

HUTCHINS, Gordon

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Naval warfare

THE INFLUENCE OF GEOGRAPHY ON NAVAL WARFARE

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by Comdr. Gordon Hutchins, U.S.N.
Member of Staff -

THE INFLUENCE OF GEOGRAPHY ON NAVAL WARFARE

The purpose of this talk is to show how geography affects in theory and practice the various forms of Naval Warfare. In fact, if certain geographical conditions in regard to the relative position of opposing powers are not satisfied, it is impossible for them to even make war against each other.

As an example, Holland and Switzerland could never conduct war operations against each other. We may therefore start with the assumption that strategic geography is likely to have a determining influence on naval warfare.

For convenience, forms of naval warfare have been divided into three groups: the first, operations for securing command of sea areas consisting of destruction of enemy forces by various means, or containing enemy forces. This subject was presented by Captain Turner last month.

Second, operations in sea areas not under command, such as defense of lines of communications, raids and trade warfare; and thirdly, operations in sea areas under command, consisting of defense of coastal and critical sea areas, blockade and expeditions against enemy territory. Presentations discussing these operations will be given at a later date. Today, I will merely try to show how geography determines the probable degree and the effectiveness of participation by the various powers, and the influence which geography has on practically all types of naval operations.

The subject will be considered under the following subdivisions:-

- (a) Island vs. Continental Nations.
- (b) Relative position and distance from home territory.
- (c) Overseas Empires.
- (d) Outlying Naval Bases.
- (e) Naval Logistics.

I will not confine discussion to any one particular sea area, but will attempt to broadly cover the strategic geographical factors of the five major sea areas in which we are most interested at the present time, i.e., the North Sea, the Mediterranean Sea, the Caribbean, the China Sea, and the sea area surrounding the Main Islands of Japan.

A glance at the chart will show the similarity of the geographic outline of most of these sea areas, so that by studying the influence of geography on naval warfare in the areas which have recently been the scene of naval operations we may apply the lessons learned to other areas in which we might be more interested but which have not been the scene of naval warfare since the development of modern weapons.

Geographically, the home territory comprising the various states throughout the world may be divided into two general classes: Island and Continental States.

Island nations such as Japan and Great Britain, due to their separation from the continent by narrow waters and the relative position and distance from the continent, have certain geographical characteristics which are more or less common. It is on these geographical characteristics that the nature or general character of the naval warfare of such powers will depend.

Countries which for all practical purposes are insular are of course most susceptible to naval pressure. As an example, the military history of England shows that she has always had the greatest fear of invasion from the mainland. It has therefore been her fundamental peace-time policy to prevent all possible enemies on the continent of Europe from contesting her naval supremacy.

We have also seen that this geographic position of island empires, which encourages them to develop naval supremacy, has, on the other hand, permitted them to make extensive conquests overseas at the expense of the greatest military powers on the continent. This has been made possible by isolating the battle objective and at the same time disposing their naval forces so as to secure their homeland sufficiently against the dangers of invasion. Of course in a contest between an island power and continental enemies, military action will usually have to be taken in addition to naval, but in so far as Great Britain

is concerned, in most cases, she has been able to have the greatest part of the military force supplied by allies on the continent.

An outstanding example of the type of warfare resorted to by an island empire with naval supremacy in conflict with a continental power was seen in the Seven Years War. In this war the British strategy was to force a decision in a secondary theater, rather than to take the offensive in continental France, where the enemy was naturally stronger.

England first prepared to defend Hanover; then she subsidized Frederick the Great. She thus drew most of the French forces to their eastern frontier, engaged as little as possible of the British army on the continent in order to be able to concentrate the main effort in Canada, which had been chosen as the secondary theater.

On the other hand, France realized that her only chance of success lie in a war on the continent or in an invasion of England. She also realized that it was the English supplies that maintained the German army, thus the only way to subdue Germany was to invade England, and so detach her from that alliance.

Accordingly, France made immense preparations for an invasion in force. The Brest and Toulon Squadrons were united at the Morbihan to convoy a fleet of transports to Ireland, where an insurrection was confidently expected. Another army was to be convoyed to Scotland, where a Jacobite rising was

to take place on their arrival. And a much larger army than both of these together was to make a dash for the south of England in flat-bottom boats from Havre.

To guard against the threat of invasion, the British blockaded the French coast, maintained a defensive of the homeland compatible with the political demands, but stuck to the original plan of prosecuting a vigorous offensive in Canada, which was directly based on the British command of the sea.

It was the geographical position of the British Isles and its relative position to the European continent and its overseas Dominions which determined the combined military and naval strategy for England during the Seven Years War. The blockade of the French Coast and Hawke's victory in Quiberon Bay were just as important factors in the war in the secondary theater of Canada as the operations of the armies on the spot - together they turned the tide against the French and ended the crisis of the war.

Before the modern development of submarines and aircraft, the geographical position of the British Isles in its relation to northern Europe was that of a barrier 600 miles long closing the North Sea except for two outlets. Her superior sea power gave her the opportunity of controlling all access by water to Belgium, Holland, Denmark, Germany and the Baltic. Today, this same geographical position has become more vulnerable, due to the technical improvements in air and

submarine craft, which present a new source of danger to British maritime communications, particularly from France.

