

HARBOR OF PONCE, P. R.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORT OF
EXAMINATION OF HARBOR AT PONCE, P. R.

DECEMBER 11, 1906.—Referred to the Committee on Rivers and Harbors and ordered
to be printed.

WAR DEPARTMENT,
Washington, December 6, 1906.

SIR: I have the honor to transmit herewith a letter from the Chief of Engineers, United States Army, dated 12th ultimo, together with copy of a report from Maj. C. A. F. Flagler, Corps of Engineers, dated June 6, 1906, of a preliminary examination of harbor at Ponce, P. R., made by him in compliance with the provisions of the river and harbor act of March 3, 1905.

Very respectfully,

WM. H. TAFT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, November 12, 1906.

SIR: Under authority conferred by joint resolution of Congress approved June 30, 1906, I have the honor to submit herewith for transmission to the Public Printer report of June 6, 1906, by Maj. C. A. F. Flagler, Corps of Engineers, upon preliminary examination of harbor at Ponce, P. R., authorized by the river and harbor act of March 3, 1905.

For the facts and reasons given the local officer is of the opinion that at the present time the harbor at Ponce is not worthy of improvement by the United States; and this opinion is concurred in by the

Board of Engineers for Rivers and Harbors, whose duty it is under the law to review all reports of this character, and by me.

Very respectfully,

A. MACKENZIE,
Brig. Gen., Chief of Engineers, U. S. Army.

The SECRETARY OF WAR.

PRELIMINARY EXAMINATION OF HARBOR OF PONCE, P. R.

ENGINEER OFFICE, UNITED STATES ARMY,
Wilmington, Del., June 6, 1906.

GENERAL: I have the honor to submit the following report on the preliminary examination of the harbor of Ponce, P. R., provided for in the river and harbor act of March 3, 1905, and assigned to me by letter from the Chief of Engineers, dated April 25, 1905.

This examination was made under my direction, in January, 1906, by Mr. G. W. T. Miller, assistant engineer, copy of whose report is attached hereto, together with map^a of the harbor from the latest chart of the United States Coast and Geodetic Survey.

I concur in Mr. Miller's views and recommendations. The harbor at Ponce is merely an open roadstead, partially protected by reefs and keys. It possesses a considerable deep-water anchorage and an ample entrance, but it is exposed at almost all seasons to a tolerably heavy swell from the southeast and to occasional heavy storms from the southwest. Access from vessels in the anchorage to the port is possible only by small boats or lighters owing to the wide and shallow foreshore of mud off the port.

Improvement in the interests of navigation must follow one or both of two courses, viz, breakwater protection and pier construction. Dredging would be of little use, as it is not needed in the anchorage, and would be rapidly obliterated by wave action on the foreshore off the port.

The present annual commerce of the port (\$9,000,000) does not, in my opinion, justify the cost of construction of breakwaters, which would extend well into the millions for all breakwaters needed and would exceed \$1,000,000 for the one most desired—that at Gatas reef.

The construction of long piers from the port to the anchorage would best satisfy the desires of commercial interests, but I believe it has been the policy of the Federal Government, and it is certainly my opinion, that the construction and maintenance of piers should be left to the local interests. When such have been constructed it is likely that improvement by dredging or otherwise, to facilitate their use, might form the basis of a project commensurate with the commercial importance of the harbor.

At present it is my opinion that the harbor is not worthy of improvement on any lines that are justified by its present commerce.

Very respectfully, your obedient servant,

C. A. F. FLAGLER,
Major, Corps of Engineers.

Brig. Gen. A. MACKENZIE,
Chief of Engineers, U. S. A.

^a Not printed.

[Second indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, D. C., August 13, 1906.

Respectfully returned to the Chief of Engineers, U. S. Army.

The within report of the district officer and the appended report of the assistant engineer on a preliminary examination of harbor at Ponce, P. R., have been reviewed by the Board of Engineers for Rivers and Harbors. All those known to be interested in this subject were invited by the district officer to submit to the Board any statements or arguments regarding the necessity for the improvement. Several communications^a have been received and given consideration.

This harbor is practically an open roadstead, protected from the north by the main shore and, except for a slight protection from reefs and keys, is exposed to swells from a southerly direction. There is a large and deep anchorage area from which freight and passengers are lightered ashore.

