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1. NAVAL BASES; THEIR LOCATION AND RESOURCES.
2. THE SECURITY OF NAVAL BASES.
3. THE SECURITY OF ADVANCE BASED AND ADVANCE BASE OPERATIONS.
4. THE MARINE CORPS AS AN ADVANCED BASE FORCE.

Lecture delivered by

Captain Earle H. Ellis, U S Marine Corps

at the

Summer Conference, 1913

U.S. NAVAL WAR COLLEGE,

Newport, R.I.

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INTRODUCTORY.

The requisite magnitude of any element of naval power can only be determined accurately after a careful estimate of the nature and extent of the effort which will be demanded of it, as an interdependent part of the whole, in time of war. Therefore in taking up the subject of bases it will be necessary first to make a study of the relation of bases to the naval fabric and of their function in war. Then upon the conclusions derived therefrom as a foundation an estimate will be made as to the number of bases required, their location, and the resources and security with which each should be provided.

NAVAL BASES, THEIR LOCATION AND RESOURCES.

By Captain E. H. Ellis, U. S. M. C.

All modern authorities agree that the proper conception of naval war is to seek out, overhaul, and destroy the enemy fleet. To effect this there is required adequate naval power so prepared that the active fleet may be free to act offensively with maximum efficiency in any probable theatre of war.

A modern fleet is capable of self-sustained strategical activity only to the extent that it can carry the necessities of that activity in its own bottoms. Within this limit it is bound to certain fixed points or bases where in safety it may be resupplied with fuel, ammunition and food, and be docked, overhauled and refitted. With the increase in the size of fleets and the increased variety and complexity of its units the question of maintenance and supply has become of greater importance and the limit of fleet activity more strictly defined. At the present time a safe, steady flow of supplies and near facilities for maintenance work are absolutely essential to efficiency; well equipped and secure bases must be provided if the fleet is to wage successful war.

The resources with which a base should be supplied properly depends upon the period for which the fleet will have to be maintained in its area, but there are other factors which must be considered also -- The sources of general supply and the security of communications thereto.

The supply and maintenance of a modern fleet is a task of such magnitude that the reserve fuel and supplies amassed at bases in time of peace, even by a wealthy and militarily prepared nation, will suffice only for a limited period in war. The bases must sooner or later be replenished from general sources, which in this day of strict neutral rights, are usually limited to those in home territory.

This question of replenishment is an easy matter in the case of home bases, but those bases beyond the seas must be

replenished by floating transport with all its concomitant dangers. As a result these bases are often charged with a function in addition to that of supporting fleet activity in their own particular areas; they also, when necessary, aid in the maintenance of the fleet in the areas beyond. As supporting points along the lines of communications between the home and salient bases, they, together with the protection afforded by the fleet, ensure the free circulation, to and fro, of the sinews and dross of war.

The absolute dependence of the fleet upon its bases makes their security in war time a matter of extreme importance. As the reason for their existence is the increasing of the radius of the fleet activity, the fleet should not be hampered in its movements by being forced to take measures for base defense. The base must be provided with adequate defense in itself, developed in time of peace in concordance with its other elements.

The establishment and development of these bases is the business of naval policy in time of peace. Their location will primarily depend upon the areas wherein it may be necessary to project and maintain the fleet in time of war, so far as can be determined after a careful study of the national policy and strategy of one's own and foreign states. If the state does not control territory in a desired locality then naval policy should work to acquire a port by lease. If this is impossible, preparations should be made to secure it on the outbreak of war.

In the selection of a port for a base in any area, the vital factor is <u>usefulness to the fleet in war</u>. In the first place it should be suitable for the use of the fleet in that it should have:- (a) a good anchorage for at least half the force likely to be based thereon; (b) protection from the elements; (c) an entrance admitting of easy entrance and egress; (d) healthy climate; (e) a small range of tide and weak tidal currents. In the second place it must be capable of being

rendered secure during the absence of the fleet by a reasonable force. In the third place it must be in close proximity to the probable scene of operations. In general, the power of a fleet varies inversely as the distance from the base increases. A base located near the scene of operations permits the exercise of the greatest economy in time and in all the factors of fleet strength.

If there are several points available which fulfill to an equal extent these primary conditions then there are other considerations which influence the selection. The most important of these are natural military strength and local military resources. If one part is as useful to the fleet as another, then that part should be chosen for a base which can be equipped, maintained, and held in security, with the least expenditure of money.

In any case, all requirements will never be found in a single position and the selection must be the result of an adjustment of the factors in accordance with the particular military situation. The essential characteristics, not inherent, must be brought up to the limit required by necessity, by artificial means.

But permanent bases alone cannot supply the wants of the fleet under all conditions. However complete the system may be it will generally be necessary during war to occupy additional points as bases in order to execute the conception of naval war. These points may be those which in peace time were under foreign control, or they may be points either in one's own or foreign territory which it becomes necessary or desirable to occupy by virtue of the unforseen circumstances of war.

It being impossible to develop these points in time of peace, it is therefore essential that when the fleet is projected out from the permanent bases into new areas it should carry with it the elements of a base. This forms the fleet

train of fuel, supply, and repair ships, which carry as far as is possible, those things necessary to fleet mobility and is in reality a floating base. With a secure point of refuge, the train, in an improvised way, executes all the functions of a permanent base, by serving as a fuel, supply and repair depot, a rendezvous for sick and wounded, and a center of intelligence. Such bases are the advanced bases of the fleet and are occupied only in war and then only so long as the particular military situation demands.

As the presence of a train with a fleet at sea imposes a tactical disadvantage, it is very desirable that when a fleet enters a disputed area the train be secured in the selected port as soon as possible. The sooner this is accomplished the sooner the train will be able to exercise its functions of maintenance and supply and the fleet be able to pursue its operations with freedom and efficiency. To effect this there must be carried with the floating base or train a military force adequate to seize and secure the port and so constituted as to be able to perform its work without delaying fleet operations any more than is absolutely necessary. For this work the Advanced Base Outfit is primarily intended.

The location of an advanced base is governed generally by the same considerations as those which govern the location of a permanent base. However, there are certain considerations which exercise increased influence in the selection of the former which would be noted. They are as follows:-

A. Proximity to permanent bases. The resources of an advanced base must necessarily be limited and it is desirable that a permanent base be within reach in case of emergency.

B. Security of communications. The efficiency of the advanced base depends entirely upon constant replenishment by floating transport. Its location should therefore be such as to expose lines of communications to permanent bases as little as possible.

C. Security from attack. As the defenders are limited in power by the conditions under which they operate, it is necessary that the fleet, by its operations, cover the base from an attack in force.

As a rule, the fulfillment of the requirements for a base are not so important for advanced bases, but it will depend to a great extent upon its distance from permanent bases. As the distance from the permanent bases increases the more the advanced base will have to be depended upon and, therefore, the more serviceable and secure it should be.

The necessity of advanced bases to a fleet makes their denial to an enemy, especially one operating at a distance from permanent bases, of great importance. The projecting of a fleet into a disputed area denotes superiority in naval strength, in the mind of its commander at least. If that fleet is operating at a distance from its permanent bases and cannot seize an advanced base, it must withdraw from that area. As a rule, it will be impracticable to deny all available points as there will be a number of them which will serve the purpose, but it may be practicable to deny those points so situated relative to one's own bases and to probable enemy objectives as to be of greatest value to the enemy. These points should be held if possible. Such a procedure will not only complicate enemy operations, but will lengthen the period in which the inferior force may operate with torpedo and mine craft to reduce enemy superiority, operate against his line of communications, or catch the enemy main body at a tactical disadvantage.

Thus far only those fundamental principles governing the establishment of naval bases by nations in general have been dwelt upon. To arrive at specific conclusions as to the base system required for a particular nation (the United States in this case) it is necessary to examine into the peculiar world position of that nation. For no two nations are situated

alike. Each one is confronted by a special situation, the result of geographical position and consequent international interests and it is these two factors which primarily determine the proper magnitude of a nation's military power and the relative strength of its parts.

The United States is a great continental nation with an extended sea frontier on each of the two great oceans. This situation, favoring rapid and easy communication with world powers in general, accords to her a position of great relative importance.

To advantage of position there must also be added advantage of territory; for within her home borders there are comprehended all those resources essential to the making of a self-contained nation. While sea and land borne commerce and supplies form a great factor in her peace time development, their discontinuance in time of war would not have a decisive effect.

Besides the foregoing characteristics, the United States, by reason of the weakness of adjacent American states, has at present an important characteristic of an insular nation in that she is isolated from all other great powers by the sea. While this isolation, in the present day of fast, far-steaming fleets of men-of-war and merchant marine, does not carry with it the same measure of security that it did in the past, it does, as formerly, necessitate an enemy's gaining the command of the sea in order to attack. Moreover with the United States, a self-contained nation, as an opponent the gaining of this command would be only a preliminary operation, for land forces would have to be transported overseas to carry the war to its ultimate conclusion.

As a corollary, the United States, in the case of national wars, cannot impose her will upon any nation outside of the Americas without control of the sea. In all cases it is essential that her sea power be free to act. If her opponent

is an insular power like Orange, whose very life depends upon sea borne commerce and supplies, sea power alone may suffice. If her opponent is a continental nation like Black, which has recourse to land borne commerce in time of national stress, sea power plus land forces will be required.

Such is the special geographical position of the United States home territory. There are, however, foreign possessions to be considered also. The United States has besides Alaska and Panama, on the mainland of North America, island possessions or territorial obligations, in both the eastern and western Pacific and in the Caribbean Sea. These territories, while not self-contained, are situated like the mother country in the respect that no serious attack may be made against them except by way of the sea. It may be seen then that by reason of geographical location the territorial defense of the United States, in any serious war, rests primarily upon the free exercise of adequate sea power in the adjacent waters. In every case, the war will be a naval war and will be decided on the day that the two great concentrated fleets engage in battle.

As a consequence of her favorable geographical location, together with her vast natural resources and energetic population, the political and commercial activities of the United States are necessarily world wide. Also, her interests necessarily conflict with those of other nations because the world is small, and today, all sections are being exploited to a more or less extent. As a result of this conflict of interests, which has grown more frequent with the increase of populations and the development of local natural resources, the United States has developed certain well defined policies designed to protect the interests of her people. Some of these policies are relatively unimportant, others are considered vital to the safety of the nation and its free development. As a conflict of vital interests generally results in war, or in the abandonment of those interests by one of the parties interested,

it is with those that we are connected. At the present time the United States may be said to have two vital policies, as follows:-

1. The Monroe Doctrine.

2. The Open Door.

The first, the Monroe Doctrine, is a defensive policy, having as its object (at the present) the preservation of territorial integrity against all nations. The second, the Open Door policy, is both offensive and defensive in character, having as its object the conservation and furtherance of the world commerce of the nation, particularly in the western Pacific.

Policies designed to preserve territorial integrity are now and always have been vital to a nation. They are fundamental to its existence as a nation. Policies designed to conserve and further international commerce have only become of commanding importance in recent years. In the past the efforts of peoples have been concentrated on the development of local natural resources; but as populations increased and local resources were exploited to the utmost nations were forced to seek outside activities. Today foreign trade is of vital importance to most nations and will in the near future become of vital importance to all. It is of special importance to the United States at this time on account of the natural shifting of the center of world commerce to the Pacific (over which she, with her island possessions holds such a dominant position) and the construction of the Panama Canal, which will tend to bring other great powers in closer touch with that center. It is believed to be absolutely necessary that the United States should provide for the strict maintenance of both policies -- the Monroe Doctrine and the Open Door.

The next question is:- Against whom, where and to what extent? No nation is rich or powerful enough to be equally strong in all directions. Modern war is a gigantic and expen-

sive affair. It is often begun before it is declared and is brought to a conclusion, or at least a decision, with great rapidity. It is essential for any nation that when a conflict of vital interests is seen approaching the preparation of military strength be specific for that event. From the causes leading up to the war and the strength of the state can be deduced his intentions and the probable theatre of war, those things necessary for specific preparation.

Red and Black are at present the greatest rivals of the United States in the Atlantic. But Red, satiated with colonies and buoyed up with their commerce, has found that her interests in general coincide with those of the United States and has officially acknowledged the Monroe Doctrine. It is not likely that the interests of these two countries will conflict to any serious extent in the near future. Black, on the other hand, has through necessity adopted policies directly counter to those of the United States. Her home territory has become overpopulated and overdeveloped and she has been forced to seek outside activities for her people by territorial and commercial expansion. This expansion, despite abortive attempts in other directions, naturally trends to the westward and today her most vital interests, other than those directly affecting the integrity of home territory, are centered in the Caribbean region and South America.

In the Pacific the United States has many rivals, but of them all, Orange, by reason of position and power, is the greatest. She is the only purely Pacific world power, and her very existence depends upon the place which she makes for herself there. Within late years she, like Black, has had to expand territorily and commercially for economic reasons. Twice she has staked all to accomplish her purpose and there is no reason to believe that she will not do so again when it becomes necessary.

We may conclude then that the powers with whom the vital

policies of the United States are most likely to conflict are Black, in the Atlantic, and Orange, in the Pacific.

In the consideration of these two countries with regard to possible future warfare with the United States one is at once confronted with two entirely different situations. It is necessary to take these situations up separately in order to arrive at conclusions of value.

THE SITUATION IN THE ATLANTIC.

In the event of war between the United States and Black the United States will be on the strategic defensive. To attain her object Black must project her fleet into the Western Atlantic, and it is not likely that she will initiate a war until she considers that she has sufficient naval superiority to cross the sea and fight a decisive action with the concentrated fleet of the United States in its home waters.

The real objective of the Black fleet can only be approximated but studies of the situation all point to the Caribbean as being the most probable one. It is there that the United States will be weakest in naval strength and it is there that the greatest of her foreign interests lie -- the activity of which will probably be the direct cause of the war. But whatever the real objective of Black will be it is certain that her strategical dispositions will be those calculated to keep the United States in the dark until the last moment.

