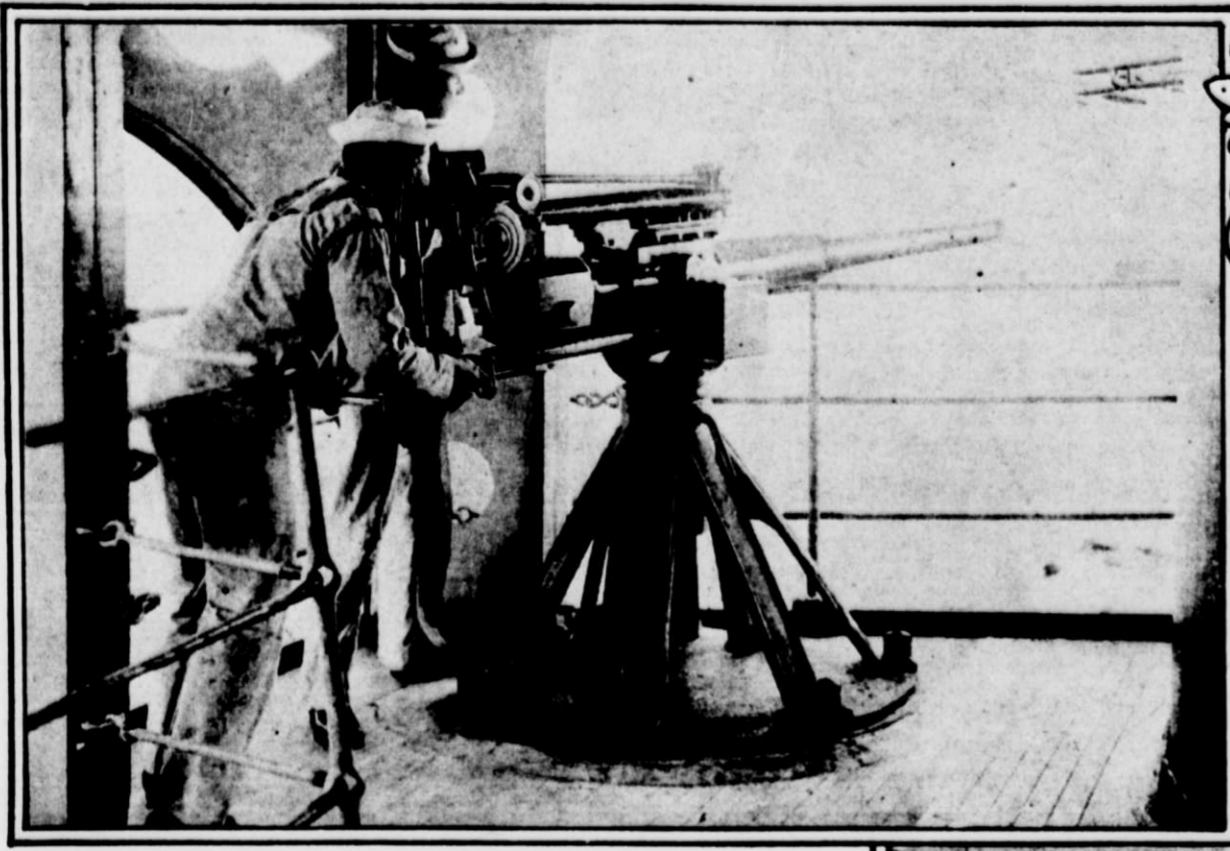


PLAYING THE COAST DEFENCE WAR GAME



Aiming at an aeroplane scout from a battleship.



The stage on which the war game is played.

Every Feature of Naval and Military Strategy Worked Out Upon a Green Board That Shows in Topographical Detail Some Fortified Harbor

assuming that there is no fog or that the fog has lifted.

Even if fog held the harbor, the coast defences would retain their advantage against mine destroying vessels, since they would send out against them their floating harbor defences, monitors, torpedo boats, gunboats and submarines. And, even without these, they could do great injury to the intruders through the service of patrol boats familiar with the home harbor that would be able, even in a fog, to locate the mine destroyers with great precision.

It should be explained that our fortified harbor is divided into many squares, measuring 500 yards on a side, these squares being charted and numbered and so accurately located, with exact ranges known, that, if word came of the presence of hostile vessels in square 3607, every gun in the fortress could be raining shot and shell on that particular area within

Down at Fortress Monroe Imaginary Attacks Upon Our Shores Are Met by Four Officers Whose Toys Are Model Battleships and Forts

By CLEVELAND MOFFETT.