Similarly, the relative position of the Japanese Main Islands to the continental powers on the Asiatic mainland has been the guiding influence in determining Japanese military and naval strategy. Her defensive naval policy gives her little to fear from invasion by sea, while her offensive military policy has permitted her to invade eastern Asia at will and set up buffer states to lessen the blow from Russia, the only strong military power on the continent in a position to threaten the security of Japan. In fact, the geographic location of Japan on interior lines of communication with much of their needed supplies of raw materials and markets, with no continental enemy bases like Brest nearby to threaten her lines of communication, places Japan in a stronger position to support her aggressive foreign policy on the Asiatic continent than England in relation to the continental powers of northern Europe.

So far, this discussion of the influence of geography on naval warfare has been limited to island nations. Now let us examine the position of the United States, which we are naturally most interested in, and see what influence our geographical position in relation to European and Asiatic powers will have in determining our military and naval strategy.

The United States, although a continental power, has many of the advantages of an island nation due to the broad expanse of the two oceans separating it from all the strong military powers in Europe and Asia.

It has been said that from a commercial point, the oceans are no longer barriers - that they have become highways. This is also true in a military sense, to the extent that troops can be moved more readily in limited numbers and with less fatigue than by other means. But lacking also adequate control of the seas, the oceans still constitute a barrier that cannot be disregarded.

Certainly there is no comparison of the United States, whose frontiers are separated from the frontiers of other strong military powers by several thousand miles of water with a nation whose frontiers abut upon those of other nations of approximately equal power and in areas where railroads and road systems permit the concentration on the frontier of great armies whose supply is covered and assured by the concentration. When the possibility of strong air attack coincident with the declaration of war is considered, the contrast becomes even greater.

Considered, then, from a defensive point of view, the United States, on the Continent of America, is potentially an exceptionally strong military power - that is, from a geographical standpoint, it is the easiest nation to prepare

for defensive warfare. The Atlantic coastline of the United States lies practically in prolongation of the great circle routes from northern Europe and Canadian ports to all ports on our Atlantic Coast. Thus, every potential base on our Atlantic seaboard flanks the great circle lines of communication from northern Europe, and the farther to the south an enemy makes his objective along our coast, the longer and more exposed will be his lines of supply and the greater the number of bases he must capture or neutralize.

As for possible bases of operation for an enemy coming from this north-easterly direction, the coast of Canada offers several harbors suitable in so far as the natural physical characteristics are concerned, but none of these have been developed to support military operations.

Considering possible enemy bases of operations for a naval force approaching from other than the great circle route, we find Bermuda lying directly off our coast on a line perpendicular to the center of our most vital area and less than 600 miles off shore. But these islands without any strong flanking positions, north or south, have little to offer in the way of an advanced base of operations.

The Bahamas, within easy aircraft range of air bases in Florida and Cuba are not advantageously placed geographically or strategically to support offensive naval operations of a European power against the United States. The Lesser Antilles, particularly the southern part, offer certain

advantages from which to gain a foothold to project further operations to the westward, but as a direct threat to our Atlantic Coast, they can be disregarded with our present potential strength of position in the Caribbean.

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On our western sea frontier we find somewhat of a similar condition to the east coast in so far as the influence of geography on defensive naval operations is concerned. The great circle course from the trade centers of eastern Asia to the western United States, Central America and Panama passes close to the Aleutian Islands and then along the Pacific coast of the United States. There are comparatively few first-class harbors on this coast, Puget Sound, the Columbia River, San Francisco, Los Angeles and San Diego, but these are well spaced and believed to be adequate for the support of naval operations in any defensive sea area which might be established in the Pacific.

Both to the north and south of the west coast of the United States are strong natural positions and several excellent harbors. Two of them on the Canadian coast are well developed, but the one on the coast of lower California is entirely undeveloped, and has practically no resources. All these positions, however, are dominated by the position and strength of our bases along the Pacific coast of the United States and by the unlimited resources supporting them.

The defensive position of the United States in the Pacific is further strengthened by the relative position of our Fleet base at Pearl Harbor and the potential bases in the Aleutians.

I would like to stress this fact - that the influence that these bases exert on naval warfare, particularly in defense of the homeland, is not due to their mere geographic position, but to the position they occupy in relation to each other and to the Pacific Coast of the United States, and to our own and possible enemy mobile forces.

Thus in considering Pearl Harbor and Dutch Harbor in connection with the defense of the West Coast of America, it is the Pearl Harbor-Dutch Harbor line which assumes strategic importance. Certainly it would seem more logical and economical to defend the 6,000 mile line along our Pacific Coast by making adequate distribution of naval forces along the Pearl Harbor-Dutch Harbor line than by attempting to fortify or patrol with sufficient force our entire defensive coastal frontier.

A study of the geographic areas in the western United States, where an invasion would cripple our war-making power, and of the possible lines of advance to these areas, reveals beyond a doubt that operations capable of producing a prompt and decisive result are all precarious, due to the insular position of the United States, the great distance from any possible enemy, and the strategic location of our outlying bases on the flank of the lines of communication from most all Asiatic ports. The seizure of the Puget Sound area, the occupation of oil fields in Southern California or Texas, or even the establishment of a temporary base in the Western Aleutian Islands, might all be damaging, but the effect would only be temporary and an enemy incapable of making a greater effort would be wise to attempt none at all.