Having no base in the Western Atlantic, it will be necessary for the Black fleet to carry with it a large train and to seize and secure a refuge for it upon arrival in the Caribbean. Although the Black fleet will undoubtedly be superior to that of the United States, the train will be a source of tactical weakness, and until it is secured all fleet dispositions must be made with its safety in view. The Black fleet cannot concentrate its efforts on the attainment of its mission -- the destruction of the United States fleet - until the train is secure.

In this case the advanced base will be of particular value to Black. It will not be merely a base in the vicinity of a permanent base, occupied for better convenience of maintenance and supply on the scene of operations, but it will be her only base on this side of the Atlantic, at least 3500 miles from her nearest permanent base. Her failure to seize and secure a proper base will at least result in a setback in her attempt to secure command of the sea in the Western Atlantic if it does not result in the entire abandonment of the attempt, a retreat to home territory and the initiation of a new expedition (if by good fortune she is not so damaged in the meanwhile that she is forced to abandon her object altogether).

In this campaign the mission of the United States fleet will be to prevent the Black fleet from establishing itself in the Western Atlantic and ultimately gaining the command of the sea. Being inferior, it must endeavor to seek battle with the enemy fleet while the latter is tactically encumbered with its train. If this cannot be risked owing to inferiority, then the only recourse is to delay and harass the enemy as long as possible and in the meantime operate with torpedo and mine craft to lessen enemy superiority in capital ships.

To engage the enemy while he is encumbered with his train and defeat him requires that the fleet know his whereabouts and be in a position to meet him in maximum strength. But scouts are lacking with which to clear up the situation and what scouts there are are of short steaming radius -- moreover, it is likely that the United States never will have sufficient scouts; for what appropriations are made must be generally put into capital ships, the element that sooner or later decides the command of the sea.

The only practicable solution seems to be to secure a salient base in the Caribbean; from where the scouts may operate over the maximum area; from where torpedo and mine craft may operate at the earliest moment; from where the main fleet may

issue forth in maximum strength and efficiency to engage the enemy while he is at a disadvantage; and, in case of failure in the first phase, from where the fleet can operate to best advantage on the enemy line of communications.

Of the harbors in the Caribbean, which are under the control of the United States or which might be obtained by lease, only the following are suitable for the use of the fleet:-

Culebra.

Farjardo-Vioques Sound.

Samana Bay.

Fort Liberty-Manzanillo Bay.

Nipe Bay.

Guantanamo Bay.

Margarita Id. - Cariaco waters.

Cartagena.

Gulf of Uraba.

Culebra, being the most salient to a Black approach, would be the most suitable, provided that the harbors in the island itself can be so improved as to fulfill fleet requirements. It is considered that eight square miles of anchorage room are desirable and Culebra affords less than five square miles at present. If the Culebra project is not feasible then the base should be at Samana Bay. It is a peculiar statement, but I believe it to be absoultely true, that of all the harbors named only Culebra and Samana can be made secure with any defense that we can hope to provide. In all other cases the security of the station and fleet anchorage would require an impossible land force for its protection or could not be made secure from sea attacks, by any reasonable fixed defense.

As the ports mentioned are suitable for the use of the United States fleet they will also be suitable for the use of the Black fleet. The necessity of a good advanced base for Black and the value of delaying operations to the United States renders the denial of these points to the former of great importance.

It is presumed that bases on the home coast, the Canal Zone, and at least one permanent base in the Caribbean Region will be adequately defended by the Coast Artillery and the mobile army. But the West Indies and South American regions will be practically undefended except by the active (probably inferior) fleet. Even if there were forces from the mobile army which might be spared for this duty it is likely that public clamor, in the face of uncertainty of the result of a Black divided approach (made probable by our lack of scouts to clear up the situation) would force the authorities to hold them on the Atlantic seaboard. This same public clamor might also draw the fleet there as it did once in the past.

The denial of the undefended ports will undoubtedly, and should, fall to the Marines with the fleet. Of course it is not to be expected that the number will be adequate to defend more than a few points but it will suffice to deny those mentioned, which by their relative position to our own bases and territory make their denial to Black of the utmost importance.

THE SITUATION IN THE PACIFIC.

The international position of the United States in the Orient necessitates her Navy assuming the strategical offensive in the event of war with Orange.

Compared with the United States, Orange has an inferior navy and a vastly superior army. Her first mission will therefore be to reduce the naval superiority of the United States and thereby secure for herself as favorable conditions as possible for the decisive fleet action. Being initially inferior in naval strength, she will endeavor to carry out her mission with her land forces and lesser naval craft (those of doubtful value in a fleet action) only hazarding unreplaceable capital ships when she is in a position to engage enemy capital ships with a reasonable chance of victory.

In the beginning the United States fleet will without doubt be in home waters. Orange will therefore have command of the sea

for a short time. It may be expected then that she will immediately occupy the Eastern possessions of the United States in great strength and endeavor to capture and deny all points which might aid enemy naval operations.

In general, Orange will pursue a course similar to that which the United States must pursue in event of a war with Black.

In this campaign the mission of the United States fleet will be to proceed to the Far East and gain command of the sea. It is believed that with sea power alone the United States can isolate Orange from the world (thus preventing her field armies from acting) and reduce her to a state of helplessness.

The main difficulty which this advance would entail is the logistics. The distance to be traversed renders necessary the refueling of the fleet at least once en route. To encumber the fleet with a train and make it entirely dependent on the train would be hazardous and troublesome. Moreover, we would not have sufficient U. S. Naval and Merchant colliers to form the supply train necessary and would have to purchase foreign shipping, with a total cargo carrying capacity of about 100,000 tons; more, if the Army required extra shipping.

The only practicable solution to those logistic problems is the securing of points along the line of approach where the fleet may refuel with certainty and security, and where reserve fuel and supplies may be collected for use until such time as our supply trains can be put in war operation.

After an exhaustive study of the various available lines of approach to the Far East it is agreed that the line via Hawaii and Guam is by far the most practicable one, if not the only practicable one. In this line there are only two harbors available for the use of the fleet -- Pearl Harbor and the Harbor of Apra. Extended studies have shown that both of these points can be made to serve the purpose of the fleet and can be made secure with a reasonable outlay of men and money.

Besides secure points along the line of communications there

should also be a terminal base in the Philippines; a base so located as to be easily accessible to the fleet in its advance, best cover the line of communications to Guam and Hawaii, and be favorably situated for offensive action against Orange. These requirements practically limit the location of the base to the east and north coast of Luzon and vicinity. Of the harbors in this region only Polillo and Camaguin seem at all suitable for use as bases. Camaguin has the better position. Neither harbor has the necessary anchorage room, but Polillo, improved, would come nearer to fulfilling fleet requirements. Both points could be defended by a reasonable land force, but Camaguin, being a salient open harbor, could not be made secure from sea attacks by any reasonable means. Taking everything into consideration Polillo seems to be the best site for a terminal base.

With Guam secure it would be possible for the United States to prosecute a campaign against Orange from that point; but it would require much greater naval superiority. It would be much more economical to have a fully equipped base located nearer the battle area from which the naval strength necessary could be maintained in its maximum state.

From the foregoing review of the special situation of the United States we can now come to definite conclusions in regard to the base system required. Considerations directly affecting home bases have not been particularly dwelt upon for it is axiomatic that when a nation contemplates the exercise of sea power in waters other than those adjacent to home territory it should first establish proper home bases. These bases, completely equipped, should be so located as to command the resources of the entire country, be backed by the entire military strength of the nation, and be in a position to best project the fleet overseas and maintain it there. The United States now has a system of home bases, but unfortunately it is the result of legislation controlled by local interests and not the result of a sound,

clear legislative policy based on military needs. It is believed that efforts should be concentrated on the development of the following home bases:-

On the East Coast:- A Main base in the Chesapeake region and secondary bases at Narragansett Bay and Key West.

On the West Coast:- A Main base in San Francisco Bay and secondary bases at Puget Sound and San Diego.

Panama:- A Main base. (Panama is included in the home base system as its position and importance render it practically a home port on a south coast).

As for oversea bases, we conclude that the following are required:

In the Atlantic:- Culebra (or Samana Bay)

In the Pacific:- Pearl Harbor.
Harbor of Apra.
Polillo.

RESOURCES OF BASES.

The general considerations affecting the resources of bases have already been stated. But as the peculiar position of the nation, as modified by the special situations in the Atlantic and Pacific, determines the location of its bases, so does it also determine the resources with which they should be provided.

In the Atlantic:-

The United States being inferior in the Atlantic, her mission can only be executed provided that she is able to concentrate at the proper point every element of Naval strength possible and maintain it there in freedom and efficiency. As her hope of victory in the Atlantic lies in the success of operations conducted in the vicinity of the base in the Caribbean or to the eastward, it is then necessary that this base be provided with

docks and repair facilities concordant with the magnitude of the concentrated fleet.

Concentration of effort on the part of the fleet also requires that it be care free as to its communications with home bases. This can only be obviated by the collecting at the Caribbean base of such reserve fuel and supplies as will suffice to sustain the fleet during the critical period of the campaign. But that is not the only reason for holding a good reserve of fuel and supplies at the Caribbean base; another is that the United States will lack the necessary merchant marine to supply the fleet even if the communications are secure. The reasons for the latter are threefold: (1) The time in which to collect the merchant marine will be limited and probably not even all that on the Atlantic coast can be assembled, converted, etc., before the arrival of the Black fleet. (2) The United States, being inferior is actual naval strength, must use every available merchant ship, at all suitable, for strictly military uses, - as scouts, tenders, transports, etc. (3) A large number of merchant ships will be needed (or must be held in readiness) for use as first line transport -- that is, the service of supply between the terminal base (or other bases) and the war craft engaged in various parts of the theatre of war, which in this case will probably include the entire North Atlantic.

It is probable that the transports available for use in supplying the Caribbean base from the beginning of hostilities until the entry of the Black fleet in the disputed area would not suffice to transport more than 100,000 tons for reserve use. The balance of the fuel and supplies necessary to supply the fleet during the critical period of operations -- from the arrival of the Black fleet until the sea contest is decided or until the United States gains the advantage -- must be held in reserve at the base.

<u>In the Pacific</u>:-

In the event of war in the Pacific, the United States fleet

must proceed to the Orient.

It is a principle that when a nation establishes a system of bases for the projecting of a fleet overseas to wage war in a certain area, the nearer a base is to that area (the battle area) the more complete should be its docking, repair and supply facilities.

The terminal base, Polillo, being the pivot of actual operations and the sole instrument of maintenance in that area (6,446 miles from the nearest home base), should be provided with the most complete docking and repair facilities.

Pearl Harbor and the Harbor of Apra, secure way-points on the line of communications, need not have these facilities to the same extent.

When the fleet arrives at Guam, it will have just completed a 3500 mile journey and will have entered the danger area where some war damage may be sustained. (Orange has a salient base at Port Loyd in the Bonin Islands only 800 miles from the Harbor of Apra). The facilities at Guam should be such as to launch the fleet to the westward, and to possible battle, in the very best condition.

Pearl Harbor, outside of probable battle areas and backed by a home base (San Francisco) only 2,646 miles distant, need only be provided with that equipment necessary to maintain the fleet during a passage from San Francisco to Guam under ordinary conditions. In a proper system of secure bases Pearl Harbor is no longer a salient base protecting the western frontier of the United States but merely a secure way-point on the line of communications and the least important one at that.

The supply difficulties attendant upon a campaign in the Pacific have been generally discussed. From what has been stated, it may be taken as truth that economy and efficiency demand that a certain reserve of fuel and supplies be collected and held in readiness at the Pacific bases.

The difficulty of rapidly collecting merchant shipping and

the demand therefore for purely military uses and for first line transport will be as great as in an Atlantic campaign. Although the United States need not initiate a naval advance to the Far East until she desires, or until she can charter and purchase the great floating trains necessary for the complete supply of the fleet, yet it must be remembered that the longer she delays that advance the more secure will be the Orange position. A rapid advance is very desirable. It will become a necessity if the present margin of naval superiority held by the United States is much lessened.

To sum up, every consideration seems to point toward the necessity of collecting at the Pacific bases a reserve of fuel and stores sufficient (with the aid of the transport immediately available) to project the fleet to the terminal base and support its operations there for a period of at least two months, or until such time as the floating supply trains may be expected to be able to take care of the fleet supply. Of this reserve, the major part should, of course, be at the terminal base. The reserve at the way-points need be only that necessary for the use of the fleet en route, plus that likely to be required for the support of minor operations in the vicinity of those bases during the period stated.

In view of the conditions herein outlined we conclude that the oversea bases of the United States should be provided with the following resources:-

	Docks.	Repair Facilities.	Fuel.
Samana (orCulebra)	2 large docks. 1 small dock.	For major repairs.	300,000 Tons.
Pearl Harbor	1 large dock.	" " "	200,000 "
Harbor of Apra	1 large dock. 1 small dock.	" " "	300,000 "
Polillo	3 large docks.	" " "	500,000 "

THE SECURITY OF NAVAL BASES.

In the first paper dealing with Naval Bases general considerations regarding bases, and the location and resources of the oversea bases of the United States were considered. In that paper there occurs the following statement, - "The absolute dependence of the fleet upon its bases makes their security in war time a matter of extreme importance. As the reason for their existence is the increasing of the radius of fleet activity, the fleet should not be hampered in its movements by being forced to take measures for base defense. A base must be provided with adequate defense in itself, developed in time of peace in concordance with its other elements." These are truths and upon these premises this paper, dealing with the security of the oversea bases of the United States, is founded.

A secure base is one which has adequate defense in itself to successfully resist any attack which may be made against it by land or sea during the absence of the fleet. An insecure base is simply an element of enemy naval power. It follows then that the security must be complete. Half measures like total insecurity will only encourage enemy attacks.

