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WAR DEPARTMENT,  
Office of the Chief of Staff,  
Washington.

decrease of cost of \$3,100,000.

February 21, 1911.

The difference in the two estimates as to armament and cost is shown  
**MEMORANDUM FOR THE SECRETARY OF WAR:**

ESTIMATE OF CHIEF OF COAST ARTILLERY.  
Subject: The defense of the entrance to Chesapeake Bay by permanent land fortifications.

The Chief of Coast Artillery, in a letter to The Adjutant General of the Army, dated July 30, 1910, states that the Taft Board, in its report of February 27, 1906, recommends the defense of the entrance to Chesapeake Bay by seacoast guns, mortars and mines and included the construction of an artificial island on the middle ground between Cape Henry and Cape Charles. He states in his letter that, in view of the experience connected with the defense of El Fraile Island in Manila Bay and other developments since the date of the report of the Taft Board, he thinks the size and consequent cost of the proposed island may be materially decreased below that considered necessary by the Taft Board, and that a better arrangement of the armament can be made. The Chief of Coast Artillery also calls attention to the necessity for procuring land at Cape Henry as a part of the defense scheme, which land he states will apparently continue to increase in value, and concludes his letter by recommending that a board of officers be appointed to prepare a complete project for the defense of the entrance to Chesapeake Bay.

The Secretary of War, in an approved memorandum, dated August 9, 1910, concurred in the recommendation that the whole matter of the defense of the entrance to Chesapeake Bay be studied again, and directed that the project be prepared by the Second Section (now the War College Division) of the General Staff, in conference with the Chief of Coast Artillery and such experts as it might find necessary to call into consultation.

The cost of the establishment of the coast defenses at the entrance to Chesapeake Bay was estimated by the Taft Board at \$9,207,871. The estimate of the cost of these defenses as modified by the Chief of Coast Artillery in a memorandum accompanying his letter of July 30, 1910, (the letter on which this sum is based) is \$7,132,871, an estimated

REPLY TO ST. JAY

OFFICE OF THE CHIEF OF ARTILLERY  
AND DEPARTMENT

decrease of cost of \$2,100,000.

It may be safely estimated that the cost of the defense of the entrance to Chesapeake Bay under any project so far formulated will be for installation and appliances from eight million dollars to ten million dollars.

ESTIMATE OF CHIEF OF COAST ARTILLERY, JULY 30, 1910.

that after the establishment there will be an annual charge of not less than \$1,000,000.

Character and Location of Armament.	Character and Location of Armament.
6 - 14" Rifles, Cape Henry	4 - 14" Rifles, Cape Henry
2 - 12" Rifles, " "	8 - 12" Mortars, Cape Henry
16 - 12" Mortars, " "	2 - 6" Rifles, " "
4 - 6" Rifles, " "	
4 - 3" Rifles, " "	
2 - 14" Rifles, Artificial Island.	2 - 14" Rifles, Artificial Island.
2 - 10" Rifles, " "	4 - 6" Rifles, Artificial Island.
3 - 6" Rifles, " "	4 - 12" Mortars, " "
3 - 3" Rifles, " "	

Estimated Cost.

Armament, emplacements and accessories, .....	Armament, emplacements, and accessories.....
\$6,102,871.	\$4,352,871.
Artificial Island in Middle Ground.....	Artificial Island in Middle Ground.....
2,600,000.	2,600,000.
Purchase of land sites.....	Purchase of land sites.....
505,000.	180,000.
TOTAL.....	TOTAL.....
\$9,207,871.	\$7,132,871.

Construction of post at Cape Henry.....	Construction of post at Cape Henry.....
1,200,000.	1,200,000.
Total initial cost with post.....	Total initial cost with post.....
\$10,407,871.	\$8,107,871.

Estimated annual cost of garrison (14 companies).....	Estimated annual cost of garrison (10 companies).....
700,000.	500,000.
Estimated cost of upkeep of armament, emplacements and post.....	Estimated cost of upkeep of armament, emplacements and post.....
228,000.	198,500.

Total annual cost..... \$ 928,000. .... \$ 698,500.

From the above it will be seen that the Taft Board's project would involve an estimated initial cost of \$10,407,871, and an estimated annual cost for troops and upkeep of \$928,000. The estimated cost of the Chief of Coast Artillery's project, for the corresponding items, would be \$8,107,871 and \$698,500, respectively.

(\*) Not included in Taft Board estimate, but added here for sake of comparison between estimates, and to show approximate total cost of project. Does not include target practice.

(\*\*) Not included in Chief of Coast Artillery's estimate, but added here to show approximate total cost of project. Does not include target practice.

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It may be safely estimated that the cost of the defense of the entrance to Chesapeake Bay under any project so far formulated will be for installation and appliances from eight million dollars to ten million dollars, and that after the establishment there will be an annual charge of not less than from \$600,000 to \$900,000 for maintenance of the necessary garrison and upkeep of the establishment. These sums are so great that they naturally lead to the discussion of two questions:

1. Does the military policy and necessity of the United States warrant the expenditure of such an amount of money for the purpose indicated?
  2. Can not the policy and the necessity, if such exists, be satisfactorily met by the expenditure of a smaller amount?
- The military policy of the United States, so far as relates to coast defense, is indicated by the Endicott and Taft Boards and the appropriations made by Congress in pursuance of recommendations of these boards. That policy seems to be to protect the great commercial ports on our coasts from attack by sea, by the establishment of strong land defenses. Pursuant to that policy, the harbor entrances to practically every commercial port, including a number of minor importance, from Maine to Galveston on our Atlantic and Gulf coasts, and from San Diego, California, to Seattle, Washington, on the Pacific coast, have been fortified. Many of our military experts are of the opinion that this policy has been followed to an extreme, in that it has led to the establishment of powerful coast defenses at ports of minor importance, or at ports the water entrances to which are so shallow, tortuous and narrow as to preclude the possibility of hostile vessels of the larger battle-ship and cruiser class or of inferior naval vessels of even moderate draft approaching the cities which the forts are supposed to defend. Other experts believe that even at some of these ports of first importance, where strong seacoast defenses are warranted, the character and amount of armament emplaced is in excess of the necessities.
- To justify the first contention, i. e., that ports of minor importance and those with shallow, tortuous and narrow water approaches have been unnecessarily defended at the entrance to Chesapeake Bay.