THE coast artillery war game is played in a spacious room, wherein is set up a large green board (twenty-five by forty feet) on which models of dreadnoughts, battleships, cruisers, destroyers, etc., made carefully to scale by a master gunner, manoeuvre about in column and line, in double echelon for pursuit or retreat, and in other familiar formations.

Bounding this sea area, which represents a war range of eight or ten miles, are the land features of some fortified harbors shown in great topographical detail, with batteries, range finding stations, searchlights, mine fields, barracks, roads, streams, woods; in fact all points of military importance.

At one end of this room a group of four officers direct the attack of ships against the shore. At the other end, on raised seats, a larger group, sixteen in all, of battery commanders, fire commanders and the supreme fort commander, study the board with special field glasses, decide on situations as they arise and conduct the operations of defence.

A separating curtain, drawn at one minute intervals, allows the attacking party to move their ships over the board, as the ships might move over the water, without the defenders seeing each new position until the curtain is withdrawn. One of these war game campaigns may last for weeks.

These coast artillery war games are played with the greatest seriousness by all concerned and in absolute silence save for necessary commands, which are given and transmitted with pretence of telephoning from point to point, exactly as they would be given in a real battle. A wonderful simulation of actuality is obtained, especially in night attacks, when the room is darkened and tiny searchlights (small reflecting mirrors) flash their beams to the proper ranges, are placed "in" or "out" of action, are traversed or elevated as the need is by a searchlight operator in accordance with commands received from the fire or battery commanders.

As the engagement proceeds the excitement grows. Differences of opinion arise as to hits and damages, as to the correctness of movements and maneuvering. Is this ship out of action? Is that battery silenced? Umpires are necessary—one for each side and a chief umpire. For weeks afterward officers argue over details and decisions. There is no principle or method of coast defence operations that cannot be demonstrated in this war game.

As to the method of estimating hits either by ships or shore defences it may be explained that this is accomplished by applying the law of probabilities as established by target practice records.

To explain how this is done would take us too far into military technicalities. The point is that substantial advantages are gained by this war game practice. Lessons are learned in the handling of guns and men. An officer who has never been in action gets a vivid illusion of action and receives training in vital decisions on which the issues of a battle may depend.

Let us now consider in detail, as the war game experts do, what would happen if a dozen hostile battleships appeared some morning eight or ten miles off Sandy Hook and proceeded to concentrate their fires upon Fort Hancock. Suppose this happened without interference from our own fleet, which was occupied elsewhere. Would New York harbor be in danger? Could our harbor forts prevent the enemy's ships from penetrating the upper bay and using as targets the Woolworth Building, the City Hall or the Metropolitan Opera House? I have laid this tactical problem before several of our leading coast artillery authorities and I give their opinion, partly in their own words, partly in my own.

We will assume that the enemy's aim is to pass through the Narrows and to hold up New York City. To do this he must silence Fort Wadsworth, he must silence Fort Hamilton. Is this possible? How can he silence these terrible fortresses with their fourteen inch guns, their twelve inch guns, their mortar batteries and all the rest of their formidable equipment? The overwhelming supremacy of first class and fully manned coast

defences over a fleet attacking under such conditions (all of our American coast defences, by the way, are less than half manned) is established beyond question. There is no difference of opinion here among military authorities. In a direct daylight attack the fleet would certainly be defeated, probably destroyed.

But what if the enemy makes his attack in fog or darkness? There is another advantage enjoyed by the fleet, that it can strike when it pleases, choosing conditions as unfavorable as possible for the coast defence. Suppose the fleet chooses darkness, stealing in, silent and menacing, in the dead of night, with all lights extinguished save for a small and hidden stern light on each ship to guide the ships behind. Then what?

The answer is that searchlights on the shore, sweeping the harbor and its approaches with ceaseless watchfulness, make the coast defences guns as formidable in darkness as in daylight—that is in clear darkness.

Indeed the shore guns have one advantage in darkness, because then the fire commanders and battery commanders can more easily indicate which particular ship they have selected for a target. Instead of telephoning to range finders and gun pointers a precise verbal description of the vessel, easily misunderstood, the fire commander in a night engagement would be an easy mark for the enemy, which means that the vessel to be destroyed is out there clearly illuminated by number one searchlight, which every man knows. And straightway the range finders and gun pointers concentrate upon this vessel.

The enemy's battleships then can accomplish nothing in the darkness so long as searchlights from the shore play over them. They must put out these troublesome searchlights at any cost. This is a more difficult task than would appear.