What constitutes complete security? That is the question which must be answered; and it is not the security of the past, nor even that of the present which must be determined, but rather that of the future -- the time of test. For the security of yesterday or today is never security for tomorrow. As the materiel and methods of attack are constantly changed and developed so must the materiel and methods of the defense be constantly changed and developed to keep pace. To arrive at a correct answer to the question it will be necessary to determine what the future operations will be and the conditions of the test. This knowledge will flow from a study of the past and present. Therefore, at the outset, there will be reviewed briefly those factors which have in recent years principally contributed to

making the security of naval bases in general an ever new problem and which will doubtless continue to exercise a paramount influence for some years to come. These factors may be stated as follows:-

1. The increased costliness and vulnerability of ships.
2. The development of the torpedo and its carrier.
3. The development of the battle cruiser.
4. The increased size and comparative cheapness of modern armies.

1. The Increased Costliness and Vulnerability of Ships:-

Naval materiel, in the main, is unreplaceable in war. It is the only military element that can destroy naval materiel properly used. Naval materiel is also particularly costly and vulnerable. While it takes an army to destroy an army, one man and one mine may destroy a battleship. When a battleship makes a hit on a million dollar shore battery, except in rare cases, it destroys only what it hits; when a shore battery makes a hit on a fifteen dollar battleship it destroys what it hits plus anything up to fifteen million dollars worth, and the chances are not bad for the limit. To make matters worse, the shore battery (gun for gun) can make more hits.

For these reasons it is extremely wasteful to hazard modern ships in a contest with coast fortifications unless the chances are good that such action will result indirectly in a corresponding reduction of enemy floating naval strength.

Therefore, in the present day, it is not likely that a serious attempt would be made to force an entrance into or closely attack a well defended port, although feints may be made by second class ships in the execution of a demonstration intended to keep the sea defense occupied while a landing is attempted. In general, even when a nation has considerable naval superiority, until the sea contest is decided, naval power must be husbanded for its legitimate use -- the destruction of floating sea power.

(In this connection one wonders why a nation that has lost a "Maine", and might be expected to have assimilated this important lesson, should moor a battleship in Vera Cruz harbor and subject a forty thousand dollar turret captain to the rifle fire of Nicaraguan rebels. But one only wonders.)

We may conclude then that a large number of heavy guns is no longer necessary to protect harbors against the attacks of capital ships, but only that number sufficient to render the approach of capital ships dangerous.

2. The Development of the Torpedo and Its Carrier:-

The submarine is now so seaworthy and efficient that it may be expected to act with considerable success in any future theatre of operations. Its entrance into harbors cannot be prevented by mines and gunfire alone. A boom and net defense is necessary for complete security. If a boom and net defense is impracticable torpedo nets for ships is the only resource

When equipped with a long range torpedo (a 10,000 yard torpedo will be developed within the next few years), torpedo craft may not find it necessary to enter a harbor in order to attack shipping therein, but simply attain a position outside from which they can fire through the entrance. Unless a harbor is well retired inland or has a masked entrance, complete security from this form of attack can only be obtained by adopting the measures outlined above for submarines.

It is probable that in future harbor warfare, mine and boom defense will be attacked by old merchant ships in a manner similar to the blocking attacks at Port Arthur. These attacks will be made not only for the purpose of destroying the defenses but with the object of opening the way for torpedo craft to enter. As this form of attack succeeds at the moment the ships reach their objective, it is essential that the ships be stopped or sunk before they arrive at this point. This may

be accomplished by mines, placed well in advance of the booms, and by gunfire. If mine protection is not practicable then gun fire alone must be depended on. All these conditions point to the necessity of installing guns of at least five inches in calibre, in ample numbers, to protect the mine and boom defenses, and frustrate torpedo attacks.

It may be seen that the narrower the entrance to a harbor is, the more easily it may be secured against torpedo operations. It is peculiar that the very weapon which has made a narrow entrance very desirable for defensive reasons has also rendered a wide entrance, or more than one entrance, no longer necessary for the safe exit of a fleet. The submarines of the defense will ensure a clear area outside the harbor entrance when the fleet desires to issue forth.

3. The Development of the Battleship Cruiser:-

This, in general, affects only those bases which for defense rely partially upon the strategic disposition of the fleet -- advanced bases for instance.

Where formerly, bases, covered by the strategical disposition of the fleet, were liable to attack by protected cruisers only, they are now liable to attack by battleship cruisers. The battleship cruiser, if it can observe the effects of its fire, can bombard large targets effectively up to a range of 18,000 yards, and may be expected to do so if it can without danger to itself. Therefore, for the protection of any base against bombardment by capital ships, it is necessary to install either large calibre guns of long range or lesser calibre guns well advanced from the object protected, in order to render these bombardments dangerous. Of course, submarines will assist in frustrating these attacks, but they cannot be absolutely depended upon and will act only as an auxiliary defense.

4. The Increased Size and Comparative Cheapness of Modern Armies.

Land forces have always been employed to capture naval bases; in fact, no naval base has ever been captured without them. But they have not, until modern times, been used so extensively to destroy naval materiel and shipping in harbors. To effect this, it is not essential that the harbor be captured, but only that a position be secured and maintained from which siege guns can be brought to bear on the objective and the results of the fire observed. It may be expected that when a nation is "long" on land forces it will use them freely for this purpose if its opponent makes the mistake of allowing the possibility of such operations. Modern men are cheap and are replaceable in war; modern battleships are expensive and are not replaceable in war. Therefore, in a naval war, when land forces can effect the attainment of a naval object, it is right and proper that they be used for that purpose; and to the extreme if naval strength is weak. As an instance, there is the siege of Port Arthur where the Japanese lost 60,000 men in killed, wounded, and missing to effect the destruction of the Russian Port Arthur naval detachment. And the Japanese were right.

It is evident that the energy and efficiency of future land attacks on bases render necessary the most complete land protection possible.

From the foregoing considerations affecting the defense of naval bases, we reach the following general conclusions:-

1. That until the sea contest is decided, naval bases will be liable to land attacks in great force and to every form of naval attack applicable except close bombardment by capital ships.

2. That, by reason of the land and torpedo at-

tacks to which bases will be subjected, the only type of position which can be made secure with a reasonable outlay (which is the extreme limit for the United States) is a small island in which there is a retired harbor with a narrow entrance.

The conclusions arrived at from a review of the factors named are generally applicable to the naval bases of all nations and from those conclusions general rules for the defense of any naval base can be deduced. However, in the consideration of this question from the standpoint of a particular nation, with a view to definite results, the peculiar position of that nation must be taken into account.

For the laws which govern the defense of a modern base are not founded on generalities but on logical deductions arrived at after a thorough study of probable attacks which may be made against it by specific enemies.

All of the oversea bases proposed for the United States (Samana Bay, or Culebra, Pearl Harbor, The Harbor of Apra, and Polillo) are situated in small islands. All of the harbors, however, are not retired harbors, nor have all of them narrow entrances. But, as stated in the first paper, all requirements will never be found in a single position, and the sites proposed are the best in the areas in which the bases must be located. The positions approximate closely the type of position desired, can be made to serve the purposes of the fleet, and can be made secure by reasonable means. It is therefore with the security of this particular class of positions that we are concerned. An effort will be made to demonstrate the rules which should govern in their defense as bases of the United States, paying due consideration to the peculiar operations of probable enemy states -- Black and

Orange.

Upon taking up this phase of the question it will be well to first reiterate two facts which were demonstrated by the review of probable operations in the Atlantic and the Pacific outlined in the first paper. These facts are:-

1. That the trend of operations in the Atlantic may force the United States fleet to practically abandon Caribbean waters for a considerable period and thus leave the Caribbean base open to attacks in force by land and sea.
2. That for at least two months after the outbreak of war an enemy in the Pacific will be free to execute land and sea attacks in force against the United States bases in the Far East unhampered by any sea power other than that belonging to the base defense.

The question of the defense of naval bases naturally divides itself into two parts:- (a) Sea Defense; (b) Land Defense. They will be dealt with separately.

(a) SEA DEFENSE:

Black naval power is of recent date and has never been tested in war. Therefore little is known as to Black tactics in naval warfare. Orange naval power, on the other hand, while also of recent date, has been tested in war. During the last eighteen years, it has furnished the world with its only practical lessons in naval warfare. In the conduct of war in the future, Black, as all other nations, will probably be guided by the lessons derived from the study of past Orange operations. In taking up the sea defense of bases, we will, therefore, examine into past Orange sea attacks on fortified bases and discuss preventative measures for the future.

BOMBARDMENTS:

During the Russo-Japanese war, the Japanese ships bombarded Port Arthur five different times, but in no case were the shore batteries the main objective. Their objective was either the ships and material inside the harbor or ships operating outside under cover of the coast batteries. All of these bombardments were at long range from the coast batteries or from positions upon which they could not bear. Observing ships were stationed to report the results of the fire. Only a slight damage was done to ships in the harbor and to material ashore. After the first three bombardments, when the Russian gunfire became more accurate and all bombarding positions were endangered by gunfire or mines, the Japanese did not employ their major ships in such operations. But they did use their capital ships for bombarding so long as they could do so in safety. When conditions changed, less valuable ships were employed, but with care, as the failure to afford naval support to the army in its assault on Takushan showed.

At the present time capital ships, where fire results can be observed, can bombard large targets effectively at a range of about 18,000 yards. On account of the higher velocity of their guns, they can do this safely even when opposed by coast defense guns of the same calibre at the same range. To render bombarding dangerous to an enemy (and make use of the inherent advantages of coast defense guns - accuracy of fire and great protection), it is then necessary to emplace the coast guns in advance of the area which they are designed to protect.

If the harbor is a salient harbor and the conformation of the land forming it precludes the placing of the batteries very far in advance of the harbor, great range for the batteries will be necessary to render a bombardment of the har-

bor dangerous to an enemy. The harbor may also be formed so that an enemy may choose a bombarding position at any point throughout a wide arc. In that case the advanced batteries would be exposed to fire from the flanks and rear unless additional batteries were constructed to prevent it. In order that a reasonable number of guns may cover the necessary water area and adjacent coast line and be adequately protected from all points, part of them, at least, should be mounted in turrets so situated as to have practically an all round arc of fire. If, on account of the depth of water off the harbor, mines cannot be used to prevent an enemy attaining a bombarding position the work must be entirely performed by the heavy guns and mortars and the floating defense (Torpedo Craft).

As to mortars, while they should never entirely replace guns in the main defense it will generally be found that by reason of their cheapness and extreme range (19,000 yards) the use of a certain number will conduce to both economy and efficiency.

TORPEDO ATTACKS:

The Japanese torpedo craft were very active during the late war, sometimes operating in very bad weather. Time and again they dashed up to the entrance of Port Arthur and discharged torpedoes at ships lying at the outer anchorage or in the entrance., The net results of their attacks were small, due, it is said, to the short range of the torpedo and to the difficulty in estimating ranges in the face of gunfire and searchlights. The Japanese did not use submarines in the late war but they doubtless will in future wars.

The defense necessary for the protection of harbors against torpedo craft attacks has already been sufficiently discussed.

Mine Attacks:

In the Russo-Japanese war, the Russians first demonstrated the value of mining operations. The Japanese then took it up on a large scale, using mines both defensively and offensively. The anchored contact mine was mostly used, the generally shallow water off the South Manchurian coast favoring the use of that type. During the course of the war, 62,000 tons of naval shipping (Russia 22,000 tons, Japan 40,000 tons) were destroyed by mines, and much more damaged. Both belligerents laid hundreds of mines off Port Arthur, and finally sweeping operations were absolutely necessary in order to approach or leave the harbor in safety.

If the waters off the entrance of a harbor are favorable to mining operations and areas cannot be covered by rapid fire guns mounted on shore, then patrol boats and long range mortars (19,000 yards) must be depended upon to prevent these attacks.

Blocking Attacks:

During their late war, the Japanese made three desperate attempts to block the entrance to Port Arthur, and although the entrance is very narrow and the water very shallow, all failed. In these attempts the Japanese expended a total of 48,000 tons of merchant shipping and many valuable lives.

The best means of defense against this form of attack, as was proven at Port Arthur, are searchlights (to make navigation difficult), mines and rapid fire guns (large calibre).

Aerial Attacks:

During the Russo-Japanese war balloons were used extensively by the field armies of both belligerents for the observation of artillery fire and for reconnaissance purposes. None were used however, in or around Port Arthur either on land or

sea. The Russians could have used balloons to good advantage but they had none, and the Japanese found their use unnecessary on account of the good natural observation stations available.

Attacks from all types of air craft may be expected in future attacks on naval bases, both by land and sea, but until air craft are further developed their operations will probably be confined to fire observation and reconnaissance work. Artillery and machine guns of the mobile land defense may be depended upon in most cases to frustrate such operations.

It is probable that in future wars the bases of the United States will be liable to all the forms of sea attacks here mentioned. Both Black and Orange possess mine and torpedo craft in superior numbers; both have a large number of merchant ships available for use in making blocking attacks and in attacking mine and boom defenses; and finally, both are keeping abreast of the times in regard to aerial warfare and will doubtless have efficient aerial armament when war comes.

Although the exact magnitude of the sea defense of a base will depend upon the natural characteristics of the harbor, the elements of which the sea defense should consist and their approximate proportions can be determined from the foregoing considerations. In view of those considerations we conclude that the sea defense of the bases of the United States should consist of the following:-

Fixed Defense:-

(a) Large calibre guns and mortars in sufficient numbers to make bombardments by capital ships dangerous.

(b) Large calibre rapid fire guns in ample numbers to prevent torpedo attacks, protect the mine and boom defenses, and supplement the main de-

fense.

(c) Mines, laid so as to be effective against torpedo craft and merchant vessels.

(d) Booms and nets to provide for security against torpedoes.

(e) Searchlights (disappearing) of great power, to provide for a most efficient defense at night, the most probablt time of attack.