The improvement desired appears to be the protection of the deep-water anchorage and better communication between the anchorage and the shore. To protect the anchorage from southerly storms would require the construction of an extensive system of breakwaters, the cost of which is believed to be prohibitory. To create a channel through the shoal water between the anchorage and the present wharf so as to obviate the necessity of lighterage would require extensive dredging in an exposed location, which would be subject to rapid deterioration. Material advantage to commerce would result from the construction of piers from the shore to deep water, but work of this character should not, in the opinion of the Board, be undertaken by the United States.

In a communication^a received by the Board from the deputy collector of customs at Ponce it is stated that the commerce of Ponce amounts to about 100,000 tons annually. A list of the principal articles exported in the year 1904-5 is given in the assistant engineer's report, which reduced gives about 53,000 tons, and it is stated that the imports are a little less than the exports. This estimate appears, therefore, to verify that of the deputy collector, from which we may infer that the statement in the assistant engineer's report, that the commerce amounts to 350,000 tons, is in error.

Any comprehensive system of improvement of this harbor in the interests of general commerce would involve works of great magnitude, the cost of which, in the opinion of the Board, would not be justified by the present and prospective commerce involved.

In view of these facts the Board concurs in the opinion of the district officer that it is not advisable for the United States to undertake the improvement of the harbor at Ponce.

For the Board:

R. L. HOXIE,
Lieut. Col., Corps of Engineers,
Senior Member Present.

^aNot printed.

HARBOR OF PONCE, P. R.

REPORT OF GEORGE W. T. MILLER, ASSISTANT ENGINEER

ENGINEER OFFICE, UNITED STATES ARMY,
Wilmington, Del., June 4, 1906

MAJOR: I have the honor to report upon a preliminary examination of the harbor of Ponce, P. R., made in accordance with your instructions.

The city of Ponce is situated in the southern part of the island of Porto Rico, somewhat west of its north and south axis. The city proper lies about 2 miles inland from the coast, and the playa, or port, is a smaller settlement directly on the shore of the harbor, consisting in most part of the business houses of the city. Transportation between Ponce and Ponce Playa was formerly carried on by several hundred carriages, which have now been superseded by a finely equipped electric road.

Of the towns and cities of Porto Rico, Ponce ranks next to San Juan, the capital, in size and importance.

At the last census, in 1899, the population of the city and playa was 26,000, while that of the district of Ponce was 203,191, making it the most populous of the seven districts into which the island is divided. Of this number, 2,403 only were foreign white—mostly men.

The wealth of the city in 1899 was estimated at \$12,021,115.

The most important industries of the city are the manufacture of rum, soda water, carriages, chocolate, soup paste, hats, cigars, and cigarettes. There are also an electric plant, telephone line, a foundry, a power carpenter shop, tannery, ice factory, coffee-crushing plant, and several other smaller industries.

Several quarries of good building stone (limestone) are found in the vicinity.

The American Railway extends from Ponce eastward to Guayama, and its further advance in that direction is intended to keep pace with the development of sugar plantations. Westward and northward the railroad follows the coast through Mayaguez to Aguadilla, and when the 27-mile stretch now building between Aguadilla and Camuy is completed railroad communication between Ponce and San Juan will be established. There is also projected a direct electric line between the two cities, a \$3,000,000 enterprise.

By the military road, a fine macadam highway, the distance between Ponce and San Juan is about 81 miles.

The southern side of the island produces the best grades of sugar. The soil and climate are better adapted to sugar culture than anywhere else in the island, and although irrigation is necessary in many places, still the conditions are better. The area in sugar tributary to Ponce was 12,861 acres in 1899-1900, and is rapidly increasing.

With the present lack of internal communication, Ponce is therefore far in the lead in the export of sugar. Ponce and its tributary country suffered greatly from the destructive hurricane and attendant floods of August 8, 1899, and agriculture is just about recovering. There is little fear of a repetition of the calamity in the near future, as but seven destructive hurricanes have been recorded since the settlement of Porto Rico four hundred years ago.

It is estimated from the custom-house records that the maritime business of Ponce amounts to 350,000 tons per annum.