One might imagine that a searchlight, fully exposed upon high ground and throwing forth a great beam carrying the brilliance of millions of candles, would be an easy mark for the ship guns; but the contrary is true. The largest coast defence searchlight is only five feet in diameter, and to hit a five foot disk six miles away with one of the navy guns is like hitting a penny half a block away with a pistol. It is a matter of extreme difficulty to get the range of a searchlight owing to its elusive dazzle; and at Fort Arthur the Japanese shot at Russian searchlights for weeks and never put them out.

It is certain, however, that our New York enemy would try to put out the searchlights of Fort Hancock. He might put them out, or fail. Night after night he will send in a flock of destroyers, dozens of them, close in to shore, to bombard the lights. His destroyers will brave the mine fields, and being of shallow draught will probably pass safely over them. Besides, the forts will hesitate to waste their mines on such small craft, unless they rather for the battleships outside.

So it is possible that by buzzing about persistently, like moths around a candle, and accepting losses from the rapid fire guns of the fortresses and their patrol boats, these destroyers may accomplish their purpose and succeed in putting some of the searchlights out of commission. Which will be a serious matter, for they cannot be replaced.

Not only are these coast defence searchlights very expensive (a single one with its operating plant costs about \$17,000), but the sixty inch parabolic mirrors of silvered glass are not made in this country and could only be imported from France after weeks of delay. So a searchlight put out by a gun stays out, and if all the searchlights of a fortress were put out—which is very unlikely—the fortress itself would be seriously crippled for night work.

I may mention that a plan is now under consideration in the War Department to equip our forts with disappearing searchlights, which in emergencies and in the daytime will drop behind protecting walls after the manner of our disappearing guns.

During the manoeuvres at Fisher's Island in the summer of 1913 an ingenious use of searchlights against shore defences was made by Admiral Badger's fleet in an effort to run by the forts at night. A distance of four or five miles separates the fortifications on Fisher's Island from the guns at Fort Michie, and to run safely between these defences would give to a hostile fleet a commanding position in Long Island Sound and would



Observing room at Fort Hamilton.

leave cities like New Haven and Bridgeport on the northern shore at the mercy of the enemy. Could this be done?

Admiral Badger (representing the enemy) waited for a chance when the wind was favorable. Then as his first move in the game he sent ahead a group of destroyers with the draughts of their furnaces wide open and a feed of oil fuel so abundant that each vessel as she steamed along threw forth from her funnels a cloud of dense smoke that drifted toward the forts on the Fisher's Island side.

These several clouds from the advancing line of destroyers blended together and formed a continuous black curtain half a mile long, which hid the destroyers themselves except the first one, and formed a barrier through which no searchlight could throw its beams.

The consequence was that the gun pointers, range finders, course pointers, fire commanders and battle commanders on this side of the passage were rendered temporarily blind and powerless; their guns were of no avail against this impenetrable curtain.

Then under the protection of this smoke pall the Admiral sent forward his battleships, steaming at full speed in line of battle, and ordered each one to turn all her searchlights on the guns and range finding stations of Fort Michie. Here was the second half of the trick. The forts on one side of the channel were blanketed by black smoke and on the other side were dazzled by the concentrated glare of fourscore searchlights.

It was impossible for the range finders to sight their telescopes, for the fire commanders to see anything in this universal glare. And, before the land forces had recovered from their demoralization, the fleet, steaming at high speed, had swept mockingly past, and the thing was done. The double ruse had succeeded. An enemy's fleet had penetrated Long Island Sound and now held half a dozen cities helpless before it.

This brilliant coup of Admiral Badger's has been much discussed in army and navy circles, and doubtless has its lesson and warning for the future; but this lesson is not as serious as would appear, for two reasons. In the first place, it is possible to protect coast defences against the dazzle of searchlights by the use of ray filters in the telescopes, these filters allowing the gun pointers and range finders to do their work without inconvenience, just as a person can look at the sun without inconvenience if he uses smoked glasses.

Also, if one of those thirteen battleships, steaming at full speed ahead, had been struck by a big projectile, as would doubtless have happened in real war, the others, rushing along behind and unable to stop or turn out in time, would have piled themselves up in a frightful wreck. Furthermore, in actual war an enemy's fleet would never have been able to pass through this channel, even with the forts silenced, because the channel would have been guarded by mines loaded with deadly explosives and the touch of one of these mines would instantly cripple or destroy the proudest battleship afloat. As a matter of fact unloaded mines had been laid between the forts during the Fisher's Island manoeuvres and a subsequent examination showed by the evidence of blown out fuses that several of them were struck by Admiral Badger's ships.

