacle, or if the occupant desires an additional receptacle, a charge of \$2.50 will be made. This charge is based on the average labor charges only of several hundred previous installations and does not include the cost of material, which remains the property of The Panama Canal and upon installation becomes part of the house wiring and is not to be removed.

7. If the house is already provided with a suitable receptacle or if a receptacle has been installed and later removed, leaving all wiring, mounting or conduit, etc., in place so that receptacle may be readily attached with a few minutes' work, no charge will be made. No charge will be made for putting Hubbell caps or Chapman plugs, etc., on cords to fit the receptacles installed.

8. Repairs to appliances will be limited to the renewal of worn out cords, and to simple adjustments which can be readily made on the premises. Any extensive repair work shall be sent to the shop and a work order issued to cover, the cost being charged to the owner.

9. Employees will be instructed to send their written applications direct to the Electrical Division field offices in the several towns and districts. All applications received by the Electrical Engineer will be sent to the field. Upon receipt of these applications the field forces will inspect the wiring of the apartment and if a receptacle is already installed, or can readily be connected as provided in paragraph 7, they will make necessary changes to the cord to fit the receptacle and report the installation as complete on an inventory card, at the same time making the necessary addition to the inventory card in the house, which is described in paragraph 11. In this case no work order will be issued, the time being charged to the maintenance of house wiring system.

10. If a new receptacle is to be installed, as provided in paragraph 6, the application will be filed in by the wireman making the inspection, stating this fact, and will be left with the applicant who will forward it, together with \$2.50 to the Collector, The Panama Canal, in accordance with the instructions on the form. The collector will receipt the application and forward it to the Electrical Engineer promptly, when a work order will be issued to cover the installation and a completion report made in the usual manner.

11. A card will be made to be tacked up in each apartment in the panel box or other convenient place. This card will contain Circular 606-0, and a space for entering the inventory of lights and receptacles in the house. These cards will be revised whenever any additional lights, receptacles, etc., are installed, and will serve as a check to the district wireman and a reminder to the occupants of the quarters to report additions, removals, etc.

12. Inspections of quarters from time to time for the purpose of insuring that these regulations are complied with, will be made as directed by the Electrical Engineer.

(Continued from page 442.)

Spanish bridge at the boundary line between this Republic and the Canal Zone.

Commissioner Corneil in his opinion states:

"The land is located near the city of Panama on the Corozal macadam road, a good thoroughfare; it is well adapted for building purposes, and to be laid out into small lots as an addition to the city of Panama, and all agree (referring to the witnesses for the claimant) that in December, 1912, this tract of land was worth from 20 to 30 cents a square meter. These witnesses were all men of extensive business experience and have been familiar with land values in and about the city of Panama for 20 years or more. Two of these witnesses have no interest in the claim of Mr. Carbone, and have no claims pending before the Commission, hence are totally disinterested." Commissioner Bouve in his opinion states:

"This land is doubtless well situated, with its road front far better than many other lands in the Zone in the vicinity of Panama." The land has been and is devoted to pasturage purposes.

Mr. Carbone in his claim filed in May, 1913, made a claim for \$6,180 United States currency, and in July of that year claimant moved to amend the claims to \$10,000 United States currency instead of \$6,180, stating that "this amendment was inserted in said claim by a mistake." On July 1, 1914, a second motion to amend was filed, this time for \$20,000 United States currency. No reason is assigned in the motion for this increase.

The values set out in the opinions of the Commissioners are as follows:

One member, \$7,850 United States currency.

One member, \$6,500 United States currency.

Two members, \$13,714.40 United States currency.

Taking into consideration the fact that the business of Mr. Carbone is the fresh meat business and that under the local conditions a piece of land so near the slaughter house is of greater importance to that business than for building purposes; that, according to the testimony, under the present conditions it is impossible to buy at any price a piece of land within a reasonable distance of the city, so well adapted to the purposes of the claimant's business, I consider the opinion of Commissioner Corneil, in which he places a value on this property of \$11,300, which he reduced by \$5,650 by reason of what he considers increased value brought about by the construction of the Panama Canal, as being sound and equitable though I do not agree in so large a reduction for the Canal influence; and taking into consideration the claim originally filed by the claimant and the expense to which he has been put by this expropriation, and the costs of the proceedings which are in favor of the claimant, my decision as the umpire duly appointed under the treaty is that the claimant Carlos Carbone, for the expropriation of his property by the United States of America, including all damages suffered and all expenses incurred by said expropriation to date, is entitled to an award in the sum of \$8,000 United States currency and an award is therefore made against the United States in favor of Carlos Carbone, in the sum of \$8,000 United States currency, for all right, title, and interest the said Carbone may possess or may have possessed in and to 5.656 hectares of land situated in the Canal Zone along the Corozal road near the city of Panama and for all damages sustained and all expenses incurred by the claimant to date in the expropriation of said property.

If payment or tender of payment of this award is not made on or before the 6th day of August, 1916, said award shall thereafter bear interest at the rate of six per centum per annum until paid.

VICTOR M. CONCAS, Umpire, Joint Commission.

#### Certification of Disagreement.

In the matter of the claims of Tiberio Galastica for property located in the Trinidad River Valley, certification of disagreement, rule No. 275, superseding rule No. 224, dockets Nos. 1121, 2577, and 2599, June 28, 1916.—Under the provisions of Article XV of the treaty between the United States of America and the Republic of Panama ratified February 26, 1904, it is provided:

"The President of the United States shall nominate two persons and the President of the Republic of Panama shall nominate two persons and they shall proceed to a decision; but in case of disagreement of the commission (by reason of their being equally divided in conclusion) an umpire shall be appointed by the two Governments who shall render the decision."

Pursuant to the provisions of this article the Commission desires to be notified by the umpire duly appointed under the treaty that the Commission has been unable to reach an agreement on the following:

The Question of Liability.

The Joint Commission herewith certifies this disagreement to the umpire.

agreement to the umpire appointed under the treaty as provided for in Article XV of said treaty.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, Commissioners.

#### Rule of Dismissal.

In the matter of the claim of Tiberio Galastica, for property located in the Trinidad River Valley, decision of the umpire, rule of dismissal No. 27, dockets Nos. 1121, 2577, and 2599, July 3, 1916.—Wherever reference is made in this decision to "the treaty" it is understood to mean the Canal Treaty between the United States of America and the Republic of Panama, ratified February 26, 1904.

