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THE CARIBBEAN AREA

DECLASSIFIED IAW DOD MEMO OF 3 MAY 1972, SUBJ:
DECLASSIFICATION OF WWII RECORDS

Naval War College
Newport, R.I.
September, 1937

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C O N F I D E N T I A L

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THE CARIBBEAN AREA

POLITICAL

The Republics of this area are such near neighbors that the United States is particularly concerned by disturbed conditions in any of them, especially in regard to any situation which may involve the danger of European aggression. Not only are they near neighbors, but they occupy a position of strategic importance. In many of these Republics, the United States has large financial investments which also must be safeguarded.

In addition to the application of the Monroe Doctrine in the Caribbean, it is our aim to control the Panama Canal as well as any other canal which may later connect the Atlantic with the Pacific; to hold the military approaches to them; to give reasonable protection to the legitimate American investments; and to encourage and, in certain cases, to maintain peace and political and financial stability throughout the region.

The Platt Amendment gave the United States the right to "intervene for the preservation of Cuban Independence, and the maintenance of a government adequate for the protection of life, property and individual liberty".

The Treaty with Panama in 1903 gave the United States special privileges in the Republic, particularly as to matters of sanitation and public order in Panama and Colon.

In 1907, a somewhat similar treaty was made with the Dominican Republic, except that American supervision over Dominican affairs was limited to the collection of customs.

By a treaty made in 1915, which was to remain in effect for 25 years, Haiti was placed under American supervision.

When President Hoover came into office he established a policy of non-intervention in the Caribbean. This policy has been continued until the present time.

In addition to the non-intervention policy of the present administration, we have also terminated the Platt Amendment giving us the right to intervene in Cuba, we have evacuated Haiti, we have made a new treaty with Panama terminating our right of intervention in that Republic, regardless of our paramount interest in the canal, and we have revised the non-recognition policy in Central America.

The United States still reserves the right to resist aggression by any outside power upon the American Continent, but, presumably, as the existence of our Arbitration Treaties show, we would not attempt to exercise that right until every effort has been made to settle disputes by peaceful means.

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 area; but the United States protectorate over Cuba, Haiti and Santo Domingo,

our annexation of Puerto Rico and the purchase of St. Thomas, St. John and St. Cr  ix, together with the Panama Canal and the Nicaragua protectorates, and the construction of naval bases and a Navy second to none, have made the United States paramount in these waters.

Now that the navies of all the Great Powers in Europe more or less contain each other close to their homelands, England as well as other maritime powers show no present inclination to dispute our control of the Caribbean Sea.

The potential strength of position of the United States in the Caribbean lies along the chain of islands on the north side where Cuba, Haiti, Porto Rico, Culebra and the Virgin Islands form the northern border. These islands are bound to the United States by treaties, by ownership, or other interests. They contribute both to our commercial and naval strength in the Caribbean.

On the west side of the Caribbean are Mexico and Central America, neighbors whose fortunes are bound up with ours, and whose ability, in any event, to interrupt our dominance of this sea area is limited.

On the south, the states of Venezuela and Columbia are likewise unaggressive neighbors whose capacity for interrupting our commercial or military control is small. Of course, Columbia for some time has been more or less hostile to the United States, due to the Panamanian incident, but she has not much to offer an enemy and her position is too

vulnerable to attack so close to the strong defenses of the Panama Canal.

It is to our national interest to continue to encourage the existence of a large number of weak states within the Caribbean area.

ECONOMIC

The monied interests of the United States in the Caribbean total some five billion dollars, and we have a combined import and export trade just short of a billion dollars out of a total annual trade in the area of about one and a half billion dollars.

Recovery in the export-import trade of Latin America and the Caribbean area set in during 1933 and continued through 1934 and 1935. During this period the trade of Latin America as a whole rose by 71% as compared to 55% for the whole world. This discovery of oil in Venezuela and Columbia, the growth of the banana trade in the Caribbean area, and other similar developments, were responsible for this high trade figure.

The most important industries in Latin America are those connected with raw materials partly processed in the areas of production. In the petroleum fields of Venezuela, Columbia, Peru, Bolivia and Argentine, the oil, in many cases, is refined before shipping, and thus an important local industry has grown up. In the mineral regions of Mexico, Columbia, Peru, Bolivia and Chile, and in some of the agricultural areas, there has also been developed considerable

industrialization through processing. This is particularly ~~the~~ of sugar production in the West Indies, and of fruit raising in Columbia and Central America.

The location of some of the important commodities and raw materials exported from this general area is shown on these slides.

The platinum in Columbia and Venezuela amounts to about 25% of the world's supply. Bolivia supplies 21% of the total tin and 10% of tungsten produced in the world. Cuba 11% of the world's supply of chromium. Bolivia also supplies about 10% of the tungsten produced in the world. Other important raw materials not shown on the slide are the large copper mines in Chile and Peru and the nitrates produced in Chile.