One rather serious lesson of the

Fisher's Island manoeuvres is that the best coast defences in the world would be seriously handicapped in a real campaign if put on short allowance of ammunition. Time and time again in this particular place the shore batteries did not fire (or pretend to fire) at the fleet, although the situation was favorable for firing, simply because the strategy of the game required that they act as they would in actual warfare, and in actual warfare the coast defences would not have had nearly enough smokeless powder for their needs. At that time there was not enough ammunition on hand, and it could not have been procured immediately with all the Rockefeller fortune. It is a matter of many months to manufacture a great quantity of smokeless powder such as this country would need in case of war. And the need would be immediate and urgent.

It should also be said that in actual war the destroyers would not have found it so easy to produce a protecting curtain of smoke for the reason that as soon as the first destroyer appeared at the head of the smoke line it would have been promptly shot to pieces and sunk by the shore batteries. Then the second destroyer, thus exposed, would have suffered the same fate, and so on, the result being that the smoke curtain to shield the battleships would never have been spread.

In the Fisher's Island manoeuvres submarines were sent out against the mines, the idea being that these vessels could search under water until they found the electric cables connected with the mines and, by cutting these, could end this danger. Or, by touching a severed cable end with wires from a battery they could explode the mines harmlessly and so secure a safe passage for their fleet through the channel.

That was the idea; but when it came to lifting out of the mud a length of cable weighing several tons it was found that the submarine is quite ineffective. Her men could not get out of her to handle the cable without letting it in water; nor could they, with any success, manipulate the heavy and awkward grapple or cutting apparatus. So this effort failed.

And here may be mentioned an important development in ship to shore manoeuvres that has come recently with the perfecting of the aeroplane. Our coast defence authorities are seriously considering, in their councils of strategy, what their answering move will be against aeroplanes used by an enemy to locate or destroy our mine

fields. There is no question that a trained military observer in an aeroplane can see these deadly mines from a considerable height; in fact, within certain limits and for optical reasons, he sees them better as the height increases.

Not only may aeroplanes be thus used to bring information to an enemy as to the presence or absence of mines in a given channel or harbor, but it is within the near possibilities that they may carry a number of counter mines, to be dropped with time fuses burning, so as to make them explode under water in the midst of the mine area. Aeroplanes are built now that will lift a load of a ton or more, that is the equivalent of eight or ten counter mines, each capable of exploding three or four harbor mines if it happened to strike at the right point.

"How far apart are harbor mines usually placed?" I asked an officer.

"That depends upon the harbor," he said, "perhaps fifty yards apart. They are usually arranged like the alternate squares on a checkerboard."

"How near to one of these mines would the counter mine have to fall in order to explode it?"

"We calculate that a harbor mine will tear a fifteen foot hole in the bottom of a battleship, if exploded within twenty-five yards of her, at a depth of four or five yards. A counter mine would be equally effective against mines."

"Then aeroplanes may do serious injury to mine fields by dropping counter mines upon them?"

"Yes, if they can be dropped and exploded with sufficient precision. The thing is rather in the future, but it is possible."

"What will be the defence against them?"

"Rapid fire guns from the forts or from harbor defence vessels. It will be a desperate risk for men in aeroplanes, carrying a ton of explosives in the form of counter mines. Still, there are always volunteers ready to risk their lives."

A more familiar method of destroying mine fields is to send out from the fleet vessels of a draught shallow enough to pass over the mines in safety, and to have these vessels grapple for the mine cables, lift them to the surface, and cut them, as Admiral Dewey did in Manila Bay. Both of these methods are extremely perilous and of doubtful issue, owing to the fact that these mine destroying craft, during the whole period of their activity, are under a shattering fire from the forts,

one minute, even though the gun pointers saw nothing but a wall of fog.

Summing it all up, war game experts declare it improbable that an enemy's fleet could destroy Fort Hancock's mine fields and searchlights, and, unless they did this, they could not advance to the Narrows. Even if they succeeded at Fort Hancock they would have the same thing to do over again at Fort Wadsworth, and again at Fort Hamilton, before they could steam into the upper bay.

"What would you consider the best way of attacking one of our fortified harbors?" was asked of a foreign attaché, and the answer was:

"We wouldn't do it. The thing can't be done." Then this naval authority continued:

"You Americans have nothing to learn from Europe in the matter of coast defences. On the contrary, Europe can learn from you. And your fleet is all right; but your mobile army—" He shrugged his shoulders. "You have an empire that reaches half way around the globe, from Portland, Me., to the Philippines from Alaska to Panama, and you are trying to guard it with so small a mobile army that—well, it's a joke; a joke that may end in tragedy."