Tiberio Galastica filed with the Joint Commission three claims, to wit: Docket No. 1121 on May 27, 1913, for \$510 United States currency; docket No. 2577 on November 9, 1914, for \$1,033 United States currency; and docket No. 2599 on the same date in the amount of \$700 United States currency, for damages said to have been sustained and property taken from him by the United States of America in the depopulation of the Canal Zone.

The Joint Commission after having accorded these claims public hearing was unable to arrive at a decision relative thereto on account of the Commission being equally divided in conclusion on the question of liability and therefore on June 26, 1916, certified the claims to the umpire for decision in accordance with Article XV of the treaty.

The opinions of the Commissioners, all very ably rendered, are as follows: Two members hold that there is no liability on the part of the United States, and that these three claims should therefore be dismissed, while the other two members hold that there is liability, and that the claimant has been damaged to the amount of \$350 United States currency, for which amount they hold an award should be made in claim docket No. 1121; no reference being made in their written opinion to claim dockets Nos. 2577 and 2599.

The fact that these three claims were tried and considered at one time has created some confusion, which in some cases might be considered intentional, as counsel for the claimant did not seem to be very well informed regarding the claims filed by his client nor as to the location of the property covered thereby. Also it appears that the amount of damages claimed by the claimant himself while on the witness stand does not agree with that claimed in the three dockets referred. I also consider as worthy of being mentioned at this time the remarks of Judge L. M. Kagy, then Commissioner on the part of the United States, (page 44 of the record) as follows: "I don't understand what this part that is not submerged is, I have been listening to the witness, but I can't tell, I can't understand where that part that is not submerged is; I don't know where that is located." These remarks were made at the conclusion of the trial, in open court, and for the benefit of those concerned.

The facts in these claims as stated by the claimant are as follows:

And prior to 1910 the claimant was the owner of certain improvements at a place called "La Cienega" near Gatun. The improvements were destroyed by the rising of the waters of the lake, and for the damage caused, the claimant settled direct with the Government of the United States for \$400 United States currency, payment being made in November, 1910. He states that one year after the payment he started to make a new plantation in the same locality of "La Cienega." (Original Commissioner Bouve). He started, one after the other, three new plantations and recently another which he now occupies. This latter *finc* being in the lands of the Republic of Panama is not included in the claims made by Galastica and is referred to only for the reason that it was mentioned by the claimant at the time of the trial.

The above statement of facts was accepted by the Commission, and is also accepted by the umpire; and taking into consideration the fact that when Galastica was paid for the first expropriation he was duly informed of the necessity of his leaving the lake area and warned not to make further cultivations in that area; and, that even though his statement that he received no such information and that he was not warned were accepted, the claimant could not ignore the fact that he was being informed of the necessity of his leaving the lake area and paid therefor, and that this in itself must be considered as sufficient warning seems proven by the fact that the claimant procured a permit from the Government of Panama to cultivate land which while in the vicinity of his other *finc* was outside of the Canal Zone, my decision as the Umpire duly appointed under the treaty, following out the reasoning contained in the opinion of Commissioners Corneil and Bouve, in which I fully concur, is that Tiberio Galastica has no right whatever to compensation, and that his claims, dockets Nos. 1121, 2577, and 2599 should be, and the same are hereby, dismissed.

VICTOR M. CONCAS, Umpire, Joint Commission.

#### Certification of Disagreement.

In the matter of Disagreement 11 of the Joint Commission, certified under date of September 23, 1913 (purchase from Isthmian Canal Commission, leaseholders), decision of the umpire, rule No. 26, June 15, 1916.—The Joint Commission having disagreed in the matter herein referred to, and the same having been certified to me for decision; after considering the proceedings had, together with the interim report of September 23, 1913, of said Commission; having heard the opinions of the members of the present Commission; the oral arguments of the attorneys for the United States and for the claimants, and taking into consideration the written arguments of all attorneys which have been filed in connection with this disagreement of the Commission which is as follows:

Do the provisions of Article VI of the treaty between the United States of America and the Republic of Panama ratified February 26, 1904, grant a right to compensation for improvements to those tenants of public lands who held such lands under revocable leases or licenses issued by the Isthmian Canal Commission but who purchased the improvements on such lands from persons who occupied such lands before accepting Isthmian Canal Commission leases or licenses, but who, prior to the sale of their improvements to the present claimants, accepted such leases or licenses?

For decision of this question the Joint Commission is that the claimants under the above disagreement are entitled to compensation.

VICTOR M. CONCAS, Umpire, Joint Commission.

In the matter of Disagreement 1 of the Joint Commission, certified under date of September 23, 1913 (leases of town lots in Gorgona), decision of the umpire, rule No. 272, June 16, 1916.—The Joint Commission having disagreed in the matter herein referred to, and the same having been certified to me for decision; after considering the proceedings had, together with the interim report of September 23, 1913, of said Commission; having heard the opinions of the members of the present Commission; the oral arguments of the attorneys for the United States and for the claimants, and taking into consideration the written arguments of said attorneys which have been filed in connection with this disagreement of the Commission which is as follows:

Do the provisions of Article VI of the treaty between the United States of America and the Republic of Panama ratified February 26, 1904, grant a right to compensation to the following class of claimants:

Lessees of town lots in Gorgona who held such lots under revocable leases or licenses issued by the Isthmian Canal Commission and who purchased the buildings located at such lots from persons who, although occupying, such lots prior to the abolition of the municipality of Gorgona by the Executive Order of March 13, 1907, accepted, subsequent to such abolition, a revocable lease or license from the United States of America?

My decision as umpire of the Joint Commission is that the claimants under the above disagreement have right to compensation.

VICTOR M. CONCAS, Umpire, Joint Commission.

#### Notices of Award.

In the matter of the claim of Ara Miller, for property located in Ancon, Canal Zone, rule No. 294, in award No. 69, dockets Nos. 93 and 90-A, June 15, 1916.—On December 7, 1914, the claim of Ara Miller, dockets Nos. 93 and 90-A, came on for hearing before the Commission, and on December 17, 1914, the Commission handed down its decision in the case (award No. 69), awarding to the claimant herein the sum of \$8,557.97 United States currency, with the proviso that unless payment or tender of payment of said award were made to the claimant on or before January 17, 1915, said award would thereafter bear interest at the rate of 6 per cent per annum until paid.

Subsequently, on August 27, 1915, counsel for the United States filed with the Commission a motion setting up that the award was greatly in excess of the value of the property taken, that it was based upon erroneous conclusions of law and fact, and manifestly unjust to the United States, for the reasons set out in said motion, and requesting that the award of the Commission in the case be set aside, and that a new hearing thereon be allowed, in order that justice may be done between the parties.