Thus we see that continental United States by its geographic situation relative to other nations of the world is almost insular, but in its extent of territory and resources it is almost a world in itself. Our possessions in the Western Pacific, the Philippines, and Guam are our greatest weakness in their present undefended state, since their relative distance from Asiatic powers to that from the United States suggest aggression by the former, which largely upsets the superior national power of this country.

Our isolated position also renders us strategically weak for offensive war against land areas and coastal sea routes of Asiatic or European powers, due to the distance involved, but defensively our geographic situation makes the United States practically invulnerable to invasion by any enemy from across the Atlantic or Pacific, as long as we maintain relatively adequate naval and air forces.

In this discussion of Island Nations vs. Continental Powers we have seen that there are two outstanding factors which cause geography to play such an important part in the national, naval and military strategy of nations. These are; Relative Position and Distance from Home Territory.

Of course, fixed position is also a primary consideration. In the study of the military geography of strategic areas we find that there are certain bordering states, colonial possessions and island formations which may be valuable to one opponent or the other because of the capacity and security of their harbors. Other positions may have been developed as repair or supply bases, while still others may be a source of essential raw materials.

Each physical characteristic merits consideration as a means of facilitating or obstructing movement, and of providing opportunity for offense, defense and support.

I will not go into any details to-day in regard to fixed position because throughout the year staff presentations similar to the one recently given on the North Pacific area will be given on all the other important strategic areas in which the United States is likely to become involved. These presentations will cover the hydrography, topography and other physical characteristics of the various fixed positions throughout the area which might be capable of supporting military operations. I have merely mentioned fixed position because on it is dependent the strategy of movement.

Of even greater importance than the inherent military value of the several features of the fixed positions in a theatre may be the relative position which each such feature occupies with respect to the other features, and to the location of the military forces involved. Is there a nearby harbor from which the enemy could threaten us? If so, must he be driven out and kept out before we can feel secure in the position in question? What is the relative position of the location in relation to our own and enemy trade routes? What is the distance from our own and enemy home territory?

Thus we see that no island, group of islands, or other geographical position in itself can exert an important influence in determining naval strategy. It is only when the position is considered in relation to such factors as other positions under own and enemy control, sea areas coveted or in dispute,

own and enemy vital lines of communication, own and enemy mobile forces and its position relative to possible allies, that its strategic value begins to take on significance.

Before going any further into this subject of strategic geography and the influence of relative position to other strategic factors, it will perhaps be best to define certain terms which are commonly used in order that we may have a mutual understanding of their generally accepted usage.

4/ The Theatre of War comprises all the territory upon which the parties may assail each other and the whole extent of sea upon which hostile operations are liable to occur. These operations are usually confined to a limited and well-marked area, but it is possible, particularly in the case of maritime wars, for the theatre to embrace both hemispheres.

4 The Theatre of Operations should not be confused with the theatre of war. The theatre of operations is that portion of the theatre of war in which the operations of opposing naval forces are most actively carried on. It comprises all the area a force may desire to invade and all that it may be necessary to defend.

7 Strategic Front is the extent of the front occupied toward the enemy. It is usually represented by the line joining naval strongholds upon which the various task groups of a task organization are based.

9 Front of Operations is that portion of the theatre of operations separating hostile forces. This may correspond in extent to the whole strategic front, a portion of it, or the single objective itself. It may be a flanking position

at which the fleet has taken station, beyond which the advancing force dare not go without destroying or masking it, when the front of operations is at once transferred to the next position of the line of advance.

9 A Base of Operations is the area or areas in which the supplies and reenforcements are collected, from which the fleet projects its influence into the theatre of operations, and upon which the fleet falls back if obliged to retreat. In general, it is a locality prepared to support the fleet in its operations.

10 A naval base is, generally, a center from which men-of-war can operate and be maintained, and may be of a permanent or temporary character, depending upon whether its constructed naval accommodations are of a fixed or transient nature.

11 A main home base is one within the continental territory of the country, from which the fleet can operate at all times and which is designed to maintain the fleet in all respects both in peace and war.

12 A main outlying base is one without the continental limits of the country, having as many of the attributes of a main home base as practicable, and designed to be a strong point of support for the fleet and from which it can be maintained for limited periods in war.

13 A subsidiary base (home or outlying) is one that

contains some of the fixed elements of a main base and which, while not capable of supporting and maintaining the whole fleet, may so care for portions of it.

14 An outlying base of a temporary character used in war for the fleet or portions of it is termed an advance base.

15 Strategic Points. Every point of the theatre of war which is of military importance, whether from its position as a center of communications, or from the presence of military establishments or fortifications, is a geographical strategic point. In other words, they are points the occupation of which increases the power of the fleet, and procures advantages for its ulterior operations.

16 Decisive Strategic Points are those which are capable of exercising a marked influence either upon the result of the campaign or upon a single enterprise, such as those the possession of which would give control of important sea areas or those which may be the center of the chief lines of communication.