Mobile Sea Defense:

In addition to the "fixed" sea defense there must also be a floating defense. As one often hears widely diversified opinions expressed as to the proper magnitude of this form of defense it is deemed expedient to discuss the subject somewhat before making definite statements.

A certain amount of floating defense is necessary for the security of any base; a considerable amount may be desirable. In the case of small island positions, where all attacks (land or sea) must be made by way of the sea, torpedo and patrol craft will have the widest employment and may be necessary for an economical defense. For notwithstanding the costliness of naval material this defense can be economical. All types of vessels peculiarly fitted for the defense of bases (torpedo craft and vessels carrying rapid fire guns) become, through age or rapid development of type, of small value for the performance of duties connected with the main fleet operations, they can be used to great advantage and with best efficiency in the defense of bases. Any nation with a large navy will always have such vessels. But one thing should be remembered:- That where a reasonable fixed defense can be made to serve the purpose, no vessels of reasonable value in major fleet operations against enemy floating naval power should be tied up in a base defense. As an instance of this, there are

the monitors of the United States. These are generally considered as fit only for the passive defense of harbors. As a matter of fact, these vessels will be of great value in fleet operations. They form an ideal escort for submarines for they can proceed on their way undeterred unless confronted by capital ships. And that capital ships should engage the monitors supported by submarines is greatly to be desired. If the base system of the United States is properly extended, the monitors might also be able to exercise an important influence in fleet actions.

In general, the strength of the mobile defense required for the defense of a base will depend upon the mission of the defense and upon the powers and limitations of an economical "fixed" defense. In certain cases additional sea strength may be required and new construction necessary for economical reasons. Of course, new construction will generally be necessary in the case of mine planters, aero boats, and other such craft which have as a primary mission the defence of bases. But the construction (as well as the assignment) of efficient fleet units for the defence of permanent bases will only be warranted in very exceptional cases.

From these considerations we conclude that the mobile sea defense should include the following vessels:-

(a) Gunboats and torpedo craft (surface and submarine) in very limited numbers, to patrol adjacent waters, aid the land defense in preventing landings, and generally supplement the sea defense.

(b) Mine planters to establish and maintain mine fields.

(c) Aero boats to execute reconnaissance.

(all to be old construction when possible)

Such are the rules which should govern the sea defense of the naval bases of the United States. We will now proceed to consider the land defenses of those bases.

LAND DEFENSE

The main object of the land defense of a base is to protect the fixed defense batteries; but it must also cover all objectives of any enemy which cannot be covered by those batteries.

If it is the aim of the enemy to capture the harbor for his own use, it will be necessary for him to completely reduce the sea coast batteries and all that part of the land defense that bears on the harbor. If the enemy's aim is simply to destroy the material in and around the harbor or to deny the use of the harbor to the United States fleet, it will only be necessary for him to secure and maintain a position on land from where siege guns can be brought to bear on the objective. Siege guns may be used effectively at a range of six miles. The bases proposed are situated in small islands and are thus near to available landing places on the islands. Therefore, if an enemy once gained a foothold ashore he might have to advance only a very short distance in order to gain his mission. Moreover, it is likely that the enemy force would be in such numbers that only an extremely large defending force could check it as it would be necessary for the latter to occupy a long line of land defense. For these reasons, together with the fact that in all cases the coast line is so favorable to the defense and so unfavorable to the offense, the governing factor in the land defense of all the bases should be the necessity of preventing a landing.

An examination of oversea expeditions and landing op-

erations of Black and Orange naturally follows:-

German Overseas Expeditions and Landing Operations:

Up to the time of the Boxer rebellion in 1900, the Germans paid but little attention to the employment of regular land forces overseas.

The few colonies which Germany possesses are, with the exception of Kiou Chau, which is garrisoned by about 2000 Marine Infantry and Artillery, garrisoned and policed by Colonial troops, about 10,000 in all, partly German and partly native and officered by German officers. These troops have generally sufficed for the suppression of colonial troubles which have arisen from time to time.

However, upon the outbreak of the Boxer Rebellion, the Germans felt that their interests in the Orient required the presence of a considerable force of troops and this necessitated the dispatch of a detachment of regular home forces.

A mixed force of about 11,000 men was first transported followed by a reinforcement of about 7,500.

The transportation of such large numbers of troops across the ocean was a new experience for Germany. There were no preparations nor precedents, everything had to be improvised. The result of this was demonstrated by the following:

(a.) Upon the arrival of the expedition at Taku considerable difficulty was experienced in the disembarkation owing to the lack of proper water transportation. The German navy made every effort but could not secure lighters. It was first intended that the disembarkation should take place at Tsingtau, alongside the wharves, and

only such equipment as was required for that operation was carried on the transports.

(b) Some of the organizations were delayed after disembarkation on account of not being able to get at their field equipment. This was caused by the government sacrificing warlike loading to hasty departure.

(c) Some of the animal transports did not arrive on time. Considerable difficulty was experienced in breaking and training the animals, which were transported from nearby countries.

(d) The expeditionary force was not properly composed in that only a small detachment of cavalry was included. The terrain of North China is especially adapted to cavalry operations and the want of mounted troops was badly felt during the campaign.

(e) Military observers stated that the troops were poorly equipped as to clothing, etc., for service in China.

The expedition arrived in China only in time to take part in the aftermath of the rebellion - - in punative expeditions - - and little can be gathered from that service as to its efficiency as a fighting unit. It is known that the force was not in a conditions to take up a rapid offensive upon disembarkation, and being recruited from widely spread organizations and from the landwehr was probably much below the accredited German standard in unit

efficiency.

The next oversea expedition launched by the Germans was that sent to German Southwest Africa to aid in the suppression of the Herero revolt which broke out in the latter part of 1903.

The colonial troops proved unable to handle the situation and a first expedition of about 700 mixed troops were dispatched in January, 1904.

Reinforcements were subsequently forwarded by detachments and by the time the insurrection was finally quelled, in July, 1905, a total of 15,734 men and 13,000 animals had been transported to the colony.

The details of the transportation of the troops, animals and supplies are not known. At first much trouble was experienced in disembarkation operations at Swakopmund owing to the heavy sea, poor harbor facilities, and the lack of preparations for the work.

During the campaign the Germans met with many reverses due principally to the following reasons:

(a) The forces lacked cohesion which is characteristic of improvised units.

(b) Duality of command; the Commanding Officer of the Expeditionary Force and the Commandant of the Colony working at cross purposes.

(c) The expeditionary forces were composed of volunteers from many different organizations and were not properly organized or fully equipped until their arrival on the scene of action.

(d) The Germans, both leaders and men, were inexperienced in tropical warfare and in oper-

ating in a closely wooded and rough country.

(e) They attempted movements by separate columns in a close country where any unlacked for circumstance may destroy all coordination.

(f) They were pitted against an extremely mobile and determined enemy that had a thorough knowledge of the country.

(g) The troops suffered much from tropical diseases.

The Herero campaign was followed by operations against the Hottentots, but as they were really a continuation of the former campaign little of interest is to be derived from a study of them.

This campaign is the last instance to date of the employment of German regular land forces oversea.

It is evident from a study of the expeditions here summarized that the Germans had not studied the science of oversea expeditions and landing operations to any great extent. In both cases they were ill-prepared; the expeditionary forces were improperly composed and equipped as originally conceived and they were forced to learn by experience the forces and equipment and the mode of warfare best adapted to the enemy and the terrain in which they were operating.

In neither case were the forces in a fit condition to assume a rapid offensive as an efficient fighting unit upon landing; and this is most necessary in landing operations on hostile shores.

So far as is known at the present time Germany has no force specially formed, organized and trained in landing operations, unless the home detachment of Marine infantry and

artillery, numbering about 1,400 officers and men, can be considered one; nor has she given her forces in general any special training in that line. One or two reports have been published in the last few years regarding landing maneuvers of small mixed detachments on the open coast in the North Sea, but these have not been verified.

However, Germany has doubtless profited from her past mistakes in oversea warfare (as is the German custom in things military) and has taken some measures to avoid them in the future. She has also doubtless profited much by recent Japanese operations. It is probable that, especially in great wars when conditions will be such as to permit her employing all units of her vast army, her expeditionary forces will be fairly efficient considering their inexperience.

Japanese Oversea Expeditions and Landing Operations:

Japan had her first experience in oversea operations during the Chino-Japanese war. Her operations were very successful. In fact, the capture of Wei-hai-wei has often been cited as a model for such operations. Her success was due to thorough preparation. Thus experienced, and again thoroughly prepared, Japan, during the Russo-Japanese war, embarked, transported, and disembarked her expeditionary forces with a dispatch and ease that had never before been known. All foreign observers were united in praise of the thorough cooperation of the sea and land forces, the excellent landing organization, and the efficiency of the personnel and materiel for the work in hand.

Most of these operations were carried out under unfavorable conditions. The coasts of Korea and Manchuria are not adapted to landing operations. The mountains being near the sea, the coast is generally steep. The adjacent waters are shallow, the range of tide is great, and the ebb tide

uncovers vast mud flats. As a consequence, transports cannot generally approach within three miles of the coast and sometimes small boats cannot land, thus necessitating the construction of landing stages or forcing the men to wade through long stretches of mud and water to gain the shore. Dalny was the only landing place of the Japanese where there were any dock facilities. They carried out disembarkations at night as well as day and often under very bad conditions of sea and weather. It may be truly said that during this war the Japanese experienced almost every difficulty that landing operations can develop.

The Japanese being past masters of the art of secrecy and of the ruses of war, and the expanse of available coast line being so great, their landings were generally entirely unopposed. Their general procedure was to make reconnaissances along a stretch of coast with gun boats and mine sweepers. These were partly feints. When this was completed, and the sea communications appeared reasonably safe, the transports were dispatched direct to the point selected and the disembarkation began. Marines, thoroughly trained in landings, were always disembarked first as a temporary covering force.

When the transports were once in a position the disembarkation was carried out with great rapidity. Each transport carried all the materiel needed for the landing, and coolies to handle it. The troops and materiel were transported from ship to shore in sampans or small flat bottom lighters. These held from 30 to 100 men and drew not more than two feet when loaded. Each sampan or lighter when filled dropped astern where they were lashed two abreast and formed in trains of from 5 to 10 each. When a train was made up it was towed in near the beach or landing stage and cast off. Coolies then sculled the boats to the landing.

Some idea of the rapidity with which this work was done may be gained from the following summary of the landings at Chemulpo and Alkova:-

Landing of the advance force at Chemulpo, Feb. 8, 1904:-

Two transports, carrying about 2,500 men and a few horses and anchored about three miles from the beach, were discharged between the hours of 6:15 p.m. and 3:00 a.m. The landing was effected at an old jetty in the harbor. Troops and materiel were transported from ship to shore in sampans, each holding from 30 to 60 men or 5 horses and 10 men. The sampans were towed in trains of from 5 to 10 each by steam launches. The weather was favorable; landing unopposed.

Landing of expeditionary force at Alkova, Saghalein, July 24, 1905:-

The transports were anchored off a sand or shingle beach where they could discharge simultaneously. There were ten steam launches available and each transport carried two or three small lighters (approx. 9 ft. x 36 ft.), each holding about 100 men. The infantry transports were emptied inside two hours. Weather favorable; landing unopposed.

Japanese landing methods are the result of long experience in

disembarking field armies at restricted landing stages on the South Manchuria coast. They are especially favorable to the rapid landing of a large number of men simultaneously on a limited beach space.

There is no record of the Japanese ever having landed in the face of a determined prepared enemy. They have so conducted their past operations that it has never been necessary. But, if it is necessary in the future, they will make the attempt if there is a reasonable chance of success. It is true that with modern artillery and terrain favorable to the masking of guns and troops on the side of the defenders, and only restricted landing places available to the attackers, it would be a desperate undertaking and could only be carried out at a great sacrifice. But the Japanese will make the sacrifice, for their past operations plainly show that where it is possible to succeed, the only limit to losses is the one set by success.

If the past tactics of the Japanese may be taken as a criterion, it is probable that for several days prior to attempting a landing the entire coast line will be reconnoitered by cruisers and all landing places bombarded in an endeavor to locate and develop the strength of the defense. The real attempt at landing, accompanied by several feints, will be made at dawn and will be supported by a heavy fire from the naval escort.

Although the Japanese will doubtless have good local knowledge of the various landing points, it is not likely that they will attempt a landing in force at night when the coast is forbidding. They will, however, probably attempt to land small parties at different points with the idea of destroying materiel or of securing temporary covering positions for a landing in force at dawn. Past events show that a limited number of men, thoroughly trained in landing on a dif-

ficult coast and possessing local knowledge, can effect a landing at night under very adverse conditions.

To sum up:-

In case of war with the United States, both Black and Orange will have strong land forces, otherwise unemployed, with which to support naval operations. The bases of the United States, especially those in the Pacific, will be liable to land attacks by efficient, determined forces in great strength.

General Scheme of Land Defense:-

As the purpose of the defense is to protect the base (station and anchorage) for the use of the fleet during the entire war, the defense should be such as to endure the most stubborn resistance for the greatest length of time. While all efforts should be concentrated on holding the main line of defense, provision should be made for further defense in event of that line being driven in. In other words the occurrence of the unexpected should not result in the fall of the point protected but merely in the fall of a portion of the defenses. The enemy should be forced to take succeeding lines and finally a stronghold. The stronghold should be around the main elements of the sea defense, for until the latter are destroyed the enemy cannot use the harbor for his own fleet, and the defenders will have a foothold in case an opportunity for recapture of the fallen position should present itself.

In view of these considerations, the defense should include a Main Line (first line), and provision for a Second Line and Stronghold, the latter two positions to be occupied in force only in event of the defenders being forced to retire from the line in advance.

Main Line:

This line should follow the seacoast and defend all possible landing places on the island; and it should be assumed that an enemy is likely to land at any point where a landing is possible. (While weather and sea conditions may sometimes permit of the withdrawal of the major portion of the defense from one-quarter and concentrating it in another, yet these conditions should not be counted on in planning an initial defense).