Counsel for the claimant, on September 1, 1915, filed with the Commission a motion to dismiss the above referred motion of counsel for the United States, setting out therein that said award is now, and for more than seven months has been, res judicata, and denying the "right, discretion, nor authority" of the Commission, under the treaty, "to in any manner disturb said award."

Shortly after the filing of the motion of counsel for the United States in this claim, Commissioner Samuel



Lewis severed his connection with the Commission, his successor, Commissioner R. J. Alfaro, being appointed a few days later, followed soon after by the resignation of Commissioner L. M. Kagy and, pending the appointment and arrival of the latter's successor, Commissioner C. L. Bouve, no action could be taken in the matter. These motions were finally set down for argument on April 19, 1916, which was had.

After due consideration, the Commission finds itself unable to agree in the matter of granting the motion of counsel for the United States for a rehearing, the American members being in favor of granting said motion, to which the Panamanian members do not agree, on the ground that good and sufficient reason therefor has not been shown.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of the claim of Po Yuen & Co., by Cheng Chi Fat, manager, for property located near Muzhin, award No. 108, docket No. 1494, June 16, 1916*—In the matter of the claim of Po Yuen & Co., docket No. 1494, which came on for hearing on June 11, 1916, the only question submitted to the Commission was that of the liability on the part of the United States for the property covered by said claims, it being announced by counsel for the United States and counsel for the claimant that they had agreed upon a valuation of \$600 for houses tax Nos. 403 and 410 and upon a dismissal as to house tax No. 419.

The Commission, after hearing the evidence of both sides, is of the opinion that an award should be made to the claimant herein as requested by counsel for both parties.

An award is hereby made against the United States in favor of the claimant hereinafter named, in the sum of \$600 United States currency.

This award shall be paid to the claimant hereinafter named in the amount specified, on or before the 16th day of July, 1916, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

*Po Yuen & Co., Cheng Chi Fat, manager, docket No. 1494*—For all right, title, and interest which the said Po Yuen & Co. may possess or may have possessed in and to houses tax Nos. 403 and 410, located near Muzhin, the sum of \$600 United States currency.

As to house tax No. 419, the claim is hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of the claim of José Maria Herazo for property located at Nombre de Dios, award No. 109, docket No. 1318, June 16, 1916*—Award is hereby made against the United States, in favor of the person hereinafter named, in the sum of \$125 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 16th day of July, 1916, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

*José Maria Herazo, docket No. 1318*—For all damages to property of the claimant, José Maria Herazo, previously located at Nombre de Dios, Republic of Panama, caused by the operations of the dredges in the removal of sand from that point, the sum of \$125 United States currency.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of the claim of Jacinto Sanchez (Shing Kee) for property situated near Gorgona, award No. 113, docket No. 1414, July 27, 1916*—Award is hereby made against the United States, in favor of the person hereinafter named, in the sum of \$500 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the 27th day of July, 1916, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

*Jacinto Sanchez (Shing Kee), docket No. 1421*—For all right, title, and interest which the said Jacinto Sanchez (Shing Kee) may possess or may have possessed in and to house tax No. 945, on Bailamones lands near Gorgona, the sum of \$550 United States currency.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of the claim of Julio Pastor, for property located near Muzhin, award No. 115, docket No. 1424, July 1, 1916*—An award is hereby made against the United States in favor of the person hereinafter named, in the sum of \$225 United States currency.

This award shall be paid to the person hereinafter named, in the amount specified, on or before the first day of August, 1916, and if payment or tender of payment of this award is not made on or before that date, such award shall thereafter bear interest at the rate of six per centum per annum until paid.

*Julio Pastor, docket No. 1424*—For all right, title, and interest the said Julio Pastor may possess or may have possessed in and to any property at or near Muzhin, Canal Zone, situated above the 87-foot contour line, the sum of \$225 United States currency.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

#### Rules of Dismissal.

*In the matter of the claim of Gil Montilla et al., for property located at La Boca, rule of dismissal No. 277, docket No. 1447, July 1, 1916*—The claim of Gil Montilla et al., docket No. 1447, which came on for hearing before the Commission on June 27, 1916, is hereby disallowed for the reason that the evidence submitted does not justify an award being made.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of sundry claims, rule of dismissal No. 276, docket numbers as shown, June 29, 1916*—With reference to the following claims the evidence before the Commission is that settlement thereof has been made by the United States:

Docket No.	Claimant.	Date of payment.
502	Marcial Zuleta	1-8-16
1541	W. H. Carrington	5-8-15
1542	Rosa Forbes	6-17-16

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of sundry claims, rule of dismissal No. 267, docket numbers as noted, June 14, 1916*—Counsel for the United States and counsel for the claimants on May 19, 1916, filed with the Commission a motion to dismiss the following claims, agreeing that settlements therein had been made direct with the agents of the United States:

Docket No.	Claimant.	Date of payment.
401	Robert Dennis.	
441	Juan R. Rodriguez.	
787	Juan Mindieta.	
818	Nagina Single.	
1123	Julio Gonzalez.	
1125	Manuel Henri (Henry).	
1124	Manuel de la Puerta.	
1356	Agapito Verona.	
2849	Donaschi Ramoa.	
2824	Jack Irwin.	
3584	Robert Minto.	
3585	Robert Allen.	

The aforesaid motion on the part of counsel for the claimants and counsel for the United States is allowed and the foregoing claims are therefore accordingly dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of sundry claims, rule of dismissal No. 268, docket numbers as noted, June 14, 1916*—Counsel for the United States and counsel for the claimants on May 18, 1916, filed with the Commission a motion to dismiss the following claims; setting up that settlement has been made direct with the agents of the United States:

Docket No.	Claimant.	Date of payment.
1834	A. Escobar.	
1910	Sun Shing & Co.	
1912	Joaquin Yun San (Sang).	
1913	Manuel Leones.	
1914	A. M. Lopez.	
1945	R. J. Coyne.	
1948	Joaquin Yun Sang.	
1968	Vicente Avila.	
1973	J. R. Gillard.	
2635	Manuel Leones.	
2731	Andres Tablate.	
2801	William Kin or Chun Hing Sue.	
2868	Abel L. Etang.	
2869	H. A. Jacobs.	
2893	H. A. Jacobs.	
2979	Gustavo Mezel.	
3545	Chue Sheung.	
3548	Matilda Sosa.	