17 Strategic Lines are the important lines found upon the theatre of operations, along which the front of operations advance. They are strategic either from their geographical position which by their permanent importance become decisive points in the theatre of war, or, from their relation to temporary maneuver because they connect two strategic points.

There is a distinction between those strategic lines which

are temporary and change with the operations of the fleet such as lines of operations and those lines like lines of defense which remain important strategically throughout the whole campaign.

Lines of operations are the lines connecting the base with the front of operations.

Lines of defense are obstacles behind which a fleet is able to establish itself and resist superior force. They are called permanent if they are part of the defensive system of the state such as the line of a fortified frontier or eventual lines of defense if they relate only to the temporary positions of the mobile forces.

Interior Lines of Operation are lines such that a shorter interval of time is required for concentration than that required by the enemy. The expression conveys the meaning that from a central position one can concentrate more readily than the enemy on either of two strategic points.

Exterior Lines of Operations are the opposite of Interior Lines.

Lines of Communication comprise all the practicable routes connecting the front of operations of a fleet, or fleets, with the bases. In naval war, lines of communication and lines of operations are generally identical. *✓*

Now with this common understanding of the various terms most

frequently used in strategic geography I will continue with the discussion of relative position and distance from home territory of geographic locations and the mobile forces.

In order to show the influence of naval operations due to the relative position of own bases to positions under possible enemy control, let us consider the present situation in the Mediterranean Sea.

In the Mediterranean there are three strong powers - France, England and Italy - more or less vitally interested in maintaining secure bases in the area, strategically well located from which, if the emergency arose, they could support naval operations necessary to gain command of this sea.

Originally the French built a base at Toulon. It was sufficient with its own resources to support the French Mediterranean Fleet until the enemies of France began to secure advanced bases close by, in order to compensate for the great distance from their homeland.

First, Gibraltar was taken by the British as a post for news. Later it was found necessary to make it impregnable in order to serve the fleet as a real base of operations. Its position closed the western entrance to the Mediterranean, but the French were already inside, and from the flanking position at Toulon they could naturally operate on interior lines.

Next came Minorca to cover the approaches to Toulon, and for the next hundred years the interested powers continued jockeying for strategic positions in the Mediterranean from which to project

naval operations in support of their political objectives.

After the opening of the Suez Canal, Malta assumed its greatest importance. It occupied a strategic position almost midway between Gibraltar and Port Said, and also centrally located about 200 miles from Messina and Cape Bon. Its position, therefore, made it a suitable station for commanding the approaches from the Western to the Eastern Mediterranean.

But from Cape Bon to Nemours the French shores in Africa border upon the route between Gibraltar and Malta, and a war with Great Britain would inevitably lead France to this region. The creation of a French base at Bizerta was the natural result, in order to offset this British advantage of position.

The real decline of Malta as a stronghold of British naval power in the Mediterranean, however, only became evident in 1930, when Italy, having become a strong naval power herself, worked out a comprehensive plan for mastery of this sea. She planned to cut the Mediterranean in two and to make all movements of ships impossible in the narrow passage between Sicily and the South Coast of Tunis on the African side. Accordingly, she built air bases at Siracusa, Marsala and Pantelleria, and strengthened other strategic positions at Tripoli, Sirte and Torbuk, to the extent that Malta has now become a weakness rather than a commanding position in the center of the Mediterranean.

In fact, this weakness of the British position in the Mediterranean has caused them to withdraw most of their fleet out into the open spaces of the Atlantic outside the possible range of Italian air and submarine bases.

British interests in the Eastern Mediterranean are now left to the protection of Alexandria and the air forces based in Palestine and Cyprus. These positions are out of range of the aircraft based in Italy, but a fleet gathered in this eastern area under the protection of shore-based aircraft could be threatened from the new submarine bases and air bases recently established in Libia along the coast.

From this brief description of the relative position of British possessions in the Mediterranean to other strongholds under possible enemy control it can be seen that in this area, without a definite alliance with France to obtain French naval support and the use of French strategic positions in the Mediterranean, it would be most difficult to undertake any major naval operations against Italy or any other strong naval power with whom Italy may be allied.

Next, let us consider the relative position of bases to the field of decisive battle. Never do ships require a repair base near at hand more than when they have been damaged in battle.

After the battle of Jutland, the battle cruiser LUTZOW

and the cruiser WARRIOR were lost for future naval operations because they were not able to remain afloat long enough to reach their nearest bases for repairs. On the other hand, three badly damaged battleships, the battle cruiser SEYDLITZ, and several cruisers and destroyers were saved through the good fortune of being able to reach near-by bases.

Not only is the relative position and distance from the scene of action a vital factor in the future strength of the opposing forces, but the number of bases and the facilities available also determine the time that the fleets will again be ready for action.

It will be remembered that after the fleet action in the World War when the German Fleet employed all the facilities of the bases at Wilhelmshaven, Hamburg and Kiel, and the Grand Fleet being reconditioned at the numerous dock yards in the British Isles, it was 2-1/2 months before the two fleets were again ready for battle.