The disposition of the armament and personnel in the Main Line should be made with the following objects in view:-

(a) To delay the transportation of troops from ships to shore

(b) To deliver a sudden volume of shrapnel, machine gun and rifle fire on the enemy as he is landing, or about to land

(c) To contest the advance of an enemy inland from the moment of landing

(d) To protect the defenders from fire from the sea

(e) To ensure a safe retirement of the defending force to the Second Line.

Included in the Main Line should be the following:-

(a) A line of portable searchlightspositions covering the main landing points. These positions should be so located as to not only enable the defenders to detect an approach of landing parties at night, but also to render navigation as difficult as possible. The searchlights should be distributed in pairs, one in position and one in the infantry position to

rear. The searchlight best adapted for this work is believed to be the 36" portable searchlight (with motor traction).

(b) A line of well fortified and masked infantry and machine gun positions within effective range of and flanking the beaches where landings may be made; so located when possible as to afford mutual support. Also positions to the rear from which an effective fire may be brought to bear in support of those in front and on probable initial covering positions which the enemy might attempt to occupy directly upon landing. These positions should be prepared for a strong defense. The widest use should be made of obstacles on the fronts of positions, at the beaches, and in the water approaches to the beaches.

(c) A line of defiladed field or mountain artillery positions (about 1000 yards in rear of infantry positions) from which an effective fire may be brought to bear on landing places and approaches thereto, and with alternative positions near at hand from which a direct fire may be brought to bear on those objectives and on the fronts of infantry positions. In case the country is close and there is good protection the lighter guns might be pushed well to the front, even to the beach, at times.

Mountain artillery is especially well adapted for this work in the island positions of the United States. The new mountain gun is practically as effective as the Field Artillery piece and is much more mobile. Its carriage has a narrower tread, it is well adapted to motor or pack transportation, and can be manhandled if necessary.

(d) A line of defiladed siege artillery (guns and howitzers), with alternate direct fire positions for guns, somewhat retired from the field artillery positions and near the main "belt" road, from which fire may be brought to bear on transports within range, landing places and their approaches, and on the fronts of infantry positions. The piece best adapted for this purpose is believed to be the 4.7" siege gun. It has a range of about 7,500 yards and is sufficiently mobile. The howitzer is not so effective (primarily) as the gun, but a certain number should be employed as they will be invaluable for use in case an enemy gains a foothold on shore. A howitzer of at least six inches in calibre should be provided.

(c) A line of section supports, in or near fortified positions, so located as to best support the positions in front and each other, and contest the approaches to the Second Line in case retirement becomes necessary.

(f) A general reserve so located as to best support the sections, or cover the retirement of the advanced forces and occupy the Second Line or Stronghold in case it should be necessary.

The apportionment of forces to advanced positions, supports and reserves should be governed by the following considerations:-

(a) The force necessary for the initial defense of the various landing points in case the enemy attacks under favorable conditions;

(b) The time necessary for the supports and reserve to act;

(c) The provision of reliefs for the forces in permanently occupied positions.

Second Line:

This line, which should be prepared for occupancy in case it is necessary to retire from the Main Line, should be so located as to prevent effective bombardment of the station and anchorage by siege guns. In case a good defensive line is not possible at the required distance from the harbor and station on account of the weakness of the defenders, then a line nearer to the harbor and station with advanced positions should be held. By holding the latter, (even to sacrificing the garrisons) effective bombardment by the enemy will be rendered difficult, if not impossible, and the advance of the enemy will be greatly delayed.

Stronghold:

A strong position, containing important elements of the sea gun defense (placed there with this object) should be prepared to be occupied as a last resort. The holding of this position will not prevent the destruction of material at the naval station nor protect the harbor from the land side but it will deny the use of the harbor to the enemy, which is very desirable.

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The main item of expense in base defense is maintenance of personnel. It costs the United States about $1,000 per year to maintain one infantryman. Materiel is comparatively cheap. Therefore, in the defense of bases, materiel (guns, wire communications, transports, etc) should supplant men wherever possible. For the same reason the widest use should be made of native labor and material obstacles.

Communications:-

A system of defense of the nature proposed cannot be effective without the most quick and thorough cooperation. This is very important in the case of the island positions of the United States as the defending forces must by necessity be small and the mobility of transports favors the execution of numerous feints and sudden serious attacks. It is then most necessary that such a system of first class roads be constructed as will enable troops to concentrate at assailed points with safety and dispatch, and that a complete system of wire communications be installed.

Roads:-

In planning the road system, in addition to ensuring rapid communication between various parts of the defense, the following points should be considered:-

(a) Concealment from view and protection from fire from the sea.

(b) Facility in executing counter attacks.

(c) The safe retirement of the defenders to the Second Line and the covering of the roads leading thereto by the advanced positions of that line.

The system, in general, should consist of the following roads:-

(a) Radial roads leading from the General Reserve to the Section Supports.

(b) A "belt" road extending around the Main Line in rear of the defensive positions.

(c) Spur roads leading from Section Supports to defensive positions.

(d) Connecting roads between the Main Line system and the Second Line.

(e) A beach trail around the island for the use of patrol.

Wire and Visual Communications:-

The particular necessity for rapid cooperation renders necessary two systems of wire communication - one for command purposes and one for artillery fire direction. To ensure good service under all conditions, these systems should be double and the parts near the coast line securely protected against fire from the sea, and from small raiding parties which may effect a landing.

A system of visual communication in readiness for operation is required for use of the cyclist patrols and for general use in case the wire communications are interrupted.

Transportation:-

Regular animal transport is very costly in the tropics as animals do not thrive well and the cost of maintenance is great. Experiments carried out in recent years show that even in this country, provided that the roads are such as to allow of its free use, motor transport is more economical. It has been found that one motor truck, with a load capacity of about 3000 pounds and a high speed of about 12 miles per hour, can do the work of two escort wagons. The main objections to motor transport for military use in the past have been its mechanical unreliability and its inability to traverse bad or hilly roads. In later types of motor transport, these objections do not apply to nearly the same extent and all nations are now supplementing their animal transport with it.

It is believed that this form of transport is well adapted for use in the island positions of the United States and should replace animal transport entirely. A proper system of military roads will permit of its free use all the year round and under

war conditions. It will also be more rapid and more economical. There will be no difficulty with the fuel supply as the Navy will have to keep a large reserve at bases for its own use. Motor lorries may be used not only to transport supplies and ammunition but, parked at the reserve and support stations, may also be used to transport guns and men to positions.

Mobile reserves are of the utmost importance in this case and therefore any means by which their mobility can be increased should be adopted. For the same reason also part of the infantry at the reserve and support stations should be equipped with bicycles. With reliable means for the rapid transportation of guns and men at hand, the forces in the advanced positions could be considerably decreased and the reserves increased. This is very desirable.

Of the positions proposed as oversea bases of the United States (Samana Bay or Culebra, Pearl Harbor, Harbor of Apra, and Polillo), Pearl Harbor is now being fortified and the defenses necessary for the security of the Harbor of Apra have been outlined recently by a Joint Board composed of officers from the Army and Navy War Colleges. So far as is known nothing has been done officially in regard to the securing of Samana Bay and Polillo. It is therefore with the security of the last named points that we are especially concerned at the present time.

A careful study has been made of these two positions in the light of existing information and the following conclusions arrived at as to the defenses required:-

Samana Bay:-

Total armament and personnel required for Fixed Defense:-

Armament: 4 14" guns
6 6" "
12 12" mortars
5 60" searchlights
Mines, booms and nets.

Personnel:- 7 companies of Coast Artillery, about 35 officers and 750 men.

Vessels required for Mobile Sea Defense:-

4 gunboats
4 torpedo boats
4 submarines
1 mine planter
4 aero boats

Total armament and personnel required for Mobile Land Defense:-

Separate Brigade Headquarters.	15	Off. and men.
3 Regiments Inf. (F.S.F. strength) with 76 machine guns,	4653	do
Mobile Artillery:		
16 4.7" siege guns		
8 6" howitzers		
36 3" mountain guns		
20 portable searchlights (36")		
Coast Artillery for manning mobile artillery,	1100	do
1 company engineers,	168	do
1 company signal corps,	104	do
Sanitary Troops	150	do
	6,190	Off. and men.

Polillo (Burdeus Bay):-

The total armament and personnel required for Fixed Defense:-

Armament: 8 14" guns
12 6" guns
8 12" mortars
10 60" searchlights
Mines, booms and nets.

Personnel:- 11 companies of Coast Artillery, about 50 officers and 1175 men.

Vessels required for Mobile Sea Defense:-

2 gun boats.
4 torpedo boats.

3 submarines.

1 mine planter.

4 aero boats.

The sea defense here proposed is that required in the light of meagre information. Any data that further surveys may bring out will not make a more extensive defense necessary but on the contrary will very probably warrant the reducing of the defense considerably.

Total armament and personnel required for the Mobile Land Defense:-

Separate Brigade Headquarters,	15	Off. and men.
3 Regiments of Infantry (F.S.R. strength) with 90 machine guns,	4653	do
Mobile Artillery:		
12 6" howitzers		
18 4.7" siege guns.		
44 3" mountain guns.		
Coast Artillery for manning mobile artillery.	1300	do
1 company Engineers, with 26 portable searchlights (36")	168	do
1 company Signal Corps,	104	do
Sanitary Troops,	175	do
Total,	6,415	Off. and men.

THE SECURITY OF ADVANCE BASES AND ADVANCED BASE OPERATIONS.

It has been repeatedly stated that victory comes to those who most precisely penetrate the haze of the wars to be and prepare for what they see. Prior to the initiation of any act of war preparation, however small, an effort must be made to pierce the obscurity of future operations, for what is to be discerned there forms the only sound foundation for that act. But, unfortunately, there is a boundary to clear vision in these matters. Beyond this boundary the unforeseen circumstances of the moment hold sway and all things can be outlined but dimly. It is mainly within this shadowy area that advanced base operations lie. Such being the conditions, it is most important that when we take up the question of advanced base operations we do so from an effective viewpoint. This it is deemed we have by virtue of previous base studies. And it is from this viewpoint that we will, in this paper, endeavor to distinguish an outline which will serve as a basis for specific preparations for advanced base operations and subsequently indicate the preparation necessary.

In the beginning it will be well to reiterate certain considerations affecting advanced bases which were brought out in the first paper on naval bases. These considerations were stated as follows:

"But permanent bases alone cannot supply the wants of the fleet under all conditions. However complete the system may be it will generally be necessary during war to occupy additional points as bases in order to execute the conception of naval war. These points may be those which in peace time were under foreign control, or they may be points either in one's own or foreign territory which it becomes necessary or desirable to occupy by virtue of the unforeseen circumstances of war.

"It being impossible to develop these points in time of peace, it is therefore essential that when a fleet is pre-

jected from the permanent bases into new areas it should carry with it the elements of a base. This forms the fleet train of fuel, supply, and repair ships, which carry as far as is possible, those things necessary to fleet mobility and is in reality a floating base. With a secure point of refuge, the train, in an improvised way, executes all the functions of a permanent base, by serving as a fuel, supply and repair depot, a rendezvous for sick and wounded, and a center of intelligence. Such bases are the advanced bases of the fleet and are occupied only in war and then only so long as the particular military situation demands.

"As the presence of a train with a fleet at sea imposes a tactical disadvantage, it is very desirable that when a fleet enters a disputed area the train be secured in the selected port as soon as possible. The sooner this is accomplished the sooner the train will be able to exercise its functions of maintenance and supply and the fleet be able to pursue its operations with freedom and efficiency. To effect this there must be carried with the floating base or train a military force adequate to seize and secure the port and so constituted as to be able to perform its work without delaying fleet operations any more than is absolutely necessary. For this work the Advanced Base Outfit is primarily intended.

"The location of an advanced base is governed generally by the same considerations as those which govern the location of a permanent base. However, there are certain considerations which exercise increased influence in the selection of the former which should be noted. They are as follows:-

A. Proximity to permanent bases. The resources of an advanced base must necessarily be limited and it is desirable that a permanent base be within reach in case of emergency.

B. Security of communications. The efficiency of the advanced base depends entirely upon constant replenishment by floating transport. Its location should therefore be such

as to expose lines of communications to permanent bases as little as possible.

C. Security from attack. As the defenders are limited in power by the conditions under which they operate, it is necessary that the fleet, by its operations, cover the base from an attack in force.

"As a rule, the fulfillment of the requirements for a base are not so important for advanced bases, but it will depend to a great extent upon its distance from permanent bases. As the distance from the permanent bases increases the more the advanced base will have to be depended upon, and, therefore, the more serviceable and secure it should be.

"The necessity of advanced bases to a fleet makes their denial to an enemy, especially one operating at a distance from permanent bases, of great importance. The projecting of a fleet into a disputed area denotes superiority in naval strength, in the mind of its commander at least. If that fleet is operating at a distance from its permanent bases and cannot seize an advanced base, it must withdraw from that area. As a rule, it will be impracticable to deny all available points as there will be a number of them which will serve the purpose, but it may be practicable to deny those points so situated relative to one's own bases and to probable enemy objectives as to be of greatest value to the enemy. These points should be held if possible. Such a procedure will not only complicate enemy operations, but will lengthen the period in which the inferior force may operate with torpedo and mine craft to reduce enemy superiority, operate against his line of communications, or catch the enemy main body at a tactical disadvantage."

The principles governing the defense of permanent bases have been outlined in another paper. The principles governing the defense of advanced bases are identical, but owing to the conditions under which the defending force must operate they

cannot be applied to the same degree. This, however, is counterbalanced by the fact that under normal conditions the advanced bases will always be protected to some extent by the strategical dispositions of the fleet. While the attacks on advanced bases will be of the same nature as those on permanent bases the presence of the fleet will prevent their occurence with such frequency and in such strength.

