command for that purpose. As this movement was anticipated and the subject of discussion between you and myself last December, you have no doubt thought of various modes by which it could be met and overcome most promptly. The Secretary of War desires you quietly to call a meeting of from three to nine persons, at your descretion, of the best judgement in naval engineering and warfare, to meet immediately at your father's house or some other convenient place, and to sit as a committee to devise the best plan of accomplishing the capture or destruction of the Merrimac. I would suggest the name of Abraham S. Hewitt as a member of the committee. You will bear in mind that every hour's delay to destroy the Merrimac may result in incalculable damage to the United States and that the plan or plans for her destruction should be submitted at the earliest hour practicable for the approval of this Department, to the end that their execution may not be unnecessarily delayed a moment.

To enable you to communicate hourly with this Department the telegraphic company is directed to transmit all messages from you at the expense of the Government.

Acknowledge this dispatch the moment you receive it. Spare no pains or expense to get the committee together immediately. Act with the utmost energy. You and each member of the committee will consider this whole matter confidential."

The following also was sent:—

"War Department, March 15th, 1862.

C. Vanderbilt, Esq., New York.,

The Secretary of War directs me to ask you for what sum you will contract to destroy the Merrimac, or prevent her from coming out from Norfolk, you tc sink, or destroy, her if she gets out. Answer by telegraph, as there is no time to be lost." (Signed by Assistant Secretary of War).

What was this Merrimac? Not much more than a unwieldy wooden hull, with a pitched roof made of railroad iron; and it is now known that had the strength of the Monitors guns been known then, the first fair hit would have placed the Merrimac *hors de combat*.

In the light of these records, and assuming the *Inflexible* as the intruder instead of the Merrimac would it surprise us much, in a like emergency, to find even the present administration calling upon Mr. John Roach, to know how much he would take to destroy the disturber of our marintime quiet?

The writer of the Prise Essay for the year 1884, says in his conclusions:—

"The U. S. cannot defend its great marintime cities from the attacks of any naval power."

Another writer[6] gives the following as what might be expected if war were suddenly declared by a great military power whose fleets, and transports, were on their way from Halifax or Bermuda, with no intimation of where they would assail us.

"1st. A call of state troops of say 250,000 men, each state to furnish a certain quota. Officers of the Regular Army would of course, scatter wherever they could obtain higher commissions.

2nd. The purchase of enormous quantities of arms, powder, tents, provisions, animals and other military stores, and the chartering of steamboats and railways.

3rd. The distribution of these troops and supplies, at prominent points along our *nine thousand miles* of coast and frontier, and the concentration of the Regular Army, at points where it could be used to the best advantage.

4th. The mustering of troops, and organizing them into brigades, divisions, and corps.

5th. The inspection of fortifications, and hastily putting them into the best practicable shape for defense.

6th. The building of supplementary field works, intrenched camps, and the planting of torpedoes, and channel obstructions.

7th. The attempt would also be made to buy or make heavy guns to complete the armament of our forts; but it is needless to say that very little could be done in the time available for that purpose."

What Military Policy Should Obtain?—Some of the highest authorities have written copiously to prove that we are *defenseless*, as I have attempted to show, and it is at least consistent that they should all refrain from suggesting any policy or action as likely to avail in the event of a sudden declaration of war by a foreign power, even if there be no other reason for their reticence.

Officers of experience and intelligence, to whom I have broached the subject in search of ideas, have uniformly replied in substance that "we would do the best we could," though one suggested following the example of the Russians in 1814 and burning the city, if we found it bombarded, and retiring to the interior.

In face of the ominous silence of military writers on the question at issue, and what has preceeded, I should be justly chargeable with emulating the fool who "rushes in where angels fear to tread," were I not able to plead orders in venturing suggestions as to "what we must do to be saved."

I have assumed three weeks as the maximum time for hasty preparation,

at the end of which we should be attacked in force along the whole line.

As to the second way of our being attacked, (the first being a purely naval question) *i. e.* the enemy assailing one or more of the important points of the coast with a large military and naval force, with a view to more or less protracted occupation,—

The coast should be divided up into districts of defense. The Regular Army should be recruited to the maximum strength of which its organization admits,—about 53,000. The state troops, responding to the call of the President, should be associated with the Regular Army, so that, in any division of the whole force into separate armies, a like proportion of each would be found.