Before battle, bases are in some respects even more important than afterwards. Concentration of a fleet at the right time, in the right place, is not merely a question of strategy and tactics; it is also a question of fleet bases with their equipment. During the World War there were usually at least two battleships, one battle cruiser, two or three cruisers, and several destroyers absent from the Grand Fleet under re-fit at home bases at all times. With less capable base facilities, this percentage of non-effective strength

would obviously have been higher, as would also have been the case had the operations been conducted at a greater distance from the bases.

Now, in regard to the influence of geography on naval operations necessary to gaining control of sea areas, it will be remembered that when the Germans began to make use of the Northern exit from the North Sea, control of this passage by the Grand Fleet could only be accomplished from bases on the East Coast. First, they used Scapa Flow - the most northerly port available, but owing to the lack of defense against enemy torpedo attacks it was necessary to shift the base to Loch Ewe on the North Coast of Scotland, and later to Lough Swilly in North Ireland.

Although these bases were well suited in so far as relative position was concerned to guard the northern exit from the North Sea, they were too far distant for the Grand Fleet to support the troop movements across the Channel to France and to defend the east coast against German raids. In 1915, it was therefore decided to base the Main Fleet at Rosyth, but it was three years after the war began, - in 1917, before the defensive works of this base could be completed.

So far, we have considered bases in regard to their relative position from the Main Fleet operations. On the other hand, while two opposing fleets watched each other in the North Sea area during the late war, with but a single major fleet engagement, a world-wide contest was waged by lighter

forces to control over-ocean trade routes. In this form of warfare, bases again played a dominant role.

The influence of geography on commerce warfare or in defense of lines of communication can best be seen by a glance at the map showing the British trade route. It will be noted that the main lines of communication could be stopped, or most easily protected, by the selection of certain points as naval bases along the routes. These points may be classified as follows:

1. Maritime gateways; English Channel ports, Gibraltar, Port Said, Aden, Singapore, Hongkong, and Thursday Island.
2. Junction of trade routes; Cape Verde Islands, and Colombo.
3. Turning points on trade routes where vessels naturally hug the shore to keep the shortest route. Notable examples of this type are SIMON'S BAY near Capetown, from which ships rounding the Cape of Good Hope could be attacked; and FREEMANTLE on the turning point of the route from the ports of Southern Australia to India; and the SUEZ CANAL.
4. Flanking positions near trade routes, such as Halifax, which flanks the main routes from Great Britain to New York and Boston; Bermuda, which flanks the United States coast trade and routes from New York

and Boston to the Panama Canal; the Falkland Islands, which flank the route from Great Britain to the Pacific via Cape Horn; Freetown (Sierra Leone), which flanks all trade from the Northern to the Southern Atlantic.

With this chain of accessible and defensible bases, it is possible for the British to cover all the important sea lanes and focal areas, except in the Mediterranean, with comparatively few ships.

Years ago Admiral Mahan stressed the fact that a perfect line of communications requires several bases with good harbors, properly spaced, adequately defended, and with abundant supplies, such as England in the present day holds on most of her main commercial routes.

Of course, no holding of strategic points by land forces alone can maintain the sea lines of communications without the support of adequate naval forces. The Straits of Dover were not held during the World War by the fortifications of Dover, but by the combinations of naval resources such as the Dover Patrol, mine fields, submarines and aircraft, and the possibility of calling quick reserves to that point in case of need.

The same general principles in regard to the need for bases to defend lines of communications equally apply to cruiser warfare or the operations against enemy lines of communications.

This fact was well illustrated in the German submarine campaign during the World War and the German cruiser warfare in the Pacific. It will be remembered that during the height of the German submarine warfare only 15 or 20 submarines could be kept operating in the critical area at the English Channel approaches, even though more than 100 submarines were, theoretically, available. Could the Germans have based this force on Brest or Queenstown, instead of the comparatively distant bases, its effectiveness would have doubled, without the addition of a single submarine. In addition to the above, the routes of the German submarines to and from their bases were flanked by unlimited ports from which allied naval efforts could be directed against them.

In the Pacific, early in the War, the German raiders were denied all bases by operations of the British and Japanese forces in that theater. As a result, half the time of these raiders was spent either actually in coaling, or in steaming to and from the rendezvous at which supply ships were to be met, of the transfer of fuel effected. They dared not use high speed on account of the scarcity of fuel supply; damage from hostile gunfire meant possible loss of the vessel, due to the fact that no bases were available. Only internment or the complete destruction of these German raiders could be anticipated in their attempt to operate against enemy commerce so far away from their home country without adequate over-seas bases.

No discussion of the influence of geography on naval warfare due to relative position would be complete without some mention of the importance of noting the relative position of own and enemy territory to possible allies close to the theatre of operations.

First, let us consider the territorial positions under control of the British Empire in the Pacific and their military value if Great Britain were an ally to the United States in a war in this theatre.

Canada on our Northern border, and particularly the Province of British Columbia, occupies much the same position as the United States, in so far as it is open to threat from raids by an Asiatic power. Furthermore, in considering the defense of the Alaska-Aleutian Island area, an outstanding advantage of having Canada as an ally would be to avoid the 765 mile stretch by aircraft which would otherwise have to be made between Seattle and Sitka, in order to avoid violation of neutrality.