On July 1, 1905, the records of the custom-house were subdivided into subports, and for the six months ending December 31, 1905, the export trade of Ponce amounted to \$1,278,924, with the imports a trifle less.

Although sugar is the staple article of export, several others figure in considerable quantity and value. For the years 1903-4 and 1904-5 the exports of principal commodities from Ponce in detail were:

| Article. | 1903-4. | | 1904-5. | | |
|-------------------|-----------|--------------|-------------------|--------------|-----------------|
| | Quantity. | Value. | Quantity. | Value. | |
| Coffee | pounds.. | 9, 157, 219 | \$1, 023, 203. 40 | 3, 997, 807 | \$511, 364. 14 |
| Sugar | do..... | 56, 471, 022 | 1, 984, 417. 85 | 85, 377, 160 | 3, 951, 922. 01 |
| Molasses | gallons.. | 965, 750 | 218, 564. 27 | 1, 196, 489 | 157, 504. 00 |
| Tobacco | pour ds.. | 44, 077 | 45, 627. 09 | 81, 464 | 77, 377. 54 |
| Oranges | number.. | 5, 636, 138 | 151, 020. 55 | 2, 582, 784 | 63, 825. 25 |
| Hides | pounds.. | 145, 071 | 13, 788. 06 | 69, 795 | 10, 950. 01 |
| Animals: | | | | | |
| Horses | number.. | 2, 603 | 92, 994. 85 | 1, 320 | 108, 665. 10 |
| Cattle | do..... | 1, 720 | | 3, 441 | |
| Mules | do..... | 194 | | 111 | |
| Total value | | | 3, 529, 616. 07 | | 4, 881, 608. 05 |

These statistics were obtained from the deputy collector of customs at Ponce. The import figures were not available, but are estimated at a little less than the exports, the entire commerce being approximately \$9,000,000.

Ponce is estimated to have about 25 per cent of the maritime business of the island. It is a port of call between Europe and the Spanish main and Cuba; a regular port of the New York and Porto Rico Steamship Company's steamers from New York and New Orleans, as well as the company's coasting steamers that go around the island gathering cargoes for the regular line steamers at San Juan. Many other coasting and sailing vessels call at the port. The exact number was not obtainable. There were but two steamers and two sailing vessels in the harbor at the time of the examination, one of the former being the United States light-house tender.

In 1901, of the 65 consuls representing 19 nations in Porto Rico, 12 were stationed at Ponce. In 1903, of 74 consuls—the representatives of 22 nations—13 were at Ponce; and in 1905 the number at Ponce remained the same, although 23 nations had 77 consuls in Porto Rico.

There is one chartered bank in Ponce and one private banking house. The chartered bank, *Credito y Ahorro Ponceño*, was organized in 1895 for a period of twenty-five years. It has a capital stock of \$120,000 paid in. Its resources in 1901 were \$403,421.49 and in 1903, \$494,068.67.

A parish was established at Ponce in 1692. The town was founded in 1752, and in 1878 it became a city.

The board of harbor works of Ponce was created by a royal order, May 28, 1894. It was constituted and governed the same as the San Juan board. The funds of the board were derived from a tax of 50 centavos per ton unloaded, an annual appropriation from the budget of the island, and one of 40,000 pesos (\$24,000) offered by the municipality of Ponce. No improvements whatever had been made to the harbor prior to the organization of the board with the exception of a rough wooden pier opposite the office of the captain of the port. The first work of the board was the repair of this pier. Discharging and loading of vessels were done entirely by lighters, which were beached opposite a large iron shed called the "ayuntamiento."

The board's plan of improvement was devoted to the water front, to provide landing piers and wharves, and no protective works were contemplated, except buoying the channel. This project was approved and executed. It consisted of a wharf 58 meters long by 52 wide, connected with the shore by an arm 20 meters by 20 meters, with sheds upon the pier, and the buoying of the Tasmanian shoal.