The aforesaid motion on the part of counsel for the claimants and counsel for the United States is allowed and the foregoing claims are therefore accordingly dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of sundry claims rule of dismissal No. 270, docket numbers as noted, June 15, 1916*—With reference to the following claims, the evidence before the Commission is that settlement thereof has been made by the United States:

Docket No.	Claimant.	Date of payment.
321	Cristo Teolore.	6-5-16
787	Juan Mindieta.	5-31-16
2489	José Carlos Escobar.	11-30-16
2490	Folcario Es Obarr.	11-30-16
2493	P. El arpo Escobar.	11-30-16
2657	Arthur Johnson.	5-27-16
2736	Stephen Brossard.	5-27-16
2138	George Edwards.	7-3-15
2830	Amelia James.	5-31-16
2838	Emelia (Amelia) James.	5-31-16
2839	Florence Palmer.	5-24-16
2542	W. H. Carrington.	12-8-15
2929	Santiago Canque (Santiago).	5-20-16
2942	George French.	5-20-16
2965	Alexander Solomon.	5-20-16
3007	Tomas Martinez.	5-20-16
3007	Maturine (Maturine) Frances.	5-27-16
3294	Florence Jones.	2-24-16
3307	Harry Davis.	6-3-16
3571	Henry Hamilton.	5-17-16

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of sundry claims, rule of dismissal No. 254, docket numbers as shown, May 31, 1916*—With reference to the following claims, counsel for the United States has filed motions alleging settlements made direct with the claimants, and has also filed copies of bills of costs and certificates of the master of The Panama Canal showing payments therein:

Docket No.	Claimant.	Date of payment.
2634	Juanes McFarlane.	2-15
2886	Dolores Campos (de Ruiz).	6-28-15
2933	Vicente Adan.	1-15
2963	Leonarda Arquechie.	12-29-15
2943	Fred Lindo.	3-15-16
2947	Lal Look, by his attorney-in-fact, Chan Min Kee.	3-23-16
2964	J. Julius Sasso.	11-10-15
2974	Theresa Ernest.	4-6-15
2978	Miguel Russo.	7-15
3001	Francisco del Vecchio, by his agent, Miguel Russo.	7-15
3015	Alfred Buckley (Bouquet).	3-15
3016	John Marshall.	5-8-15
3018	W. H. Carrington.	7-15
3023	W. G. Chisholm.	4-10-15
3049	Ephraim Campbell.	6-14-15
3059	Wm. and Cassie E. Collins.	6-14-15
3109	Henry Davis.	8-14-15
3112	W. W. Wilson.	11-10-15
3136	Martin Higgins.	12-18-15
3147	George Alfred Ralu.	1-5-16
3259	John T. McGann and Christian M. Kesner.	4-27-16
3275	E. Winchester Bucklin.	11-17-15
3328	Juan Aguires Ponce.	5-15
3335	Chas. E. Weidman and Robert T. B. Pierce, Jr.	3-29-16
3338	Loyal Victor Lodge, by C. A. Harris.	5-15
3416	Leonard Hutchinson.	11-15
3428	Ramon Rodriguez.	8-14-15
3527	Nicasio Vides.	1-16
3530	Jose Maria Amor.	4-15
3544	S. E. Allen, deceased. (Henry Edwards, administrator).	4-15
3547	Excelsior Lodge (represented by Henry Edwards).	3-9-15
3569	Manuel Medrano.	4-15

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are hereby dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, RICARDO J. ALFARO, *Commissioners*.

*In the matter of sundry claims, rule of dismissal No. 256, docket numbers as noted, June 7, 1916*—With reference to the following claims, the evidence before the Commission is that settlement thereof has been made by the United States:

Docket No.	Claimant.	Date of payment.
1735	Robert Ardley.	12-15
1910	Sun Shing & Co., by Joaquin Yun Sang.	3-17-15
1913	Manuel Leones.	4-15
1948	Joaquin Yun Sang (Sun Shing & Co.).	3-17-15
1968	Vicente Avila.	2-18-15
2759	Alexander Morgan.	5-16
2786	Arnold Corbin.	5-6-16

In view of the above settlements no further action is necessary by the Commission, and the foregoing claims are therefore dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUVE, R. J. ALFARO, *Commissioners*.

*In the matter of sundry claims, rule of dismissal No. 261, docket numbers as noted, June 13, 1916*—In the following claims, which came on for hearing before the Commission on June 12, 1916, counsel for the claim-



ants stated that settlements therein had been made direct with the agents of the United States:

Docket  
No. Claimant.  
1327 Joseph Payne  
1332 James Brillian  
1335 Benisado Villareal  
1336 Pedro Garido

In view of the admission of settlement on the part of counsel for the claimants, no further action is necessary by this Commission, and the foregoing claims are therefore accordingly dismissed.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, *Commissioners*.

In the matter of the claim of Andres Basanta, rule of dismissal No. 261, docket No. 1361, June 13, 1916.—The claim of Andres Basanta, docket No. 1361, which came on for hearing this date, is hereby dismissed for the reason that counsel for the claimant and counsel for the United States have agreed that settlement in full for all property covered by this claim has been made direct with the agents of the United States.

FEDERICO BOYD, NICHOLAS CORNET, CLEMENT L. BOUYE, RICARDO J. ALFARO, *Commissioners*.

#### Rainfall from July 1 to 31, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>	<i>Date.</i>	<i>Ins.</i>
Balboa.....	2.25	10	9.79
Balboa Heights.....	2.73	10	10.13
Miraflores.....	1.35	10	8.88
Pedro Miguel.....	1.68	28	9.17
Rio Grande.....	1.44	28	8.10
<i>Central Section—</i>			
*Culebra.....	1.32	28	8.84
*Camacho.....	1.72	16	9.91
Empire.....	1.10	28	7.86
Gambao.....	1.69	6	9.59
*Juan Mina.....	1.77	5	10.27
Alhajuela.....	1.26	5	12.05
*Vigia.....	2.10	5	12.05
Frijoles.....	1.04	31	7.23
*Trinidad.....	3.20	24	13.26
*Monte Lirio.....	1.92	8	9.64
<i>Atlantic Section—</i>			
Gatun.....	1.61	5	9.68
*Brazos Brook.....	2.10	8	11.44
Colou.....	2.39	3	10.44
Bocas del Toro.....	3.7	5 & 29	2.30

