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ACCESSION NO. 1916/258.

AUTHOR: War Department.

SUBJECT: Defense of Panama Canal Against Submarines.

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DECLASSIFICATION OF WWII RECORDS

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PROTECTION OF "PANAMA CANAL"

The following means are suggested in protection of the locks at the PANAMA CANAL against possible attack from submarines:

PROTECTION OF THE PANAMA SIDE.

Stretch three sets of heavy wire cables or chains across the channel to the north of the FARFAN POINT, cables to be a hundred (100) yards apart. Rig three nets, of the best torpedo defense type, to the southward of the above cables. The chains or cables to be left in place at all times, simply lowered to the bottom when not in use, the western ends being made fast to concrete piers, built for that purpose, the eastern ends raised and shackled to the pier to the north of the FARFAN POINT, when they are to be used. To raise these chains or cables, a donkey engine would probably be required. (See sketch).

ON THE COLON SIDE, THERE ARE TWO CONDITIONS.

(1) Before completion of breakwaters.

Stretch three sets of chains or cables across the CANAL at a point an 1/8 of a mile south of the entrance of the MINDI RIVER, chains to be about a hundred (100) yards apart. Rig three torpedo nets to the northward of these chains, block the FRENCH CANAL at the most convenient point.

(2) After completion of breakwaters.

Arrange to rig four chains at approximately the following depth from the bottom; 10 - 20 - 30 & 40 feet. To the northward of these, rig torpedo net of hemp or steel. The following method of stretching these chains are suggested and sketches of which are enclosed.

Same method to be used to block passage around eastern breakwater.

The following means are suggested in destroying submarines that reach the nets:

Have a number of small steam launches or small steamers carrying 1 - 3 & 6 pounders, have same provided with small mines similar to those used on Revenue Cutters in wrecking operations. If possible foul periscope or some part of submarine by use of sweeps or grapnels, than explode mine alongside of her.

DEPARTMENT OF ARTILLERY AND LAND DEFENSE.

Coast Defense Commanders' Course - WAR GAME - 1914.

Problem No. 5.--Coast Defenses of Panama.

Discuss the necessity for the protection of the Panama Canal against attacks by submarine vessels, and the best means of obtaining such protection.

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DEPARTMENT OF ARTILLERY AND LAND DEFENSE.Coast Defense Commanders' Course - WAR GAME - 1914.

P. C. F.

WAR DEPARTMENT.  
UNITED STATES ENGINEERING OFFICE,  
ROOM 2, CUSTOMHOUSE,  
NORFOLK, VIRGINIA, NOVEMBER 17, 1913.

EEW/K

## MEMORANDUM

for the Chief of Engineers, U. S. Army.

Subject: Protection from submarine vessels, Panama defenses.

1. During the recent visit of the informal Board composed of Major William Chamberlaine, Major George Blakely, Coast Artillery Corps, and myself, to the Isthmus of Panama, for the purpose of selecting sites for fire-control and searchlight stations, we talked over a number of features of the defenses, and one which seemed to us of special importance, but which we did not feel that we could insert in our report on fire-control matters, is the necessity of protecting the approaches to the canal from the entrance of submarines.
2. The present type of submarine vessel is understood, when submerged, to make use of the periscope, which projects above the water; but there is no reason, that I can understand, why it should not be possible to use, under certain conditions, a submerged periscopic sight which would not appear above the surface of the water, but which would serve to disclose, especially in the clear waters of the tropics, the position of the vessel, mines, etc. With the development of the gyroscope compass it would appear as if it might be feasible for a submarine vessel to navigate for considerable 2d instances entirely submerged, with not even the periscope showing, so that they would be practically invisible from the shore, or from vessels.
3. If a submarine should slip by the defenses and proceed up the entrance of the canal to the locks, it could, doubtless, in a short time, do great damage to the lock gates, and might cause injury sufficient to prevent the operation of the canal for a considerable time.
4. To prevent the entrance of submarines, it is believed some physical obstacle is necessary, extending completely across the canal entrance, that is, some form of boom, which, of course, must be made so that it can be readily removed and replaced. It is thought that it might be possible to suspend, from barges, some form of boom composed of wire cables woven together, a number of these barges being fastened end to end, so as to completely cross the channel. Such a boom would stop submarines, or would certainly delay them long enough to make it possible to drop some form of explosive on them.
5. Whether the design and construction of such a boom would pertain to the Engineer Department is not clear, but it is believed that the matter of the protection of the defenses against submarine vessels should be considered urgent, and should be given careful consideration.

E. EVELETH WINSLOW,  
Lt. Col., Corps of Engineers,  
U. S. Army.

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Office C. of E., November 22, 1913. - TO THE CHIEF OF STAFF.

The matter discussed above appears to merit consideration.

EDW. BURR,  
Colonel, Corps of Engineers,  
Acting Chief of Engineers.

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War Dept., O. C. S., C. A. D., December 1, 1913.- To Commandant, Coast Artillery School.

The Chief of Coast Artillery directs that the question presented herein be made a matter of study and discussion in the course of Artillery and Land Defense at the Coast Artillery School, and that it be returned with a report analyzing the conditions and making recommendations in regard thereto.

C. C. HEARN,  
Major, Coast Artillery Corps,  
Assistant to Chief of Coast Artillery.

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Coast Artillery School, Fort Monroe, Virginia, December 3, 1913. - To The Director, Department of Artillery and Land Defense, for the action required by the 2d indorsement. KCM

12-23-13-25

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