Normally, the projecting of a fleet into a disputed area and the establishment of an advanced base denote superiority, or at least equality of naval strength. The fleet may therefore be depended upon to keep the main body of the enemy occupied and thus prevent an attack in force whether by land or by sea. Moreover, until the sea contest is decided, it would be dangerous for an enemy to detach a strong force for this purpose, and even if he did so it would be extremely wasteful to hazard it in a contest with shore defenses (even intermediate calibre guns) unless the results to be obtained thereby were very great. If a nation has succeeded in establishing a complete system of bases in time of peace, it is safe to say that no compensating results would be gained by such operations for in that case the capture of an advanced base would only effect a temporary setback in the operations and would not exercise any vital influence on their ultimate outcome.

For these reasons it may be generally concluded that advanced bases will be subjected only to raids by cruisers, torpedo craft and blocking vessels, combined probably with land attacks. As the landing operations would have to be executed with great secrecy and rapidity, the landing force would be small, probably composed of not more than 10,000 men. It is not likely that cruisers or other ships of value would attempt a close attack on the sea defenses, but would confine their attacks to long range bombardments with the idea of keeping the sea defenses occupied while a landing was attempted. Determined attacks by torpedo craft and blocking vessels are to be

expected at night however, because an enemy will endeavor mainly by torpedo operations to lessen his opponent's naval superiority and thus prepare the way for a favorable fleet action.

The foregoing statements apply to advanced bases in general. In the consideration of advanced bases from the standpoint of the United States one is again confronted by her special position with its two distinct situations -- one in the Atlantic and one in the Pacific. Only through a study of these two situations with particular reference to advanced base operations can definite conclusions be arrived at as to the peculiar functions of the force charged with that work and thus the personnel and armament with which it should be provided for its successful action. All operations connected with bases are considered, as the execution of all will probably fall to the same organization (The Advanced Base Force), and such consideration is necessary in order to arrive at economical conclusions.

A review of the situation in the Atlantic and Pacific here follows:

ADVANCED BASE OPERATIONS IN THE ATLANTIC:-

The advanced base operations in the Atlantic will be somewhat abnormal. The United States will be inferior in naval strength. She will therefore act on the strategic defensive, and, with Panama and Samana Bay (or Culebra) secure, will carry out all operations in close proximity to permanent bases. This fact may render advanced bases unnecessary, or, if they are occupied, of comparative unimportance. However, this cannot be determined with absolute certainty as the operations of the United States fleet will depend to a large extent on enemy movements.

If Culebra cannot be made suitable for use as a permanent base and is therefore not secured as such, then it should by all means be held as an advanced base throughout the entire campaign. By reason of its position, it will be of great value

as a pivot of operations for the entire fleet during the first phase of the campaign and for small craft -- scouts, destroyers, submarines, etc., -- at all times. In any event Culebra should be denied, not only to prevent an enemy from using it as a base, but for the reason that it should always be in the possession of the United States at the end of a war.

Culebra is a small island position and can be held strongly by a small force. Being United States territory, it can be fully prepared for occupancy and defense in time of peace. (This work, by the way, would form the best of peace training for those forces which will be assigned to the defense of advanced bases in time of war). Although Culebra will be open to attacks in force, as in the case of the permanent base in the Caribbean, the enemy will not have the same incentive to attack. When attacks in force become possible there will be but little materiel there to destroy and operations intended to deny the use of the harbor to the United States or to completely reduce the place would be so costly as to be unprofitable.

The desirability of denying certain points in the Caribbean to the enemy fleet have been mentioned. It is probable that if other advanced bases, besides Culebra, are found to be necessary that some of these points will serve the purpose, and a nucleus of the defense will have been already installed. While some of these positions could not ordinarily be easily defended as advanced bases yet it is not likely that it will be a difficult matter in this case. The occupation of further advanced bases will signify that the United States has been more or less successful in the first phase of the campaign and is pushing offensive operations. At this stage of the contest the enemy will be fully occupied and he will not be in a position to make attacks in force on bases with naval materiel nor to support the overseas transport of land forces for that purpose, granting that the importance of the bases warranted it, which is improbable.

It is not probable that the initial occupation and prepara-

tion of the Caribbean points for defense will be opposed to any great extent. Guantanamo and Culebra are situated in United States territory. The other points which it is desirable to occupy are in foreign territory, but it is believed that if proper representations be made to the nations concerned and the nature of the occupying forces (which would not be of sufficient strength to be considered a menace) be fully explained to them, there would be no opposition.

In the initial operations in the Caribbean, the Advanced Base forces will have at least one month in which to prepare their positions before being confronted by the enemy.

The foregoing are the main considerations affecting advance base operations in the Atlantic. These, in turn, are affected by the natural characteristics of the harbors occupied, but in this case this phase does not exercise a great influence in estimating the forces necessary for their execution. The harbors will not be secured by an enemy and therefore the United States fleet will probably be free to occupy any type of harbor it desires in so far as they are naturally available. Besides the Caribbean harbors mentioned there are numerous other harbors of all types which might serve as advanced bases for the United States fleet, for it will always operate in close proximity to permanent bases. This together with the fact that in this theatre of war it is particularly difficult to predict the trend of operations after the first phase (by reason of being forced to conform to enemy movements) renders any detailed study of the natural characteristics of the harbors (with the exception of Culebra and those harbors to be denied) of comparatively little value.

The general characteristics of Culebra have been commented on. Other harbors which may be occupied as advanced bases by the United States fleet will probably have the following general characteristics:-

(a) They will be situated in large islands, or

in the continental mainland.

(b) They will be retired from the sea.

(c) They will have comparatively narrow entrances.

(d) The entrances can be mined, but not the waters off the entrances.

Besides operations connected with the defense and denial of bases, the troops with the United States fleet in the Caribbean will probably be called upon to perform another form of operations -- the raiding of enemy bases.

The importance of a Caribbean base to Black will render this form of attack particularly effective. While lack of troops or enemy dispositions may render a strong raid impossible, such attacks should not be foregone. At least small parties can be landed at night to raid batteries, searchlights, etc., and thus keep the enemy in continual anxiety as to the security of his base armament and force him to keep as great a naval force as possible on the qui vive for its protection. These raids would be particularly effective if combined with attacks by torpedo craft.

In view of the foregoing considerations it may be concluded that the peculiar functions of the Advanced Base Force in the Atlantic will be to:-

(a) Defend Culebra (a small island position) as an advanced base for the United States fleet against all attacks.

(b) Deny harbors, suitable for use as advanced bases, to the enemy.

(c) Defend retired harbors (with narrow entrances) situated in large islands or in the continental mainland, as advanced bases for the United States fleet. Resist especially torpedo craft attacks.

(d) Raid enemy bases.

ADVANCED BASE OPERATIONS IN THE PACIFIC:-

In the Pacific, the United States will be superior in

naval strength and the war will be waged under more or less normal conditions so far as advanced base operations are concerned. There are, however, several points which it will be well to consider specially. They are as follows:-

(a) It is probable that all points suitable for use as advanced bases by the United States fleet will be denied in some strength. This will necessitate the Advance Base Force being prepared for the execution of opposed landing operations, and of attacks on denial positions similar to those proposed for the Caribbean region.

(b) The United States fleet will be operating offensively in enemy home waters and rapidity of operations will be an important factor in its success. The Advanced Base Force must therefore be so composed and prepared as to carry out its work with the greatest possible speed.

(c) The advanced bases will be subjected to torpedo attacks and land attacks in comparatively great strength, for the advanced bases must by necessity be located in close proximity to the great centers of enemy torpedo and land strength. This applies especially to the latter part of the operations when the advanced base will be moved farther from permanent bases (and therefore closer to enemy strength) and its security becomes of greater importance and more difficult to maintain. The Advanced Base outfit must be prepared to meet these attacks.

Such are the main considerations which particularly effect advanced base operations in the Pacific. In this case they, unlike the situation in the Atlantic, are strongly affected by the natural characteristics of the harbors occupied in the

consideration of the forces necessary for their execution. As stated, the harbors will be denied in more or less strength, and therefore the United States fleet may not choose the type of harbor it desires, one that is easily defensible or one that suits the advanced base armament with the fleet, but on the contrary, it must take what it can get.

The harbors in the Pacific which are most likely to be occupied as advanced bases are the following:-

Camiguin Island.

Coffin Bay (Newport), Bailey or Coffin Group.

Miyako Jima Anchorage, Meiaco Sima Group.

Nakura Wan and Ishigaki Hakuchi Anchorages.
Meiaco Sima Group.

Chim Wan Bay, Lu Chu or Okinawa Group.

Nakagusuku Wan, Lu Chu or Okinawa Group.

Nago Wan, Lu Chu or Okinawa Group.

Kerama Group Anchorage.

Iheya Group Anchorage.

Amami Group Anchorages.

The islands in which these harbors are situated are mountainous, the country is generally close, the roads are few and poor, and the coast lines are unfavorable to landing operations.

From a study of the data available it is found that a large majority of the harbors have the following characteristics in common:-

(a) They are located in small islands.

(b) They are more or less salient to the sea.

(c) They have wide entrances.

(d) The entrances to the harbors and the waters off the entrances are too deep for mining.

In view of the foregoing considerations it may be concluded that, so far as advanced base operations in the Pacific are concerned, the peculiar functions of the Advanced Base Forces will be to:-

(a) Execute opposed landings and attacks on denial positions.

(b) Defend open, salient harbors situated in small mountainous islands (with poor communications and close terrain) as advanced bases for the United States fleet. Resist particularly land and torpedo craft attacks.

(c) Perform all operations with the greatest rapidity.

Having arrived at more or less definite conclusions as to the peculiar functions of the Advanced Base Force in national wars, we are now in a position to determine approximately the nature of that force and the strength with which it should be provided.

THE DEFENSE OF ADVANCED BASES:-

This work is of greater importance in the Pacific than in the Atlantic and it is therefore the conditions surrounding the operations in the former region that should govern more particularly in the matter. The majority of positions which will probably be occupied as advanced bases are of the same general type as those proposed for permanent bases - small island positions. From the considerations affecting the defense of permanent bases, as outlined in a former paper, and from the information which we have regarding probable scenes of action we can make a fair estimate of the defense required.

The ideal defense for an advanced base would be that defense provided for it were it a permanent base supporting fleet activity under similar conditions. Of course, such a defense is impossible with an advanced base force by reason of the limiting circumstances under which it operates, but the aim should be to make it as near that defense as is possible.

Fixed Defense:

Heavy Guns:- By reason of the saliency of the harbors to be defended, the generally wide entrances to those harbors (some of which cannot be mined or protected by a boom and net

defense), and the attacks to which the harbors will be liable by capital ships, the main heavy gun defense should consist of direct fire guns of as large calibre as can be handled with reasonable dispatch - 6" if possible. They should be provided in ample numbers.

Torpedo and Barrier Defense Guns:- By reason of the harbor characteristics mentioned above and the attacks to which the harbors will be liable, the main gun defense must be principally relied upon for this work; smaller calibre guns will not suffice. Some 3" with aerial mounts should be provided for this use (when harbor characteristics are favorable) and for resisting aeriel attacks.

Barrier Defense:- If ships are not to be supplied with torpedo nets it is of vital importance that boom and net defense be provided and used wherever possible. Its use will save the mounting of some heavy guns and will provide greater security.

Both observation and automatic contact mines should be provided; the former for use in the main entrance channels and the latter for use in other waters. All mines should be laid so as to be effective against torpedo craft and blocking vessels.

Searchlights:- To support the main gun defense, upon which so much will generally depend, the largest portable searchlights should be provided -- especially for searching and illuminating lights. Smaller lights may suffice for immediate channel defense.

Mobile Sea Defense:

The mobile sea defense must be furnished from the fleet as required -- mainly from those craft which through service or war damage sustained are least valuable for major fleet operations. The fixed defense, however, should be such as to require as little floating defense as possible.

Mobile Land Defense:

The mission of the mobile land defense will be to prevent a landing. The defense should be carried out along

the same lines as that outlined for permanent positions of the same type. In this, however, there is one point which must receive special consideration, and that is that the advanced base force will have but very little time in which to establish or improve road and wire communications. This will exercise considerable influence on the mobility and coordination of the land defense.

Heavy Artillery:- The 4.7" siege gun would be the best type but more extended reconnaissances of position likely to be occupied in the Pacific may show that the nature of terrain, etc., would preclude its use. But if it can be used it should be provided, for it will not only be valuable for land defense but also for temporary sea defense while heavy guns are being installed. This also applies to the heavy howitzer which should be supplied in limited numbers as an auxiliary to the regular land and sea defense. Nearly all of the island positions will be small and these weapons installed, even in a fixed position, would cover a long stretch of coast line.

Light Artillery:- Considering the character of the work to be performed, the 3" mountain gun or howitzer would be ideal for advanced base defense.

Searchlights:- These should be provided for the covering of possible landing places. An 18" light at least should be provided.

Machine Guns:- These should be provided in large numbers as the nature of the defense will allow of their widest and most efficient employment. There should be at least one machine gun to every 50 infantrymen.

Communications:

With advanced bases, as with permanent bases, communications are of prime importance. However, on account of the time element, existing roads, in the main, will have to serve the purpose and wire communications of the most simple nature employed.

In the case of roads two things are essential:- (1) That the characteristics of the existing road system be known, and (2) that there be men at hand trained in the hasty construction of roads and trails. The system should be as near to that outlined for permanent bases as time and terrain will permit.

Field telephones and buzzers will have to be relied upon for wire communications. As such a system cannot be well protected nor absolutely relied upon, the wireless and visual systems should be most complete.

Land Transportation:

The transport question is not a very serious one in the case of a Caribbean campaign. At two points, Culebra and Guantanamo, communications, suitable for any type of transport, can be prepared in time of peace if desired. At other points, being in more or less friendly territory, it is likely that transport adapted to the country could be secured on the scene. In any event, proper transportation could soon be secured from the United States.