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fortified, attention is invited to the following cases: Mobile, Pensacola, Tampa, Savannah, Charleston, Wilmington, Washington, Baltimore and Philadelphia, which are discussed in some detail in APPENDIX A.

To justify the second contention, i.e., that the character and amount of armament at some ports of first importance is in excess of necessities, attention is invited to the cases of San Francisco, California, and Philadelphia, Pennsylvania.

As stated, the seacoast defense policy, so far as developed, appears to extend to the defense of commercial ports and harbors. It has, up to this time, not been construed to extend to the defense of great areas of sheltered waters (such as Delaware Bay, Chesapeake Bay and Pamlico Sound) which might be used as naval bases by an enemy, unless the defenses established at the eastern entrance to Long Island Sound be so construed as an extension of the policy, a construction hardly justified, inasmuch as the prime object of the defenses is to close an approach to New York City and New London which are already protected on their real harbor entrances by strong forts.

The suggestion that the entrance to Chesapeake Bay be strongly fortified, therefore, raises the question whether the entrances to other large bodies of water, such as Delaware Bay and Pamlico Sound, should not also be fortified, and leads to the question of why the closing of Chesapeake Bay to hostile ships is advocated. The arguments for closing the bay to an enemy seems to be as follows:

The Army advocates it on the general ground that without fortification the bay might be used by an enemy having command of the sea as a base of operations for a land force brought to its waters in transports under naval convoy, with a view to landing and attacking Norfolk, Washington or Baltimore. No claim is advanced that a fleet having access to the bay would attempt to force a passage to any of these cities through the mine fields or gun fire of the established forts. It is therefore as a protection against a convoyed land force that the Army advocates the establishment of defenses at the entrance to Chesapeake Bay.

The Navy appears to advocate it on the same general ground as the Army, i. e., as a protection to the cities named against a convoyed land force. In addition to this, it points out the desirability of the waters of Chesapeake Bay as a base of operations for a hostile fleet on account of the supplies to be obtained there and the injury which would result to our coast-wise commerce in the event of the waters passing into hostile control. Naval advocacy is therefore, like Army advocacy, based mainly on the dangers which would arise from the occupation of the bay by a fleet conveying a land force. Like the Army, the Navy advocates make no claim that a fleet having access to the bay would attempt to force a passage with its important ships through the mine fields or gun fire of the forts established for the protection of Norfolk, Washington, Baltimore and Richmond.

It may therefore be concluded that the main and only valid reason for defending the entrance to Chesapeake Bay is to exclude from it a fleet conveying a land force of considerable size, and this leads to the question of whether this end can not be attained by the expenditure of a less sum of money than has, up to this date, been suggested for the purpose.

Leaving aside the question of whether it would not be better policy to expend the greater part of such sums as have heretofore been suggested (from eight millions to ten and one-half millions) as necessary for the defense of the entrance to Chesapeake Bay, for the protection of other more important areas or for the creation, organization and equipment of the mobile forces so seriously needed for the protection of the existing land defenses of first-class ports, such as Boston, New York, Philadelphia, San Francisco, etc., from attack by troops landed outside the range of their guns and threatening their unprotected rears, consideration will be confined to the question whether the desired end can not be attained by a moderate and reasonable expenditure of money.

Referring to the chart enclosed herewith, on which the various depths are indicated by colored lines, it will be seen that the waters at the entrance to Chesapeake Bay which have a depth of five fathoms (30 feet)

all lie within 5,500 yards of the proposed site for batteries on Cape Henry. Ships drawing or fearing to navigate in less than thirty feet of water would therefore have to pass within 5,500 yards of any guns established on the Cape. Naval opinion seems to be that no vessels of the superior battle-ship or cruiser class would, under other than very exceptional conditions, attempt to enter waters of less than five fathoms depth. Battleships and cruisers of the superior class, as well as the larger class of passenger steamers which are subsidized in Europe for use as transports, draw from 26 to 31 feet. These ships would therefore be excluded from the bay if the area of water next to Cape Henry was mined and covered by gun and mortar fire. Further reference to the chart will show that only vessels drawing under 24 feet can enter the bay outside the area shown as covered by the fire of guns and mortars on the Cape. The deduction to be made from the above statements is that, with the five fathom channel 5,500 yards wide covered by gun fire from Cape Henry, the larger and more important ships must stay outside the bay and that only light draft cruisers, transports and torpedo craft can enter.

Expert opinion of coast artillery officers appears to warrant the statement that even should the powerful armament contemplated by the Taft Board be established at the entrance to Chesapeake Bay, that entrance would not be effectively closed against torpedo boat raids, and that vessels of this class, by taking advantage of darkness, fog or heavy weather, would have a fair chance of running past the guns.

Naval opinion appears to warrant the statement that a convoyed land force of any great size would not venture to enter Chesapeake Bay under the protection of small cruisers, gun-boats and torpedo craft alone, and that any operation connected with entry into the bay of such craft would, if Cape Henry were fortified, be confined to a raid. As the operations of this class of craft in a raid can not be looked upon as in any way a serious menace, there is, therefore, no apparent use in expending vast sums of money in an attempt which would in all probability be ineffective to prevent them.