The collection and expenditure of funds by the harbor board were as follows, reduced to United States currency:

| Source of revenue. | 1894-95. | 1895-96. | 1896-97. |
|------------------------------------|------------|------------|------------|
| From budget of island..... | \$3,600.00 | \$3,600.00 | \$3,600.00 |
| From municipality of Ponce..... | 2,280.00 | 2,280.00 | |
| From 50 centavos tonnage tax..... | 12,413.53 | 12,392.65 | 11,130.56 |
| Balance from previous budgets..... | | 12,031.72 | 19,836.03 |
| Total..... | 18,293.53 | 30,304.37 | 34,566.59 |
| Expended..... | 6,261.81 | 10,468.34 | 17,658.23 |
| Balance carried forward..... | 12,031.72 | 19,836.03 | 16,908.36 |

No evidence is shown that the municipality paid its portion for 1896-97, and from the above balance for that year must be deducted \$1,710 to make it agree with the official records, which give the balance as \$15,198.36. The sum deducted, \$1,710, corresponds to the recorded cost of buoying the Tasmanian shoal.

The above balance of harbor funds, by reason of the refusal of the president of the board to act as custodian, was deposited at the Ponce custom-house and there put into the general funds of the island. These funds were forwarded to the governor-general at San Juan, and by him in turn to Spain. Although the claim has been presented, the money has never been refunded.

In 1896-97 elaborate surveys were begun for a general and extensive improvement of the harbor. The surveys were completed in 1897 and a plan of improvement was formulated, consisting of four breakwaters, completely inclosing the harbor, except two openings left for the passage of vessels, for protection of shipping, and the building of a pier to accommodate shipping of deep draft.

The war put a temporary stop to all improvements, and soon after, the harbor board was abolished, so that no part of this extensive project was ever executed.

Ponce Harbor is an indentation in the southern coast of Porto Rico, roughly the arc of a circle in its shore line, the chord from east to west being about 3 miles long and the segment from the chord to the playa $1\frac{1}{2}$ miles deep. It is practically an open roadstead exposed from about east-southeast around by way of south to west. Cardona Island and the shoals to the westward protect it in a small degree from the south and southwest, while Magazine Point and Las Gatas shoal offer more effective protection to a small portion of the harbor at its eastern end. There is a large area of harbor between Las Gatas on the east, Cardona Island on the south, and the playa having a fairly regular shelving bottom with depths ranging from 30 feet to nearly 60 feet. At the eastern and western limits of the harbor bold water approaches very closely to the shore, while in the vicinity of the playa occurs the shallowest water, with a gently sloping bottom to the 30-foot curve, which lies from one-half to two-thirds of a mile from the shore line.

Ships entering the harbor approach on an almost due north course skirting the western edge of the Tasmanian shoal and then to the eastward, but close in under Cardona Island light, and come to anchor in 30 to 40 feet of water about three-fourths of a mile offshore in front of the playa, whence the cargoes are discharged or loaded by means of large flat-bottom lighters which are run on the beach. On the one hand the lightering is a very profitable business to those engaged in it, as the charges are \$1.50 per ton from vessel to shore, and it was stated that vigorous opposition was anticipated from the lighter owners to any improvement that would tend to diminish or do away with their business. On the other hand, the heavy charges are a serious handicap to the business of the port, and the cargoes suffer severely from the numerous and rough handling and by delays from lighters getting aground too far from the shore to discharge.

Just to the westward of the playa, the Portugese River, a small stream usually, empties into the harbor. There is no evidence that this stream carries enough sediment at any time to materially shoal the harbor, but the shallower water in front and to the eastward and westward of its mouth for a considerable distance indicates that in the course of ages the river has been carrying a portion of the island into the harbor.

The annual increment is extremely small and no indications could be found of littoral movement of the sand to any amount. The topography of the bottom is quite permanent. From the best information obtainable the bottom is sandy with some silt or mud. There are also some rocky reefs, coral principally, as Las Gatas and Cayito reef, which is about half a mile northwest of Cardona Island. The anchorage is spacious and good holding ground. What is principally needed in the way of improvement is breakwater protection from the heavy roll brought in by the prevailing winds. The records of the United States Weather Bureau for 1903, 1904, and 1905, give the prevailing winds from east, southeast, south, and south-southeast. Occasionally a wind comes up from the south or southwest.