In the case of a campaign in the Far East, however, the transport question is a serious one. If animal transport is provided it will be necessary to keep the animals on board ship for at least two months. Unless ample exercise room is provided for them, and probably even then, they will be unfit for use for at least 5 days after landing -- or during the time when they would be most needed. Besides, animal transport is not only very expensive, but requires a great deal of tonnage to transport and supply it, and a large personnel to handle it. Animal transport should not be provided if another type of transport can be made to serve the purpose.

All of the islands in the probable area of advanced base operations in the Far East are small and are more or less populated. They should have good trail communications at least. Moreover, in the case of small islands, good communications are not so essential to an effective defense. In such cases the

major portion of the mobile land force will be located near probable landing places and can be supplied from the sea, in part at least. Distances will be short, trail communications will suffice for the movements of infantry and machine guns, and, as the stretch of coast line will be limited, the artillery will generally be kept in fixed positions.

It is probable that a type of motor transport suitable for use on rough and bad trails can be developed that will serve the purpose and experiments with this end in view should be undertaken. A serviceable type of motor transport, accompanied by men trained in the hasty construction and improvement of roads and trails, can probably be used under all conditions. It can be replaced or augmented by animal transport on the scene of action if animals are available and such action makes for efficiency.

For the transport of heavy material in the vicinity of harbors, material for skidways, portable railway, and specially designed trucks (adapted to man motor or animal traction) should be furnished.

Water Supply:

There are three sources from which this may be obtained.

(a) from the surrounding country;

(b) from the transports and train vessels;

(c) from distilling plants installed on shore.

A good natural water supply on the scene of action cannot always be found -- as at Culebra for instance. Nor is it desirable to place entire dependence on a floating supply, for it is, to a certain degree, liable to destruction. To cover emergencies, provision should be made either for the installation of a distilling plant on shore or for the construction of reserve reservoirs to be filled from the floating water supply immediately upon occupation.

THE RAIDING OF ENEMY BASES AND THE SEIZURE OF HARBORS FOR USE AS ADVANCED BASES:-

The best force for this work would be infantry with machine gun and mountain gun detachments.

The raiding detachments should be composed of men especially trained in day and night landing operations, night land operations, and in the handling of explosives. These men would form the covering party in the case of landings in force for the seizure of harbors for use as advanced bases.

THE DENIAL OF BASES:-

As the measures advocated in connection with the denial of bases are somewhat unusual the question will be considered at length.

Whenever an expenditure of funds is advocated for the securing of an overseas port for the nation's use in war, one argument always advanced is that of the value of denying the port to an enemy. With the American people, seemingly wedded to the passive defense, this is a potent argument and has doubtless been an important factor in the securing of appropriations. But while it may be the "open sesame" to an appropriation, it is not sound. The advantage to be derived from the denial of a port to an enemy should never, in any degree, be a factor in the selection of a naval base. If, after thorough study and investigation, a point is necessary to support fleet activity in certain waters, then the most suitable point for that purpose should be selected and secured for that reason alone. This is truth; it needs no supporting arguments. Besides, the mere denial of a base is an easy matter in most cases, requiring no appropriation for the performance of major operations on the surrounding terrain.

To deny a harbor to an enemy it is not necessary that the armament be such as to be able to sink every vessel that comes within its range of action, but only that capable of rendering the use of the harbor dangerous to vessels. A Commander-in-Chief would be somewhat annoyed if he found his anchorage covered even by rifle fire; if he found it covered by siege gun fire, it is

safe to say that he would not use it. For overhauling and refueling under the fire of high explosive shell (particularly effective against train vessels, the upper works of men-of-war, and mental tranquility) would be unbearable.

Therefore it is only essential that the denying force be in a position to cover the anchorage, entrance to the anchorage, or both, with siege gun fire when desirable. It is not necessary that the fire be of great volume nor that it be continuous -- far from it. All that is necessary is a few shots occasionally. An officer conversant with the ways of ships and men will have no difficulty in recognizing the proper moments for action.

The next and most important question is:- How are these siege guns to be so secured that, in the face of sea attacks from the fleet and land attacks from the troops carried with the fleet, their action will be ensured? This question will be answered by taking a concrete case -- Guantanamo Bay. This point is chosen because it is the only case in which there is sufficient information at hand on which to base an answer.

It is presumed that all are familiar with the general characteristics of Guantanamo Bay.

About 4000 yards west of Hospital Cay there is a knoll (about 175 yards in length, about 100 yards in width, and from 30 to 40 feet in heigth) surrounded by tidal flats. The field of fire from this point is clear (or can be cleared with very little labor) on all sides for a distance of at least 800 yards. Although there are points of approximately the same elevation within about 1000 yards, the nearest commanding positions are at least 5000 yards distant. All parts of the anchorage and entrance lie within siege gun range (7000 yards) of the knoll, and can, with the possible exception of the west half of the outer harbor which may be masked by the ridge back of Conde Beach, be observed therefrom.

I believe that this knoll can be so fortified and garrisoned as to resist any attack that may be made against it by a fleet

or by land forces accompanying the fleet.

The form of work proposed is a closed redoubt, with complete bomb-proof cover. As the reason for the work is the denial of the harbor, it must be so planned as best to protect and facilitate the action of the siege guns which make the denial possible. Provision must be made for handling the siege guns in the same manner as fortress counter-assault guns -- that is, for holding them in secure bomb-proof cover until time for firing and then running them on firing platforms emplaced in defiladed pits. A portion of the pits could also be provided with bomb-proof cover. This arrangement will render the guns, when in firing position, practically secure against fire from ships and only slightly exposed to high angle fire from shore batteries.

The natural characteristics of the position are very favorable to a strong defense against land attacks. The shores of the knoll are steep and can probably be made sheer for a considerable height. As extensive a ditch as desirable or as time will permit, can be constructed around the position and naturally will be filled with water. Sapping by an enemy is believed to be impossible, and all assaults must be made in the open through water or sticky mud. If, added to these conditions, adequate protection be provided for men and materiel and the fullest use be made of material obstacles, there seems to be no reason why the position should not hold out until the supplies are exhausted.

The supply of the position in preparation for a siege will not be a difficult matter. Supplies can be taken up the Guantanamo River by a lighter to within 800 yards of the position and then carried across the flats. Water can be brought up the river in the same manner and then pumped across to the position through a temporary pipe line.

The reason that this particular position is chosen in preference to an island position is that it is better located to withstand the fire from ships. Immediately upon the arrival of

an enemy fleet a number of small craft might closely surround a lightly armed inland position, and, with their great number of rapid fire guns, smother the fire of the defense and literally pound the work to pieces. This is not possible with the position chosen. If it is taken at all, it must be taken by land forces whose operations, although directly successful, must consume considerable time. During this period at least the harbor will be denied to the enemy fleet.

For the prolonged defense of this position the following armament and garrison is proposed:

Armament:-

4 six inch howitzers.

4 three inch mountain guns.

8 machine guns.

2 thirty-six inch portable searchlights.

2 fifteen inch portable searchlights.

Hand Grenades.

1 Field Wireless.

Garrison:-

250 men.

If the purpose of the denying force is simply the denial of the harbor to an enemy fleet as a first base in the Caribbean, then the armament could safely be lessened by two six inch howitzers and one thirty-six inch searchlight, and the garrison by fifty men.

From the information available it would seem that the other harbors in the Caribbean and the Pacific, the denial of which to an enemy is of importance, can be denied in manner similar to that outlined for Guantanamo.

Further reconnaissances may prove that there are no redoubt sites at some of the locations which can be made sufficiently strong to resist probable attacks. But it will be unusual if there is not at least one good redoubt site, suitably located, near each harbor which can be made to fulfill requirements.

These fortified points will not only prevent an enemy fleet from using the adjacent waters but will also directly support the operations of one's own fleet by (a) forming points of refuge for small craft when hard pressed and (b) serving as a foothold and support in case circumstances render it desirable to occupy and secure any of the adjacent harbors as advanced bases.

It is realized that the construction of the type of redoubt necessary will be no small task. But in the Caribbean, where the denial of bases is of unusual importance, there will be at least one month after the beginning of hostilities in which to perform the work, and in most cases native labor will be available. If complete plans are prepared in time of peace and the men are trained to the work the scheme should be feasible.

There has now been outlined the functions of the Advanced Base Force in national wars and the types of major materiel best suited for their execution. Upon this outline as a basis, it is estimated that the total of personnel and materiel required is as follows (it is admitted that this estimate is rough but it is believed to be conservative):-

Materiel:

16 6" 50 Cal. R. F. Guns.
12 6" Siege Howitzers.
8 3" 50 Cal. R. F. Guns.
12 4.7" Siege Guns.
36 3" Mountain Guns.
100 Machine Guns.
14 Largest Portable Searchlights.
18 18" - 24" Portable Searchlights.
4000 yards Boom and Net Defense.
1000 Mines, Observation and Contact.

Personnel:

To man the above armament (land defense armament as semi-fixed defense) there are required. . . . 2400 Off. and Men.

There is required as infantry, etc,

at least ..... 7000 Off.
and Men.

The estimate of personnel and materiel given here may be considered large, or even out of the question, but it is what is deemed necessary for the efficient performance of advanced base operations. Moreover the estimate may be incorrect as the estimate of the situation on which it is based may be faulty. But some estimate along the same lines should be made as soon as possible for the sake of economy and efficiency. For although many years may elapse before the required personnel and materiel are provided, yet, in the meantime, the forces charged with the execution of advanced base operations will know what they want, how much they want, and will work as a unit consistently to the attainment of the end set.

Now a few words as to the materiel to be provided:- Suitability, not absolute perfection, is the first requisite for any war materiel, and this is especially true of advanced base materiel. In all advanced base operations mobility will exercise a dominant influence. All materiel and equipment for its handling must be such as to conform with this idea. The materiel must be capable of being quickly installed, sure of efficient action when it is installed, and capable of being handled efficiently by ordinarily trained men. Delicate or complicated machines, requiring special care in transporting or experts to ensure efficient action, have no place in advanced base materiel. On account of transportation difficulties the amount of materiel should be cut down to the lowest limit.

SEA TRANSPORT FOR ADVANCED BASE FORCES:-

The characteristics desired in advanced base transports are those generally desired in army transports, but there are certain characteristics which are particularly desirable in the case of the former. They are:-

(a) Facilities for loading and unloading heavy materiel.

(b) Torpedo defense armament.

(c) Speed and good steaming radius.

(d) Suitable small water transport in abundance.

(e) Comfort for troops.

In regard to (a) facilities for loading and unloading heavy materiel: The time required to secure an advanced base will be that time necessary to install the heavy materiel and therefore every effort should be made to facilitate this part of the work.

In regard to (b) torpedo defense armament: Advanced base transports will operate directly with the fleet and will be continually subject to man-of-war dangers, especially torpedo attacks. They should be provided with sufficient armament to ward off attacks from torpedo craft and light vessels. Some of the heavy artillery of the Advanced Base Force could be used to good advantage in this defense. If these transports are armed they could also be employed as scouts when desirable.

In regard to (c) speed and good steaming radius: In advanced base operations surprise will generally be the main factor governing success. As the element of surprise does not as a rule lie in the operation itself but in the rapidity with which it is executed the transports should have as great speed as practicable. Their steaming endurance must be at least equal to those vessels with which they will operate.

In regard to (d) suitable and abundant small water transport:- This transport should include power launches, lighters for transport of heavy materiel, and boats for the transport of men and light materiel. All should be of a type best adapted for use in opposed landing operations on an open coast.

In regard to (e) Comfort of troops:- It is probable that troops will be on board continually for a considerable length of time -- several months, perhaps. Their greatest efforts will have to be put forth in executing landings and seizing objectives. The arrangements on board must be conducive to comfort and thus to their efficiency at the time of disembarkation.

Large transports are not well suited to advanced base operations. The transports should be of medium size and in sufficient numbers to permit of the different types of armament being distributed among two or more ships. Then the loss of one or more units is not likely to seriously handicap operations. Being of medium draught they will also be able to carry out landing operations more effectively.

If money is to be spent in building transports as fleet units in time of peace the governing factor in their construction and arrangement should be efficiency in national wars. Any step taken to serve the ends of peace service at the expense of efficiency in war are not warranted. Any ship will serve to transport men either in peace or war, while an advanced base transport, being practically a fighting ship must have special requirements. If any transports are built by the navy they should be built for the sole purpose of advanced base use. Peace time convenience at the expense of war efficiency is wrong especially when the cost is practically equal.

THE MARINE CORPS AS AN ADVANCED BASE FORCE.

Having determined in a general way the amount and types of materiel and the total personnel necessary for the execution of the functions of the advanced base force in war, we will now give brief consideration to the particular force charged with that work.

About four year ago the advanced base work was officially assigned to the Marine Corps. This was logical as the marines had executed similar functions connected with fleet operations for more than 130 years, or even since the day (1776) that the first Corps Commandant, with a force of landsmen and marines, landed and captured by assault the forts at New Providence.

In late years the land operations connected with fleet operations have increased in magnitude and complexity -- in proportion to the magnitude of modern fleets and the difficulty of supplying them in various theatres of war. In our service, however, the advanced base element has not been developed in concordance with the other elements of naval power. Men-of-war, colliers, supply ships, etc., have been appropriated for and constructed but very little has been done to ensure their action in time of war in so far as secure advanced bases effects it.

About ten years ago an effort was made to form an advanced base outfit at Cavite. A great deal of old materiel was collected and some new materiel (minor articles) was purchased. This outfit was later transferred to Subig Bay and was used on Grande Island during the years 1907, '08 and '09. Some new equipment was purchased during the time, but most of it was expended on the island. This outfit was returned to Olongapo in the spring of 1909, and in July, 1910, it was turned over to the marines. So far as is known this was the first advanced base outfit to be turned over to the marines and they made responsible for its war efficiency. I believe that it was sometime later that the materiel collected for advanced base use on the east coast of the United States was turned over to the marines.