In the Western Pacific, the once strong position of Hongkong has been overcome by the building of a strong Japanese Fleet and the development of Formosa and the Pescadores for the support of military operations.

Singapore, although occupying a strategic position in relation to trade routes, is in no sense at the present time a first class naval base, and it will probably be at least two or three years before its completion as such.

Both of these positions might be valuable for supporting control of the China Sea and southern exits if combined with a sufficient number of other positions such as the Philippine Islands, upon which strong forces could be safely based.

The value of an alliance with the Dutch also should not be overlooked, due to her control over the passes leading into the South China Sea, the many fine harbors in Dutch territorial waters, and the abundant supply of strategic raw materials available in this area. It is particularly important that these raw materials be denied the use of an enemy.

Since the Anti-Communist Pact between Germany and Japan, the position of France in French Indo-China has begun to take on greater strategic importance, and their value as a possible ally has increased accordingly. The French Government has now begun preparations for a first class naval base at KAMRANH BAY, and a secondary base is planned at ALONG BAY, opposite the Chinese Island of Hainan. A fleet operating

from these strategic positions might control the South China Sea, if adequate in numbers, and at the same time be in a position to cover its own line of communications to the westward through the STRAITS OF MALACCA.

In considering possible enemy allies, the relative position of SIAM to the Japanese line of communications through the SOUTH CHINA SEA should also be noted. Its strategic importance lies in the fact that it is an independent country with a small but rather efficient army and navy. It is the only country in EASTERN ASIA that has shown any particular friendliness to JAPAN. Much talk of a Japanese financed canal across the ISTHMUS OF KRA should not be under-estimated. Such a canal would seriously weaken the strength of the British position at SINGAPORE.

In addition to the influence of geography on naval warfare caused by the relative position and distance from home territory, there are many other strength and weakness factors forced on a nation, particularly if she has an overseas empire to protect, due to the location of her Colonies, Dominions and other outlying territory.

One of the major sources of war has been the conflict of interests brought about by the growth of virile and expanding nations.

When a country is able to expand without going overseas and without introducing international rivalries of any great magnitude, the disturbance to international peace may be a minor one. The United States occupied its present continental territory with the aid of only one foreign war, and that a small one. The expansion of Russia to the eastward through Siberia was accomplished without foreign wars until her occupation of Manchuria brought on the conflict with Japan.

The founding of overseas empires, however, has resulted in numerous eccentric military and naval operations in wars whose origin lay on the Continent of Europe. In all of this overseas expansion, and in the wars which have accompanied it, sea power has sometimes played a deciding role.

Until about the end of the Nineteenth Century, the Powers possessing extensive overseas possessions were European. The Powers possessing the major navies of

the world were also European. This meant that, if two European countries possessing colonies and navies became engaged in a war, the one with the stronger navy could, by defeating the navy of its adversary in European waters, lay open to attack the latter's colonies. The crux of this situation was that European belligerents were close together, and their lines of communication to the overseas possessions of either were practically the same. The result was a practical wiping out of French colonial possessions at the end of the Napoleonic wars. The modern French Colonial Empire was a subsequent acquisition, and acquired partly by the favor and partly in spite of Great Britain. Similarly, the German defeat during the World War left their colonial possessions in the hands of their enemies, who had had superior sea power. Holland, although a small and weak country, has been able to keep her extensive colonial empire intact, because it was to Great Britain's interest to keep her contented and not allied to other powers, and because her military policy and policies regarding trade have been non-aggressive. The moral

of this seems to be that, for a European Power to retain overseas possessions, it must either carefully avoid reasons for conflict, or else get in on the winning side. The tendency in European wars has been for the loser to forfeit his overseas possessions to any winner who had the superior sea power.

The situation with regard to the security of overseas possessions has, however, undergone a marked change since the close of the Nineteenth Century. This has been due to the growth of navies, whose home territories are not in close proximity to that of Great Britain. The lines of communication of these new naval powers to many of the overseas possessions of the principal European countries did not coincide with those of the owning countries. An entirely different geographical situation existed. Lines of communication, instead of being practically the same, as they had been, for example, in the case of Great Britain versus France, were either entirely different or else of greatly different lengths.

A few examples should make this point clear. Take first the growth of the United States Navy. During the Revolution and the War of 1812, the British Navy was in such superior strength to our own that it controlled the seas right up to our own ports most of the time. If troops were available, landings could be made on our shores. All British overseas possessions, except Canada which had contiguous land frontiers, were safely covered by the British fleet. With the growth of the American Navy, the situation began to change. It became

more difficult for the British Navy to exert sufficient strength to control completely the Western Atlantic. Finally, with our approach to parity in naval strength, the problem became so difficult of successful solution that the British Government gave it up. British ships and garrisons, except those needed for police purposes, were withdrawn. It was recognized that friendly relations with the United States were a prerequisite to the retention of British colonial possessions in the waters which our fleet controlled.