It is quite certain that a force could be speedily organized large enough to furnish, in this way, a main body with which to defend each of these districts from invasion, which would not probably be attempted, since the object of the hostile expedition would be more easily accomplished by attacking cities, navy yards, &c., than by landing, and thus allowing our immense population to take part directly in the national defense.

The main body would take station at such a point in each district as to admit of ready transportation to the point where needed in case of attempted landing. In case of an extended district, the main body might be divided into sections to constitute the reserves for the garrisons of the individual district.

The force in each district would garrison the coast batteries organize a special reserve, and also a guard and observation service for the whole districts. This latter service would be performed by a chain of posts, and outposts.

Strong detachments with field guns should be placed at points peculiarly favorable to landing.

On high points along the coast observation towers should be constructed, the observers being men familiar with naval manœuvres. As in the "Virginius" scare, heavy timber platforms should be constructed, where permanent ones are wanting, in barbette batteries otherwise suitable and equipped.

In the forts, all guns having carriages should be mounted as rapidly as work day and night could accomplish. Civilian labor should be, in the main, employed for this work. The 8″ rifle (converted) of which we have about 140, should be distributed among the forts commanding important channels. The 13″ and 10″ sea coast mortars, are probably our most valuable weapons, and should be mounted with the least possible delay in batteries as much together as possible, concealed from view of the fleet behind substantial earthworks.

In the open batteries there should be machine guns, and light guns for firing grape, canister, or simply shell. A heavy shower of these smaller missiles would rattle through the tops, remove dead spaces on the decks, enter ports, and be very valuable, were the garrison able to stay to use them.

In the meantime the regular foot batteries and any heavy artillery state troops should be assigned to the sea coast defenses and commence at once drilling at all the guns mounted; and the old regular soldiers, forming but a small leaven to a large uninstructed mass, should not be taken from these drills, and other soldier's, duty to do work for which civilian labor would suffice.

One the first questions to come up, would be how to provide for the thousands of troops suddenly thrown from all directions, into the large cities,—New York for instance—without tents, rations or facilities for cooking. For this we might use the vast system of hotels along the beach from Rockaway to Long Branch which are connected by railroads. The troops could be sent direct to these improvised barracks, avoiding the confusion of landing them in the city, and there quartered, fed, organized, drilled, supplied with ammunition, camp equipage, &c., and instructed in throwing up batteries and temporary shelter.

We should have to make extensive use of obstructions and sub-marine mines to provide against the 3rd. and 4th. methods of attack, or for the defense of the seaboard generally.

Obstructions, Fixed and Floating.—The former would be used for channels which admit of being closed to all navigation during hostilities, and of not too great tides and depth. They are rows of piles of various arrangements; *chevaux de frise* of wood or iron against smaller vessels; ships loaded with stone ready to be sunk where required, &c.

In deeper channels, strong currents &c., but affording good anchorage, the fixed obstructions would be used. The kinds are numerous:—chains, or iron ropes supported by bouys, rafts, ships or floating timber bound in bundles by chains; so-called *cable-nets* and *horizontal-nets* and *linked-rafts*.

The construction of these is technical but, with our skilled labor, ever ready and abundant, these obstructions could be made inside the time specified.

Submarine Mines.—There are three kinds: —

Mechanical Contact,
Electrical Observation,
Electrical Contact.

Their mode of operation is apparent.

We should have to rely mainly on the first, in any emergency, though dangerous to friend and foe. There are many varities. They are easily and cheaply made, and may be improvised at the last moment, so says Captain Maguire of the Engineer Corps.[7]

If that be so, they should be ordered in large quantities when war becomes inevitable and laid in all important channels, not provided with better. Sufficiently skilled labor for laying them could be had without delay.

Dummies, or dumb mines, would be planted in large numbers with the active mines, but should, in no case, be depended on alone, as some enterprising newspaper reporter would surely inform the enemy of that fact.

As to the other two classes they are complicated and require much time for producing the many component parts, including the galleries, electrical rooms &c., and technical training to lay them.

The Engineers propose to have these mines operated by engineer and artillery officers, and a few of these officers are instructed in the subject each year at Willet's Point. The Artillery School, applying for the means of teaching the artillery officers of the school, some of the rudiments of this art has, I understand, been offered a *photograph* of a torpedo, lest some of the secrets of the system might be divulged if more were communicated.