#### Rainfall from August 1 to 12, 1916, Inclusive.

STATIONS.	Maximum in one day.	Date.	Total for period.
<i>Pacific Section—</i>	<i>Ins.</i>	<i>Date.</i>	<i>Ins.</i>
Balboa.....	1.69	4	4.25
Balboa Heights.....	1.18	10	4.46
Miraflores.....	1.05	4	3.50
Pedro Miguel.....	1.06	2	3.16
Rio Grande.....	1.11	6	3.77
<i>Central Section—</i>			
*Culebra.....	1.08	7	2.75
*Camacho.....	1.75	7	3.64
Empire.....	1.18	6	2.93
Gambao.....	1.26	6	3.55
*Juan Mina.....	1.60	5	3.71
Alhajuela.....	1.31	5	2.45
*Vigia.....	1.94	5	3.90
Frijoles.....	1.63	6	1.75
*Monte Lirio.....	.85	3	2.46
<i>Atlantic Section—</i>			
Gatun.....	.97	2	2.28
*Brazos Brook.....	.72	11	2.47
Colou.....	.97	12	2.70
Bocas del Toro.....	1.36	6	1.72

\*Standard rain gage—readings at 5 p. m. daily.  
Automatic rain gage at unstarred stations—values, midnight to midnight.

#### Misdirected Letters.

BALBOA HEIGHTS, C. Z., August 15, 1915.

The following insufficiently addressed letters and papers have been received in the office of the Director of Posts and may be obtained upon request of the addressees. Requests may be made by telephone, calling Balboa, No. 182:

Boykin, J. C. Jones, Mrs. Louisa  
Campbell, Mrs. E. H. Lee, Mrs. H., Box 310  
Dolan, Sgt. John Muller, E.  
Emery, Wm. H. Quinn, William J.  
Isley, Mrs. Chas. Scott, Mahlon D.

Swan, J.

#### Coal and Diesel Oil.

Coal is supplied to vessels at both Cristobal and Balboa at the rate of between 600 and 1,500 tons per day. Present prices are: At Cristobal, from lighters, trimmed in bunkers, or from cars alongside wharf, handled by ship's gear, per ton, \$6.00; use of steam hoist and crane per hour, \$2; at Balboa, the price is \$1 more per ton, either form of delivery.

Diesel engine oil is for sale by several companies at approximately \$2.50 per barrel.

## SHIPPING INFORMATION.

### Tide Predictions, Port of Balboa.

Panama (Balboa) tide predictions for the period until October 1 are given in this table:

AUGUST.					
DATE.	Time and height of high and low water.				
Wed., Aug. 10.....	5:30 17.4	11:47 -1.3	18:01 16.6	.....	.....
Thurs., Aug. 17.....	0:07 -1.3	6:23 17.1	12:50 18.44 16.0	.....	.....
Fri., Aug. 18.....	0:49 -0.4	7:05 16.5	13:15 0.1 15.0	19:27 15.0	.....
Sat., Aug. 19.....	1:55 0.9	7:46 15.2	14:01 1.3 13.8	20:10 13.8	.....
Sun., Aug. 20.....	2:22 2.2	8:29 14.0	14:52 2.6 12.6	20:55 12.6	.....
Mon., Aug. 21.....	3:15 3.5	9:19 12.8	15:48 3.7 11.5	21:57 11.5	.....
Tues., Aug. 22.....	4:15 4.6	10:21 11.8	16:54 4.4 10.8	23:10 10.8	.....
Wed., Aug. 23.....	5:24 5.1	11:41 11.3	18:06 4.6 .....	.....	.....
Thurs., Aug. 24.....	0:38 10.8	6:57 5.2	12:57 11.5 4.3	19:15 4.3	.....
Fri., Aug. 25.....	1:43 11.4	7:41 4.6	13:54 12.0 3.5	20:10 3.5	.....
Sat., Aug. 26.....	2:31 12.1	8:33 3.8	14:39 12.7 2.6	20:56 2.6	.....
Sun., Aug. 27.....	3:10 12.9	9:16 2.8	15:18 13.4 1.8	21:35 1.8	.....
Mon., Aug. 28.....	3:46 13.7	9:54 1.9	15:54 14.0 1.2	22:09 1.2	.....
Tues., Aug. 29.....	4:18 14.3	10:28 1.2	16:30 14.5 0.7	22:42 0.7	.....
Wed., Aug. 30.....	4:50 14.8	11:01 0.8	17:03 14.7 0.5	23:14 0.5	.....
Thurs., Aug. 31.....	5:21 15.2	11:34 0.5	17:37 14.9 0.6	23:46 0.6	.....

### SEPTEMBER.

DATE.	Time and height of high and low water.				
Fri., Sept. 1.....	5:52 15.3	12:08 0.6	18:11 14.8	.....	.....
Sat., Sept. 2.....	0:19 0.9	6:24 15.3	12:44 0.9 14.5	18:45 14.5	.....
Sun., Sept. 3.....	0:55 1.4	6:59 15.0	13:24 1.4 14.0	19:23 14.0	.....
Mon., Sept. 4.....	1:36 2.0	7:38 14.5	14:11 2.1 13.3	20:07 13.3	.....
Tues., Sept. 5.....	2:26 2.8	8:25 13.8	15:09 2.8 12.6	20:52 12.6	.....
Wed., Sept. 6.....	3:28 3.6	9:28 13.1	16:18 3.2 12.2	21:46 12.2	.....
Thurs., Sept. 7.....	4:45 3.9	10:52 12.7	17:34 3.2 12.5	22:46 12.5	.....
Fri., Sept. 8.....	6:05 3.6	12:18 13.1	18:49 2.5 .....	.....	.....
Sat., Sept. 9.....	1:03 13.4	7:19 2.7	13:28 13.9 1.4	19:54 1.4	.....
Sun., Sept. 10.....	2:03 14.6	8:21 1.4	14:27 14.9 0.3	20:49 0.3	.....
Mon., Sept. 11.....	2:57 15.7	9:14 0.1	15:20 15.7 -0.6	21:37 -0.6	.....
Tues., Sept. 12.....	3:45 16.6	10:01 -0.8	16:09 16.3 -1.2	22:21 -1.2	.....
Wed., Sept. 13.....	4:30 17.0	10:43 -1.4	16:55 16.5 -1.2	23:01 -1.2	.....
Thurs., Sept. 14.....	5:14 17.0	11:24 -1.3	17:39 16.3 -0.7	23:43 -0.7	.....
Fri., Sept. 15.....	5:56 16.6	12:04 -0.8	18:20 15.7 .....	.....	.....
Sat., Sept. 16.....	0:24 0.1	6:36 15.9	12:45 0.2 14.8	18:59 14.8	.....
Sun., Sept. 17.....	1:05 1.2	7:16 14.9	13:27 1.3 13.9	19:39 13.9	.....
Mon., Sept. 18.....	1:50 2.5	7:56 13.7	14:15 2.6 12.6	20:21 12.6	.....