A second example is given by the growth of the military and naval power of Japan. Formerly, Great Britain could maintain a fleet in Asiatic waters that was superior to that of Japan. The base at Hong Kong was suitable. But the growth of the Japanese Navy, added to the demands for ships in home waters created by the increases in continental European navies, finally prevented the British from maintaining an Asiatic Fleet strong enough to control in those waters. The British Government realistically recognized the situation, and they negotiated the Anglo-Japanese Alliance. At the Washington Conference in 1921-1922, that Alliance was abrogated and the British gave up the right further to fortify and improve their base at Hong Kong. That base was recognized as being too advanced toward Japan to be of value, considering the strength of any naval force that could be sent to operate from it. The base for any British Fleet that might have to operate in strength in Far Eastern waters

was brought back to Singapore. This shortened the British lines of communication by nearly 1500 miles and increased the Japanese by a similar amount, if the latter were to threaten British or Dutch possessions in the East Indies. British interests in China are, as we see today, more at the mercy of Japan than formerly. Britain has to a considerable extent executed a strategic retreat similar to the one they made from the Western Hemisphere, in order to protect effectively more vital interests to the south and not to undertake the impossible. However, their positions at Singapore and Australia, which are inherently very strong, still lie across lines of maritime communications which are very important to Japan, an island empire, which is not yet economically self-sufficient.

The geographic strength or weakness of an overseas empire also depends, in a large measure, on the relative size of the homeland, as compared to the size of the overseas empire. I have previously stated that our overseas possessions in the Western Pacific, the Philippine Islands, and Guam in its present undefended state, are a great source of weakness to the United States, and that their relative distance from strong Asiatic Powers to that from the United States suggests immediate aggression upon the outbreak of war. Yet the loss of these islands from an economic standpoint, compared to the vast economic resources in the homeland, would hardly be felt.

On the other hand, when we consider the tremendous expanse of overseas territory comprising the British Empire and the large supply of strategic materials produced in the Colonies which are necessary to the very existence of the homeland, the importance of the security of these outlying possessions become a problem which England can never afford to neglect.

The very multitude of British maritime possessions, regardless of the advantages they may have offered the homeland in the way of advancing trade or providing bases of operations for the naval forces, are a source of weakness, when it comes to defense. It will always be a problem for a nation with an overseas empire like England to know just when and where the blow will fall.

In a war with a European maritime power the British Fleet can only provide colonies with an indirect method of protection. As long as they can maintain and assert superiority in the North Sea and around the British Isles, the entire Imperial British system remains secure; but a defeat of the British Fleet means the dislocation at once of the whole system of colonies and other dependencies. Once the fleet is defeated, each separate position throughout the Empire is left to its own resources, and when they are exhausted the position must fall.

Another factor that a nation with a large overseas Empire can take advantage of to protect its overseas Empire

is the possession of strong overseas bases, strategically well located in reference to the vital trade routes throughout the Empire, and having the necessary resources to sustain a naval force operating in the area. These are the three requirements affecting the strategic value of any position - strength, situation or relative position, and resources. Without these, they become a source of weakness, rather than a strength factor to the nation.

Of these three principal conditions, - situation or relative position is the most indispensable; strength and resources may be artificially supplied, but it is impossible to change the situation of a port which lies outside the limits of strategic effect.

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In order to show the influence on naval warfare due to the location of bases overseas, let us consider the position of Great Britain in the Caribbean and Western Pacific, and then compare this situation with the relative position of the overseas bases belonging to the United States in the Central and Western Pacific.

It will be remembered that the expansion of the United States to the South and the opening of the Panama Canal was the beginning of the loss of the British strategic position in the Caribbean area.

Up to the year 1898, when the Spanish possessions changed hands, Great Britain with her British West Indies, was the greatest power in the Caribbean; but the United States pro-

tectorate over Cuba and Hispaniola, our annexation of Porto Rico and the purchase of St. Thomas, St. John and Santa Cruz, together with the Panama Canal and Nicaragua protectorates, and the construction of a first class navy and naval bases to protect the Canal, have made the United States paramount in these waters.

Generally, the military value of overseas bases depends to a large extent on their nearness to sea routes. This value becomes even more marked if, by the lay of the land, the route to be followed becomes very narrow, as we have seen in the Straits of Gibraltar and the English Channel. This is the situation which confronts Great Britain in the Caribbean.

In view of this, and from the fact that navies of all the Great Powers in Europe more or less contain each other close to their homelands, England as well as other European maritime powers have practically signalized their abandonment of any attempt for the present to dispute our control

of the Caribbean Sea.

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The position of the United States in the Western Pacific is somewhat similar to that of Great Britain in the Caribbean. First we have the Hawaiian Islands with a Fleet naval base at Pearl Harbor although in many respects the facilities fall far short of the requirements of a first class naval base. Pearl Harbor - more than 2,000 miles from our home coast - is only one third of the way to any likely physical objective in the Western Pacific.

Then there are the Aleutian Islands, which have been described in a previous presentation, with no developed or defended positions capable of supporting fleet operations.

Guam in its present state of military unpreparedness, and its small harbor with limited facilities, is of little or no value to support offensive naval operations in the Western Pacific. Of course if it were made impregnable by strong fortifications and supplied with an air force superior to anything an enemy might bring to bear in that area, it might when combined with other positions of strategic importance exert considerable influence on naval warfare.