Las Gatas shoals and islands and Magazine Point form a natural protection from the prevailing winds and attendant seas, but the harbor area thus protected is very limited and quite distant from the playa, which is located at the worst point in the harbor when shipping interests are under consideration. Any improvement of the water front for shipping at the playa would require long and expensive piers to project into deep water beyond the flats, while at both the eastern and western horns of the crescent deep water is close inshore. The eastern point of the harbor at Las Gatas is the logical location for protective works, and even going a step farther, the best adapted site for piers and warehouses, but this latter proposition is one for private enterprise, for the city of Ponce or for the insular government to grapple.

Between the playa and Magazine Point, a distance around the shore of 1 mile, it is almost one continuous mangrove swamp, and this tract of land is owned, by concession or franchise, by a private corporation. If the question of the United States building a pier at Magazine Point to render available to shipping the deep water there under the protection of Las Gatas islands should be seriously discussed, the right of way through this land would have to be determined at the outset or else the improvement might result in benefit to but one corporation.

The Spanish harbor laws reserved as royal domain a right of way around the coast of the island, but it seems from a reading of the laws that the reservations were for specific purposes. Coast vigilance service, as it is translated, requires the leaving clear of a tract 6 meters wide, or more if necessary, around the coast of the island, inland of and adjoining the highest high-water line or line of waves during the heaviest storms, and another maritime zone is specified 20 meters wide from the same lines for the purposes of salvage of wrecked vessels and their cargoes. When such salvage was performed on private lands, however, damage done was to be indemnified, but only to the extent of the value of the property saved, less the expense of salvage. It does not appear, therefore, that the right of way in the maritime zone was intended for a public highway, nor for any other purposes than those specified.

The absence of practically any piers and docks at Ponce after an existence as a town of over two hundred and fifty years, and with a maritime business for a number of years as large as it has, is probably due in large measure not to lack of enterprise on the part of the business interests, but to their looking to the Government to do the work, as the Spanish projects for improvement included piers and other water-front construction, as well as dredging and protective works. That seemed to be the general impression at Ponce, brought out by questions as to improvements needed. First of all a pier to accommodate deep-draft vessels, then the improvement of Magazine Point for a coaling depot, as vessels are now compelled to turn back to St. Thomas for coal, then the enlargement of the protected area of the harbor by breakwaters and deepening along the shore by dredging. As far as could be learned by careful inquiry the harbor bottom is composed of dredgeable material wherever the necessity for such should arise, but it would not seem advisable to dredge deep pockets into the foreshore in front of the playa, as they would soon be obliterated, and to remove en masse sufficient of the flats to render piers of moderate and practical length possible would involve an outlay out of all proportion to the value of the interests concerned, and its permanency would be problematical.

A breakwater at Las Gatas islands is the only effective means of protecting and improving a large area of the harbor, and this plan could be supplemented by other breakwaters at Cardona Island and at Cayito reef if necessity for enlargement of the harbor area should arise. A breakwater at Las Gatas could not be of necessity very long, as it would run very quickly into extremely deep water, where the cost of construction, compared with the value of commerce protected, would be prohibitive, and yet to make its influence felt at the anchorage opposite the playa, it would have to run a considerable distance in comparatively deep water.

Quarries of good limestone that could be used in the construction are available in the vicinity and the cost of delivery would be low, but a breakwater extending across Las Gatas islands about along their axis and out to the 50-foot contour, which would be necessary to be effective, would cost, roughly, not less than \$1,000,000 in addition to the cost of dredging, which will become necessary when piers are built.

The question that seems to present itself if the Government were to undertake the construction of protective improvements at the present time is that of improving and protecting a harbor that does not exist as such, but simply is an anchorage into and out of which vessels slip as quickly as they can discharge or load cargo.

It does not seem, judging from the primitive conditions existing and tolerated, and the opportunity for the development of a good and modern port by the business interests using it, that the time has yet arrived for the Government to undertake improvements.

The logical order of proceeding would seem to be the selection of a site in the harbor best adapted naturally for the economical construction of piers where communication between vessels and the shore could be carried on most readily; the construction of such piers and the creation of a modern port, and then, with the work localized and definite, the Government aid the enterprise by protective works and other needed improvements within the usual scope of such works.

Very respectfully, your obedient servant,

GEORGE W. T. MILLER,
Assistant Engineer.

Maj. C. A. F. FLAGLER,
Corps of Engineers, U. S. A.