DATE.	Time and height of high and low water.				
Tues., Sept. 19.....	2:40 3.7	8:39 12.5	15:09 3.7 11.6	21:11 11.6	.....
Wed., Sept. 20.....	3:39 4.8	9:35 11.6	16:12 4.5 10.9	22:21 10.9	.....
Thurs., Sept. 21.....	4:49 5.3	10:54 11.0	17:23 4.8 10.8	23:50 10.8	.....
Fri., Sept. 22.....	6:00 5.3	12:15 11.1	18:32 4.6 .....	.....	.....
Sat., Sept. 23.....	1:02 11.3	7:05 4.7	13:19 11.6 3.9	19:31 3.9	.....
Sun., Sept. 24.....	1:52 12.1	8:00 8.3	14:06 12.4 3.1	20:19 3.1	.....
Mon., Sept. 25.....	2:31 13.0	8:45 2.8	14:46 13.2 2.2	21:01 2.2	.....
Tues., Sept. 26.....	3:05 13.8	9:24 1.7	15:23 13.9 1.5	21:58 1.5	.....
Wed., Sept. 27.....	3:39 14.5	9:59 0.9	16:00 14.5 0.9	22:13 0.9	.....
Thurs., Sept. 28.....	4:13 15.1	10:35 0.3	16:36 14.9 0.6	22:47 0.6	.....
Fri., Sept. 29.....	4:48 15.5	11:09 -0.1	17:12 15.1 0.3	23:21 0.3	.....
Sat., Sept. 30.....	5:24 15.7	11:45 -0.1	17:49 15.1 0.7	23:58 0.7	.....

The tides are placed in the order of occurrence, with their times on the first line and heights on the second line of each day; a comparison of consecutive heights will indicate whether it is high or low water. The heights in feet and tenths are reckoned from mean low water springs, which is the datum of the soundings on the Coast and Geodetic Survey charts for this region, and which is 8.2 feet below mean sealevel. To find the depth of water, add the tabular height to the soundings given on the chart, unless a minus (-) sign is before the height, in which case subtract it.

The time used is Cosmopolitan Standard, for the meridian 75° W. The hours of the day are numbered consecutively from 0h (midnight) to 23h (11.00 p. m.). All hours greater than 12 are in the afternoon (p. m.) and when diminished by 12 give the usual reckoning; for instance, 15:47 is 3:47 p. m.

### Mail Despatches.

Following is the schedule of the despatches of mail made to the United States each week by the Canal Zone postal service:

Every Sunday to New Orleans, for all States. Due at New Orleans on the following Friday.

Every Monday to New York, for all States. Due at New York the following Monday.\*

Every Thursday to New York, for all States. These despatches are by vessels of the Panama Railroad Steamship Line. The mail is delivered at New York six days after the day of sailing, except that on the *Advance* the voyage requires seven days.†

Train No. 6, leaving Panama at 11 a. m., connects with the above despatches.\*

\*NOTE—The sailings on Monday, August 21, will not land mail in New York until Tuesday of the following week. Train No. 4, leaving Panama at 7.10 a. m., connects with the despatches for the sailing on August 21.

†When the vessel sailing Thursday is the *Advance*, mail for Louisiana, Mississippi, Arkansas, and Texas is held for the direct despatch to New Orleans on the following Sunday.

### Sailings of Vessels in Regular Service with the United States.

#### NEW YORK TO CRISTOBAL-COLON.

Vessel.	Line.	Sails.	Arrives.
<i>Almirante</i> .....	U. F. C. Aug.	9.....	Aug. 16
<i>Advance</i> .....	P. R. R. Aug.	10.....	Aug. 17
<i>Pastores</i> .....	U. F. C. Aug.	12.....	Aug. 20
<i>Zacapa</i> .....	U. F. C. Aug.	16.....	Aug. 23
<i>Albano</i> .....	P. R. R. Aug.	17.....	Aug. 23
<i>Calamares</i> .....	U. F. C. Aug.	19.....	Aug. 27
<i>Corrillo</i> .....	U. F. C. Aug.	23.....	Aug. 30
<i>Cristobal</i> .....	P. R. R. Aug.	24.....	Aug. 31
<i>Tenadores</i> .....	U. F. C. Aug.	26.....	Sept. 3
<i>Santa Maria</i> .....	U. F. C. Aug.	30.....	Sept. 6
<i>Colon</i> .....	P. R. R. Aug.	31.....	Sept. 6

#### CRISTOBAL-COLON TO NEW YORK.

Vessel.	Line.	Sails.	Arrives.
<i>Colon</i> .....	P. R. R. Aug.	17.....	Aug. 23
<i>Santa Maria</i> .....	U. F. C. Aug.	17.....	Aug. 24
<i>Metapan</i> .....	U. F. C. Aug.	21.....	Aug. 29
<i>Advance</i> .....	P. R. R. Aug.	24.....	Aug. 31
<i>Almirante</i> .....	U. F. C. Aug.	24.....	Aug. 31

(Continued on page 448.)

## MOVEMENTS OF OCEAN VESSELS.

(Week ending at 6 p. m., August 13, 1916.)

## THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Date Entered	Vessel	Nationality	Line	From	For	CARGO		CANAL TONNAGE	
						Nature	Tons	Gross	Net
Aug. 7.	Salvador.	British	Pacific Steam Nav. Co.	C. Istobal.	Guayaquil.	General.		1,170	692
Aug. 7.	Imperial.	Chilean	South American Steamship Co.	Cristobal.	Valparaiso.	General.	1,466	3,621	2,397
Aug. 7.	Urubimba.	Peruvian	Peruvian Steamship Line.	Cristobal.	Callao.	General.	2,500	1,937	3,118
Aug. 7.	Atlantic City.	British	Bradford Steamship Co.	Norfolk.	San Francisco.	Coal.	7,182	5,270	3,801
Aug. 7.	California.	American	Sudden & Christenson.	New Orleans.	Taltal.	Ballast.		8,073	6,065
Aug. 8.	Bertrand.	British	Turnbull Bros. S. S. Co.	Port Talbot.	Mejillones.	Fuel.	5,500	4,388	5,385
Aug. 9.	Hakata Maru.	Japanese	Nippon Yusen Kaisha K. K.	New York.	San Francisco.	General.	7,530	6,231	4,150
Aug. 10.	Guernsey.	Norwegian	Dampsk Acties Guernsey.	Norfolk.	Mejillones.	Ballast.		4,418	3,280
Aug. 10.	Magdala.	British	S. S. Magdala Co. Ltd.	St. Thomas.	Antofagasta.	Ballast.		5,443	4,109
Aug. 10.	Caribbean.	American	Panama Railroad S. S. Line.	Cartagena.	Miraflores.	Cattle.	190	2,345	135
Aug. 11.	Blackheath.	British	Britain Steamship Co. Ltd.	Newport News.	San Francisco.	Coal.	7,210	5,364	3,777
Aug. 11.	Saint Veronica.	British	British & Foreign S. S. Co.	Norfolk.	Mollendo.	Coke, coal.	6,700	5,392	3,724
Aug. 11.	Crown of Toledo.	British	Crown Steamship Co. Ltd.	Liverpool.	Los Angeles.	Coke, general.	3,667	7,730	5,444
Aug. 12.	Ithmian.	American	American-Hawaiian Line.	Norfolk.	Antofagasta.	Coal.		5,677	3,975
Aug. 13.	Acadmir.	British	Pacific Steam Nav. Co.	Cristobal.	Buenaventura.	General.		1,219	627
Aug. 13.	Hollie Luckenbach.	American	Luckenbach Line.	New York.	New Zealand.	General.	4,700	3,708	3,681
Aug. 13.	Queen Maude.	British	Dunlop S. S. Co. Ltd.	Baltimore.	Valparaiso.	Coal, etc.	5,618	4,784	3,461

## THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Aug. 7.	Acapulco.	British	Pacific Steam Nav. Co.	Guayaquil.	Colon.	General.	782	1,219	627
Aug. 8.	Jason.	American	United States Navy.	San Diego.	Norfolk.	General.	75	11,365	6,346
Aug. 8.	Ovilpue.	British	Pacific Steam Nav. Co.	Valparaiso.	Colon.	General.	3,066	3,922	2,231
Aug. 8.	Sella.	Dutch	Royal Dutch W. I. Mail Co.	Antofagasta.	New York.	Copper ore.	744	2,884	1,917
Aug. 9.	Asper.	Chilean	South American S. S. Co.	Valparaiso.	Colon.	General.	1,107	4,593	3,042
Aug. 9.	Manitara.	Peruvian	Peruvian Steamship Line.	Callao.	Colon.	General.	1,658	4,639	2,673
Aug. 10.	Ilford.	British	Britain S. S. Co.	Cruz Grande.	Philadelphia.	Iron ore, skins.	6,570	4,627	3,335
Aug. 11.	Barotie.	British	Ellerman & Bucknall.	Tacoma.	United Kingdom.	Wheat.	5,460	4,531	2,899
Aug. 11.	Alhena.	Chilean	E. C. Forbes.	Seattle.	Boston.	Ballast.		96	57
Aug. 11.	Caribbean.	American	Panama Railroad S. S. Line.	Miraflores.	Colon.	Ballast.		2,245	135
Aug. 11.	Guatemala.	British	Pacific Steam Nav. Co.	Valparaiso.	Colon.	General.	2,125	4,249	2,772
Aug. 11.	Autrotier.	British	Frys & Gylden.	Antofagasta.	Marseilles.	Nitrates.	5,620	3,972	2,867
Aug. 12.	Jamaica.	British	Pacific Steam Nav. Co.	Pumaco.	Colon.	General.	649	1,170	620
Aug. 13.	Lewisham.	British	Britain S. S. Co.	Cruz Grande.	Philadelphia.	Iron ore.	4,200	3,021	2,103
Aug. 13.	Teucer.	British	Ocean S. S. Co.	San Francisco.	Liverpool.	General.	12,000	9,208	6,480

## EXPECTED ARRIVALS FROM PACIFIC.

Aug. 14.	Saint Andrew.	British & Foreign S. S. Co.	Antofagasta.	Aug. 16.	Orari.	New Zealand Shipping Co.	Wellington.
Aug. 14.	Idomeneus.	Ocean Steamship Co.	Ilo Ilo.	Aug. 20.	Nippon.	Yokohama.	
Aug. 14.	Ruahine.	New Zealand Shipping Co.	Wellington.	Aug. 21.	Saint Bede.	British & Foreign S. S. Co.	Ilo Ilo.
Aug. 14.	Ohion.	American Hawaiian Line.	Unknown.	Aug. 22.	Limari.	South American S. S. Co.	Valparaiso.
Aug. 15.	Palena.	South American S. S. Co.	Valparaiso.	Aug. 25.	Sarato.	Pacific Steam Nav. Co.	Chilean ports.

## PORT OF CRISTOBAL.

## \*ARRIVALS.

## \*DEPARTURES.

Date	Vessel	Line	From	Date	Vessel	Line	For
Aug. 9.	Montevideo.	Spanish Line.	Barcelona.	Aug. 8.	Orubian.	Leyland Line.	Galveston.
Aug. 10.	Enropa.	Swedish Line.	Stockholm.	Aug. 12.	Stavangeren.	Ac les Stavangeren.	New York.
Aug. 11.	Stavangeren.	Acties Stavangeren.	Philadelphia.	Aug. 12.	Covina.	Elders & Fyffes.	Bristol.
Aug. 12.	Covina.	Elders & Fyffes.	Port Limon.	Aug. 13.	Montevideo.	Spanish Line.	Bar-elona.

## \*EXPECTED ARRIVALS.

## \*EXPECTED DEPARTURES.

Aug. 15.	San Ramon.	E. J. Dodge & Co.	New Orleans.	Aug. 16.	Europa.	Italian Line.	Genoa.
Aug. 16.	Willapa.	Sudden & Christenson.	New Orleans.	Aug. 16.	Willapa.	Sudden & Christenson.	Unknown.
Aug. 19.	Siskiyoun.	E. K. Wood Lumber Co.	New Orleans.	Aug. 19.	San Ramon.	E. J. Dodge & Co.	Unknown.
Aug. 19.	Gen. Getty (lug).	United States Army.	Wilmington.	Aug. 20.	Gen. Getty (lug).	United States Army.	Unknown.
Aug. 19.	Foe.	United States Army.	Galveston.	Aug. 20.	Foe.	United States Army.	Unknown.