The importance of Midway, Wake, Johnson, Kingman Reef and other small islands in the Pacific lies in their relative geographic position to Hawaii and their use as strategic points for small groups of light forces, or as stepping stones or bases for aircraft operations.

In the Philippines we have our defended harbor at Manila

and other harbors which due to their natural physical characteristics might be used to support limited naval operations.

In order for a fleet to operate from a distant base, it is first necessary to link that base to certain intermediate positions leading back to the homeland, such that the whole chain would form a well knit, compact system from which it could not be dislodged by any but a greatly superior force.

Unfortunately, most of the strategic points between the Hawaiian Islands and the Philippine Islands are mandated territory.

It is not believed necessary to make any further analysis of the influence of overseas bases on naval warfare to arrive at the conclusion that if European maritime powers have signaled their intention to abandon any attempt in the future to dispute control of the Caribbean due to the difficult geographic situation in that area, certainly the problem of ^{the} United States in the Western Pacific presents an even more difficult problem.

No discussion on the influence of geography of naval warfare would be complete without some mention of the subject of logistics.

Logistics may be defined as the art of transporting forces to the field of operations decided on by strategy and maintaining those forces in that field in a condition to fight. As soon as we determine the probable theatre of operations, therefore, we must next consider the geographic conditions which might affect the logistic problem in the theatre.

If the logistic problem produced by a strategic plan cannot be solved then the plan is not practicable and must be abandoned. The converse is also true, if the logistic plan is such as to involve strategic operations that are not feasible then the logistic plan is not acceptable. Thus it is seen that strategy depends on logistics for its effectiveness and no strategic plans should be based on incorrect or impossible logistics. Furthermore, knowing that the logistics of transport at sea and the ultimate distribution of supplies and other needs of the forces afloat concern peculiarly the Commander-in-Chief, the importance of this subject cannot be over estimated. One fleet may start out on a distant operation with a great superiority of fighting strength but if the Commander-in-Chief has to struggle under the disadvantage of trying to solve a difficult logistic problem whereas the opposing Commander can concentrate all his attention and efforts on just the strategical or tactical situation confronting him the initial superiority in fighting strength of the first force may be quickly overcome by the seriousness of his logistic problem.

The solution of logistic problems requires a sound knowledge of both military geography and strategic geography.

For instance in an overseas expedition some of the factual data required in order to make a sound logistic plan is a knowledge of the possible landing places, depth of water, prevailing

winds, surf, tides, character of the beach, covering positions, approach inland, water supply, facilities for camping.

For naval operations we must have a knowledge of the fuel and other supplies required by the fleet, and how they are to be obtained, hydrographic features, bases, lines of communication and their security, enemy ports and resources, and neutral ports in the theatre of operations.

The resources of the hostile country should also be studied, its railroads and other means of communication, its climate, naval bases and ports are also essential.

All this involves a comprehensive knowledge of military geography.

Some of the elements of strategic geography which may affect the logistic situation are:-

- (a) Distance of the theatre of operations from the home coast or source of supply.
- (b) Possession of secure advanced bases.
- (c) Number and location of the lines of communication.
- (d) Availability of other positions for advanced bases.
- (e) Relative position of bases to the lines of communication.

Distances are the controlling factor in many situations. For instance under the present geographic situation, the logistic problem of supplying our fleet alone, while conducting distant offensive operations against any strong European or Asiatic Naval Power, seems most difficult, ~~if not impossible~~.

Then if we consider the fleet accompanied by a train and large expeditionary force, the problem of insuring the safety of the lines of supply over trade routes infested with submarines, aircraft and fast light forces working out of nearby bases along the routes, becomes more **difficult than ever.**

British experience during the World War indicated that about forty pounds of general cargo ^{per man} a day was required to supply an army from an overseas base. An expeditionary force of 200,000 men would thus have to be supplied with 4,000 tons of cargo per day in addition to the fuel and other supplies required by the fleet itself.

Other elements of strategic geography which influence the logistic situation in any theatre of operations have already been discussed under the subject of relative position and distance from home territory so it will not be necessary to repeat them again. There is, however, one other factor which should always be taken into account when making a survey of opposing strengths and that is the elements of strength and weakness in the logistic situation of the enemy. These factors might have a most important bearing on our own strategic plan and logistic plan because of the fact that the facility or difficulty of enemy operations calls for just that much greater or less effort on our part to overcome him.

Now in conclusion of this talk on the influence of geography on naval warfare I will not attempt to make any summary of the whole subject. The outline which has been mimeographed and distributed I hope may be of some use as a reminder of some of the ways you might take advantage of military geography and strategic geography in overcoming the difficulties which confront you in any military or naval situation.

There is just one point that I would like to stress however, and that is that geographic positions have no military value in themselves; they have value only in so far as they favor the action of naval forces against the enemy.

A naval base may have all the primary requisites necessary to support a fleet, it may be self-sustaining and capable of defending itself against attack from the enemy mobile forces and against air raids from the enemy air bases but if it does not occupy a favorable position relative to an important line of communication it can only be of minor importance in the support of naval operations.