It was unfortunate that the mere order to turn over the existing advanced base materiel to the marines was not sufficient for the preparing of an efficient advanced base outfit for war. Men, necessary materiel, and opportunities for training those men available were not provided for to any extent. As a consequence, the work of the marines in connection with the preparation for advanced base operations has been recently commented upon unfavorably by a Navy Department Board of Inspection.

A STORY:-

Once upon a time a marine officer receipted for an advanced base outfit at Olongapo. The outfit consisted almost entirely of materiel which had been surveyed from ancient ships and navy yard shops. For be it known that for many years there was hardly a large survey held in the Far East in the report of which not to be found this or a similar phrase:- "To be turned in for advanced base use." Verily, there were some strange articles in that outfit, and I believe that to this day there remain some for which no names have been found. But although the materiel was of this nature and there was a rumor abroad that it was shortly to be turned in to the Smithsonian collection, it was all there was, and therefore every effort was made to prepare it for service and train men to handle it. Guns were actually mounted and fired and drills held with the searchlights, fire control, etc.

There were but scant funds with which to purchase the equipment necessary to ensure the efficient working of the main elements of the outfit (those that could be used) and only bare necessities could be provided. Notwithstanding this, lists of all articles required were prepared and submitted. These lists included trucks for land transport of heavy materiel, pontoon lighters, railways from storehouses to docks, etc. All materiel on hand was collected in order and tagged, shipping boxes were constructed, and all arrangements made for quick packing and shipping. The paper work was put in proper shape, and data concerning the materiel, with instructions for its use, was prepared.

Some of the materiel that was furnished was incomplete. For instance, 5" 50 cal. field carriages were provided without guns. The field carriages were provided with panoramic sights but no battery commander's telescope or fire control apparatus was furnished.

Every effort was made to secure the necessary materiel, that was not regularly provided, in other ways. Many things, such as tools, field battery fire control, field wireless outfit, etc., were improvised in the advanced base shops. The Post Quartermaster was relieved of a few articles and so were the navy yard shops. During this period the advanced base men were much distrusted by all accountable officers on the station, for the latter believed that many of their missing articles had gone to that bourne from which nothing ever returned; and nothing ever did for the advanced base men etc, slept and worked in their storehouses.

And so the story goes up to January, 1911. What has been accomplished since that date is not known but it is believed that it has not been possible to accomplish very much, owing to the shortage of men in the Philippine Islands and the expeditionary service required in China.

Knowing this story, it was with great sadness that one marine officer read the report of the Board of Inspection in regard to the advanced base force. He has not "lived happily ever afterwards."

Owing to the scarcity of men and the lack of materiel it has been only recently that the marines at Philadelphia have been able to do much with their outfit. However, a great deal has been done in the way of making estimates and experimenting with materiel.

ORGANIZATION:-

The advanced base force should consist of the entire personnel and materiel provided for the support of naval operations; that is, the entire Marine Corps.

This force should not be divided into permanent "outfits" for

a special type of operations as any certain force will not economically fit more than one condition. Nearly all types of units may be required in every case but the number of each kind required will vary. For these reasons it would seem that the best organization would be a collection of small units, company inits for instance (2 6" guns or 4 3" guns with personnel, signal and fire control companies, etc.), with no larger units except for temporary command purposes. Such units could then be economically assigned for the purpose of performing any function in peace or war without breaking up any organization or disturbing the normal arrangements for command. Infantry organizations should be temporary as at present.

DISTRIBUTION:-

The ideal distribution would be one which would permit of the entire existent force of marines being equally available in peace time and in national wars. This is not possible, however, owing to the expeditionary duty necessary in time of comparative peace. A force must be maintained in the Far East which would not be available in the Caribbean in time of war, and on the other hand, it may be necessary to maintain a force in the Caribbean which would not be available in a Far Eastern campaign.

It is considered necessary that an expeditionary force be maintained somewhere in the Far East, but Olongapo is not the place for it. The force should be at the terminal naval base. We have no terminal base at present but it is probable that one will be established at Guam. Guam is necessary to us. Until that point is finally secured as a permanent base it is there that the marine expeditionary force should be -- to deny the use of Guam to an enemy and retain a foothold for recapture. Also, after Guam is secured that point is the logical base for the expeditionary force; that is, unless a terminal base is established in the Philippine Islands.

The advanced base force is as much an element of fleet strength as any type of man-of-war and therefore the principles

of concentration should apply to an equal extent. If the peace station of the fleet is to be on the Atlantic coast it is there that the advanced base force should be concentrated -- to exercise with the fleet in peace and accompany it in war. The point selected should be one which will permit of quick mobilization and at the same time afford the best facilities for training. Concerning probable war operations and peace time expeditionary duties, the nearer the point is to the Caribbean and Central America the better, provided that the climate, transportation facilities, etc., are satisfactory. Conditions seem to indicate that Philadelphia is the best place. As the Coast Artillery and the Mobile Army take over the defense of permanent bases the marine contingents in the United States and the oversea possessions should be either withdrawn or cut down to the limit and concentrated at the advanced base garrison. All marine schools should be at the advanced base rendezvous, and men for sea service and recruits (so far as economy will permit) should be trained there.

TRAINING:-

The principle that should govern any war training is that forces should be able to do in peace time what they must do in war. In the case of the advanced base force, the carrying out of this principle requires, first of all, that the materiel and sufficient men to handle it be kept together where proper training facilities are to be had, and that the personnel be permitted to continuously concentrate their entire attention on the work in hand. Sufficient officers and men should be concentrated at the advanced base rendezvous so that in the case of "small wars" in the West Indies it will not be necessary to withdraw the entire garrison for expeditionary service but only the infantry units and some of the mobile artillery and machine gun units; thus leaving the main fixed sea defense units to continue their training undisturbed.

To ensure complete and efficient cooperation with the navy and to verify the correctness of war preparation measures insti-

tuted, the forces should have actual maneuvers with the active fleet at least once a year.

There is one particular point in connection with the training of the advanced base force which warrants special consideration just at present and that is the question of sea training.

Do the marines (the advanced base force) need sea training? They do, most assuredly; one has only to glance at the functions which they will be required to perform in war to recognize the fact.

How shall the marines get this sea training? There are two possible ways:-

(a) By serving on the armed transports which they must have in war.

(b) By serving on board men-of-war.

As we have no armed transports at present and there does not seem to be any immediate prospect of getting any, the marines must have service on board men-of-war.

This, by the way, is the fundamental reason why marines should be retained on board cruising ships, and not because they have been on board those ships from the beginning nor that there is danger of their not properly cooperating with the navy unless they continually eat, sleep, and discuss the latest base ball news with naval officers. The marines need sea training in order to efficiently perform their mission in war and they must get it the best way that they can -- it is a war necessity.

Of course, the traditions and sentiments born of past association with the navy are very valuable. In the beginning it was the peculiar service of the marines in the navy that largely laid the foundation of that discipline and esprit that has always flourished in the Marine Corps. However, with the change in the type of naval personnel the service of the marines lost much of its value in this regard and at the present time the main value of that service lies in fostering close and efficient cooperation. As regards cooperation, let us take some modern examples:-

The primary role of field artillery is to support infantry in battle. To carry out that role effectively it is not required that the field artillery live with the infantry and eat in infantry messes. The thing that is required, however, is that the field artillery be frequently exercised with the infantry in warlike maneuvers so that each may see how the other carries out its own peculiar work and gain confidence in its ability to perform it. In our army there is no fear that the infantry will cast off the field artillery nor that the field artillery will gradually draw away from the infantry; because each of those branches has its MISSION, the result of a thorough study of future war necessities. This mission is kept constantly in view by all and forms the mainspring of every act of war preparation.

The primary role of the torpedo boat destroyer is to support battleships in the battle area. The principles governing the war training of these two types of ships are exactly the same as those governing the infantry and field artillery.

The basis of all the troubles of the Marine Corps is that it has never been authoritively assigned a clearly defined MISSION based on future war necessities. Only when that mission is given (and thoroughly understood by both the Navy and Marine Corps) will dissension cease. Moreover, when the Marine Corps has its mission and its officers are educated in it I do not believe it will make any vital difference as to efficiency and cooperation whether the marines serve on board cruising men-of-war or on their own armed transports (fleet units).

There is another side to the question of retaining marines on board cruising ships which has been recently discussed by Commander W. W. Phelps, U. S. N., in the U. S. Naval Institute Proceedings. In general, Commander Phelps holds that the retention of marines on board ship militates strongly against the inculcation of a military spirit in the men of the navy by reason of the fact that the marines perform all of the strictly military duties.

ANOTHER STORY:-

Once upon a time there was a company of marines stationed on Grande Island for a period of eighteen months. They lived in tents on a white sand beach; roasting in the dry season and soaking in the wet season. Within a stone's throw of this camp there lived Coast Artillery troops quartered in comfortable barracks. For months at a time the daily working hours of the marines varied from 10 to 14 hours per day, rain or sun, for six days in a week. The work consisted of all that connected with the emplacing and dismantling heavy batteries (6"). For a great part of the time the only strictly military work performed by the marines was Sunday morning "troop and camp inspection." The Coast Artillery troops performed the guard duty, with the exception of the inner guard of the marine camp which consisted of one corporal. The marines served under these conditions with admirable results so far as discipline and military spirit were concerned, as reports of inspections will show. Although about one-half of the old men in the company was transferred and replaced by recruits during the period mentioned, the company lost none of its original discipline and military spirit. On the contrary, these qualities always seemed to grow greater as the hardships increased. The officer who commanded the company during the latter eight months of the tour was rather inexperienced and uninstructed as to the finer points of military discipline and morale and was puzzled by this. One day an Army officer told him that it was the sign of real military discipline and that the service of the company was such as to bring out that very quality. Since then the company commander has come to the following conclusions as to how that military discipline and spirit was obtained:-

(a) The non-commissioned officers were <u>leaders of men.</u> The primary characteristic for these men was not knowledge of the drill book, guard manual, etc., but the power to control men, both on diffidult

duty and on liberty. The technical knowledge, if needed, was supplied later. Such men acquire it easily as a rule.

(b) All acts of work were performed in a military manner. The company fell in for work in the morning. Even though a man was dressed only in a pair of crepe underdrawers and carried a pick, he stood at rigid attention just as though he was dressed in full khaki and carried a rifle. The First Sergeant (a real one) called the roll in the usual manner and reported the result to the company commander. The latter generally first outlined the day's work to the company and then made the necessary details and gave the necessary instructions to the detachment commanders. And so on through the day, and for day after day, orders were given and work executed in a military manner. No man ever forgot that he was a member of a military force. No matter what there was to do, orders were given and responsibilities assigned and accounted for just as though the company has been engaged in the strictest of military duty. I might also add that the men fell in and marched to meals, and that on the work they habitually marched in detachments; they never moved in gangs unless it was necessary.

(c) Officers and non-commissioned officers endeavored to set the men a good example in industry and military behaviour. What they demanded of the men they gave themselves, and thereby gained the trust of the men. And, by the way, this trust is the greatest asset a leader can have. It is unfortunate thatmany do not understand that to gain this trust one must make an effort to be trusted.

It is not to be understood that all of these measures were

carried out in an ideal way -- far from it. I do not believe that either the company commander or his non-commissioned officers ever made any special effort to create the conditions which proved so beneficial. They had been trained to do it without thinking much about it; it was simply the Marine Corps way, the only way they knew. This way has been continually kept alive by the older officers and non-commissioned officers of the Corps and transmitted to the younger ones. The entire Corps has it to a certain extent for these men serve in no particular company, battalion, or regiment, but in the Corps, And I must add that this way, the right way, will continue to develop in the Corps only on one condition:- That appointments of officers and non-commissioned officers be based mainly on "probable military aptitude and efficiency." Only leaders of men can inculcate real military discipline in an organization. It is true that natural characteristics of leadership can be strengthened to a certain extent by education, but the foundation must be there to begin with.

The lesson to be drawn from this story is:- That true military discipline is not the result of the performance of a certain kind of work, but the performance of any kind of work in a military manner; and the work must be long, severe and continuous. When the leaders of men in the navy work along these lines and inject military discipline into the navy, no one will "care a rap" who does the guard duty.

After considering the truths here outlined, and considering that international conditions are unsettled, that the ships of the active fleet are undermanned, and that the navy has no adequate trained reserve, who will say that the question of marines serving on board cruising ships is not settled -- at least, for the present?

THE PRIMARY NEEDS OF THE ADVANCED BASE FORCE:-

To ensure complete coordination with the navy and prepare and maintain the Marine Corps as an efficient force to support naval operations it is deemed necessary:-

(a) That the senior line staff officer at Headquarters be a member of the General Board of the navy.

(b) That under directions of the Major General Commandant, the senior line staff officer at Headquarters and certain other officers, preferably officers on duty at the advanced base rendezvous, (composing a board) make a thorough study of the mission of the Marine Corps (as determined by the General Board of the Navy), both in peace and war, and determine in detail the personnel and armament necessary for its execution.

(c) That this board make an exhaustive report and that its contents be diffused throughout the Corps so that all may know the exact functions of the Corps, and thereby secure unity of thought and action in the preparation for their execution.

(d) That this board (in lieu of a General Staff or equivalent) be a permanent board and, in addition to other duties, make recommendations as to Marine Corps policy and prepare plans of operations.

(e) That officers thoroughly conversant with the work to be performed by the Marine Corps make the necessary reconnaissances in probable theatres of operations, It is imperative that this be done as soon as possible for upon such reports preparatory measures will largely depend.

(f) That the marine officer on the staff at the Naval War College, the marine officer on duty at the Bureau of Naval Intelligence, and the marine officer on duty at the colleges and schools of the Army be charged with the duty of submitting to the Marine Corps Board any information bearing on Marine Corps work which they may acquire.