\*Other than United Fruit Company's vessels and vessels in regular service with United States.

## PORT OF BALBOA.

## \*ARRIVALS.

## \*DEPARTURES.

Aug. 7.	Chiriqui.	Henry Halphen & Co.	Panama.	Aug. 13.	Alicia.	Panama Trad. & Trans. Co.	Camp Sabbath.
Aug. 11.	Alicia.	Panama Trad. & Trans. Co.	Camp Sabbath.				
Aug. 12.	Cardelia.	Oil Tank S. S. Co.	Port San Luis.				

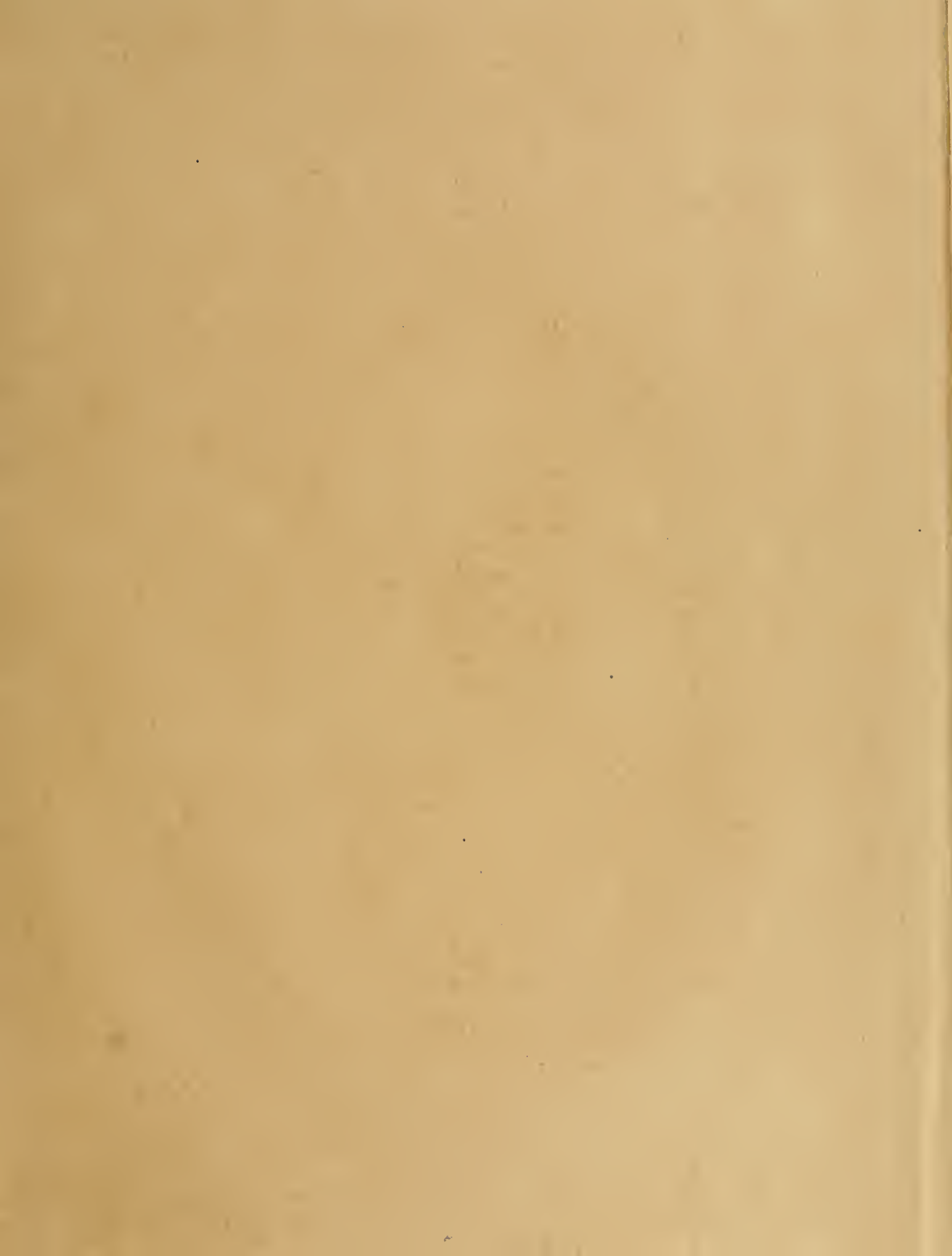
\*Other than ships passing through the Canal.

(Continued from page 447.)

## NEW ORLEANS TO CRISTOBAL-COLON.

## CRISTOBAL-COLON TO NEW ORLEANS.

Pastores.	U. F. C. Aug. 28.	Sept. 4	Turrialba.	U. F. C. Aug. 12.	Aug. 19	Heredia.	U. F. C. Aug. 20.	Aug. 25
Alliance.	P. R. R. Aug. 31.	Sept. 6	Parismina.	U. F. C. Aug. 16.	Aug. 21	Turrialba.	U. F. C. Aug. 20.	Aug. 28
Zorapa.	U. F. C. Aug. 31.	Sept. 7	Atenas.	U. F. C. Aug. 19.	Aug. 26	Parismina.	U. F. C. Aug. 27.	Sept. 1
Calamares.	U. F. C. Sept. 4.	Sept. 11	Carlaa.	U. F. C. Aug. 23.	Aug. 28	Atenas.	U. F. C. Aug. 27.	Sept. 4
Cristobal.	P. R. R. Sept. 7.	Sept. 14	Abangarez.	U. F. C. Aug. 26.	Sept. 2	Carlaa.	U. F. C. Sept. 3.	Sept. 8
Carrillo.	U. F. C. Sept. 7.	Sept. 14	Heredia.	U. F. C. Aug. 30.	Sept. 4	Abangarez.	U. F. C. Sept. 3.	Sept. 11
Tenadores.	U. F. C. Sept. 11.	Sept. 18	Turrialba.	U. F. C. Sept. 2.	Sept. 9	Heredia.	U. F. C. Sept. 10.	Sept. 15
Colon.	P. R. R. Sept. 14.	Sept. 20	Parismina.	U. F. C. Sept. 6.	Sept. 11	Turrialba.	U. F. C. Sept. 10.	Sept. 18

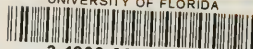








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