Not having seen this picture, I was obliged to apply to an officer of engineers[8], who has ventured to furnish me the following notes, which are his own personal ideas. He says:

"Torpedoes have been provided for the defense of Boston, New York, and Philadelphia, and a partial supply for San Francisco. There is but one factory in the country that has the plant for making torpedoes, and its capacity with the present plant is about 1000 a year. Other factories would of course take up their construction in case of war, but some time would be needed for the preparation of the plant, and the time it would take to provide torpedoes sufficient for the defense of our principal cities can therefore not be estimated. In any event, it would be a question of months and not weeks. But of all the essential parts of the torpedo system, the torpedo case is perhaps the least difficult to provide. The operating apparatus in the casemates, the automatic arrangement in the torpedo case, and the manufacture of the cable, all require skill and experience in their construction, and any delay in laying down a system would most likely be attributable to one of these sources."

"Our present supply of cable was obtained from England and is stored in the casemates of the Willet's Point Fort. Our own manufaturers have had but limited experience in the construction of such cable as we need, and if we did not have time to import a full supply before the declaration of war, we would

no doubt, experience considerable dely in this question. We have never laid down a ground group, with a view of getting some idea how long it would take to plant a system of mines, but I should say in a general way, after conversing with some of our officers about it, that it would take two weeks to plant the New York Harbor system, supposing all the materials to be on hand, and everything to work smoothly. I know of but two galleries, one at Fort Schuyler, and one at Fort Wadsworth. The one at Schuyler is completed, but I am not sure about the one at Wadsworth."

"The present strength of the battalion of engineers is 400 men. One officer charged with the planting of a system of torpedoes, would have a detachment of non-commissioned officers and privates sent him from Willet's Point, but, as this force would probably be insufficient, he would form a class of trained intelligent mechanics, who, after about a week's instruction, ought to be able to do all the mechanical work of putting together the various parts of the torpedoes. In brief, the electrical torpedo system, in view of the totally inadequate supply of the parts, and the difficulty and delay of obtaining some of them, and the absence of operating casemates and galleries leading to the water, would not be a large factor during the first few months of the war, unless Congress should take timely warning and authorize the purchase of all needed supplies before the declaration of war."

The torpedoes, already provided for any harbors, would be laid at the earliest moment, and we should, of course, commence at once the manufacture of electric torpedoes in large numbers, and, at forts where they are to be used, the construction of the rooms for electrical apparatus, and the galleries. The electric light should be promptly put up, illuminating any desired portions of the harbor, especially the mines and obstructions.

Too much stress cannot be laid on the fact that mines are of no use unless protected by guns, and this would determine their distance from the batteries.

Those officers of engineers and artillery, a small number at best, that have been trained at Willet's Point should, in each case, be detailed for duty with mines, allowing no delay or exceptions.

Finally, in case of war with England, it would be absolutely necessary for the protection of Buffalo, Erie, Cleveland, and Detroit, that the Canadian peninsula north of Lake Erie, be occupied at the very outset of the campaign, to control the Welland Canal and prevent the enemy from bringing Whiteworth or Frazier guns, within range of those cities. Also against Mexico we should want to take the offensive at once.

S. F. MASSEY,
1st Lieutenant 5th Artillery.

APPENDIX.

1. All foregoing quotations are from Report of Chief of Engineers for 1881.
2. "Inter Ocean."
3. "Washington Star," January 25th, 1886.
4. Translation in Ordnance Note No. 223, 1882.
5. Record of Rebellion, Series I, Vol. IX.
6. Major King's article on "Military Necescities of the U. S." &c. M. S. I. Journal, Dec. 1883.
7. Many of the foregoing recommendations were obtained from Magnire's "Attack and Defence of Coast Fortifications."
8. Lieut. S. W. Roessler, U. S. Eng., Adj't Batt. Eng., Willet's Point, N. Y.

CORRECTIONS.

Page	1,	line 16,	read *drought* for drougth.
"	2,	" 30,	read *pierce* for peirce.
"	3,	" 18,	read 2177 for 1177.
"	4,	" 35,	read *pierce* for peirce.
"	5,	" 4,	insert comma after *roof*.
"	8,	lines 36 and 38	read *maritime* for marintime.
"	14,	line 7,	read *Necessities* for Necescities.