I have heard this disturbing view from others—from distinguished officers in our service, who admit that our army is inadequate to the needs of the country.

"Our harbors are splendidly fortified against attack from the sea," said an officer of our Coast Artillery Corps, "but how about attack from the land? Why should an enemy try to take Boston Harbor from the front when they have only to land troops a few miles up the coast or down the coast and take it from the rear?" Gen. Leonard Wood did this in manoeuvres some years ago. What's to prevent an enemy from doing it now—any time?"

"You mean Boston particularly?"

"I mean any of our fortified harbors—all of them. Take San Francisco. What's to prevent an enemy from landing troops below the defences of the Golden Gate? Can't you see them swarming up the peninsula and capturing the Presidio fortifications without receiving a single shot from the big guns?"

"Exactly."

"And an enemy could take New York harbor in this way?"

"Why not? We worked the thing out once as a war game problem at

Fort Monroe. It is perfectly simple. Suppose an enemy suddenly landed 50,000 troops on the New Jersey coast a little south of Sandy Hook. What could we do? How could we stop them from taking Fort Hancock? And then from taking and fortifying the Narrows, the Narrows? And then from crossing over to Staten Island and coming up behind Fort Wadsworth, and taking that? And then from taking Fort Hamilton across the Narrows, and the guns of Fort Wadsworth, which commands its sister fort, being on high ground, and is the more powerful of the two? There is nothing to prevent all this, we could not prevent it."

"But our fleet? What would our fleet be doing all this time?"

"The fleet cannot be everywhere at once. On our immense coast line we have two or three dozen fortified harbors, and hundreds that are unfortified. How is our fleet to know to what point an enemy's fleet would convey transports packed with troops for a sudden attack such as we are considering—I mean a land attack in force, that would take one of our coast defences from the rear and find it helpless?"

"If such a thing happened to the coast defences of New York harbor, then—what about New York City?"

"It would be a bad piece of business for New York City. With the harbor defences captured, an enemy's fleet could enter the upper bay, or, even if our fleet engaged them outside, a single one of their battleships in the upper bay could parade New York City. Even an old type of battleship like our Oregon could force the city to pay a heavy ransom."

"If New York City refused the demands of such a hostile battleship she would simply steam up the Hudson River and wreck the buildings on the side of Manhattan, and then steam up the East River and wreck the buildings on the other side."

"She could do a billion dollars worth of damage in half an hour. A single one of her half ton projectiles could smash through half a dozen skyscrapers as if they were paper boys, and then explode a couple of hundred pounds of lydite or nitroglycerine in the heart of the Pennsylvania Railway station, for example. The city gas mains would burst apart, the electric wires short circuited, and within an hour Manhattan Island would be blazing in a dozen places. That is what an unfortified ship like the Oregon could do to New York City."

"And what is the answer to be required? What must be done to prevent such a catastrophe?"

"We must have a larger mobile army," was the reply.

"How much larger?"

"Considering our vast domain, we should have at least 150,000 men in regular army service, in addition to our coast artillery. And we should have a system of first and second reserves, so that, in time of need, we could draw up a large body of previously well trained soldiers."

"How about our militia?"

"At this, one of the officers smiled and the following passage from a letter written by George Washington to Congress in 1776:

"To place any dependence upon militia is assuredly resting upon a slender staff. Men just dragged from the tender scenes of domestic life, unaccustomed to the din of arms, unacquainted with any regular military discipline, which follows a want of confidence in themselves, and is exposed by troops regularly trained, disciplined and appointed to a superior knowledge and superior in arms, are timid and ready to fly from their own shadows."

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Tea Plate Poetry

THE offhand poet who sits around a table with his tea and a woman, ventured a poem to the owner of the evening at the Harvard Club. "Only yesterday I saw one getting in his fatal fall," he said.

"Some poetic female who had been caught in a net," he said, "and how he would ever get away from it, the lady not looking very intelligent, at least, to me, but he never said."

"There were some small children's paper plates on the table," she said, "gathered one of them and I simply passed it over to the lady with a verse written into its previous position. Ticked? Why, the child couldn't have been more pleased if he had given her a house and a carriage hastened to pass it around and I everybody. This it contained, and I read these lines to her."

"Oh, Lady fair, the poet who has offered a lady a plate of poetry, of course, that started the woman going and the poet was left surrounded by sentimental ladies who empty plates waiting to have their fill as the first had been filled."

Some snap to be a poet!