TRADE ROUTES

A glance at the chart shows that peace-time trade routes from the South Atlantic ports of South America to Europe are flanked by the Cape Verde Islands, the Canaries and Madeira off the west coast of Africa. This chain of islands covers about 1200 miles of the trade route.

The southern end of this Madeira-Cape Verde line is at the junction of the trade routes from South America and the Capetown route to European ports, while the northern end of the line flanks the route from the Mediterranean ports to the north coast of South America, the West Indies, and Panama.

Another important position in the Eastern Atlantic in its relation to trade routes in the Caribbean area is the

Azores. These islands flank the trade lines from Gibraltar to the Greater Antilles and also the lines from Northern Europe and the Channal ports to the British West Indies, British Guiana and Panama.

All these islands except the Canaries belong to Portugal; the Canaries belong to Spain. In view of their strategic importance, England has had a defensive and offensive alliance with Portugal since 1703.

Details of the physical characteristics of these islands and their possible use to naval and military forces, together with a description of the ports along the west coast of Africa and the Atlantic coast of South America which might be of military value, will be found in the pamphlet on the Strategic Area of the Eastern Atlantic, the Caribbean and Bermuda, which has been issued to the class today.

The importance of these ports was realized during the World War when the homeward-bound convoys from Argentine, where England depends more and more for her food supply, were assembled at Dakar French Senegal, just to the east of Cape Verde Islands. The route from there to the Argentine was patrolled by British cruisers, which fueled at Abrolhos Bank, outside the three-mile limit off the coast of Brazil, until Brazil finally came into the war in 1917.

In considering possible enemy positions in the Western Atlantic which might be used to support limited military

operations, note the position of Bermuda, lying directly off our coast on a line perpendicular to our most vital industrial area, and only 600 miles off-shore. But this group of islands without any strong flanking positions to the north or south of it has little to offer an enemy in the way of an advanced base of operations.

Next we will take up the trade routes inside this strategic area of the Caribbean.

Although the United States has a fair trade with most of the larger islands in the West Indies, the Panama Canal is by far the most strategic point in the whole area on account of the trade routes running through it and the fact that it is an important Fleet base of operations. The trade routes from Colon to the southern and eastern ports of the United States are:

- (1) To the Gulf ports via Yucatan Channel.
- (2) To the Atlantic Coast ports of the United States via Yucatan Channel and the Florida Straits.
- (3) To the Atlantic Coast ports of the United States via the Windward Passage between Cuba and Hispaniola.
- (4) The route via Mona Passage between Hispaniola and Porto Rico usually followed by the oil tankers from Venezuela.

The routes leading from Caribbean ports to Europe are:

- (1) Colon to Northern Europe via Mona Passage.
- (2) Colon to the Mediterranean ports via Anegada Passage between the Virgin Islands and Anguilla Island.
- (3) From the Gulf ports to Europe via North of the Bahamas or through Providence Channel. This route passes close by Bermuda.
- (4) From Venezuela to Northern Europe via Guadeloupe Channel, or to Gibraltar via Martinique Channel.

It was previously stated that generally the military value of overseas bases depends, to a large extent, on their nearness to sea trade routes. This value becomes even more marked if by the lay of the land the route to be followed becomes very narrow, as in the case of the Straits of Gibraltar and the English Channel. This is the situation which confronts the maritime powers of Europe having trade routes entering the Caribbean Sea.

STRATEGIC AREA OF THE CARIBBEAN

We include in the Caribbean area the Gulf of Mexico, the Caribbean Sea, the islands in and the various countries bordering off these bodies of water.

An examination of the geographical features discloses an area of land and water, roughly, 8,000 miles east and west and 1,200 miles north and south, the northern boundary

of which coincides with a part of the southern boundary of the United States, and within the southwestern boundary of which lies the Panama Canal and the route of the proposed Nicaraguan Canal.

The West Indies, in which we are primarily interested today, form the northern and eastern barrier of the Caribbean.

SUBDIVISION OF THE WEST INDIES

Jamaica, Cuba, Hispaniola and Porto Rico form the Greater Antilles, and the semi-circle of smaller islands to the east the Lesser Antilles. The Spaniards used to call the Lesser Antilles, which are exposed to the prevailing north-easterly trade winds, the Windward Islands, and the Greater Antilles the Leeward Islands, from their more sheltered position. This classification is no longer used, the terms Windward and Leeward being now applied to two groups of British Islands in the Lesser Antilles.

For the purpose of this presentation, we will group the West Indies Islands as follows:

Cuba, an independent republic, and the largest island in the West Indies. It has as a dependency the Isle of Pines.

Next in size is Hispaniola, comprising Haiti at the western end, Santo Domingo at the eastern end.

Then come the American possessions of Porto Rico, St. Thomas, St. Croix, St. John, and some neighboring islets and bays belonging to the United States.

The British possessions in the West Indies may be divided into

six groups: (1) The Bahamas; (2) Jamaica with Turks, Caicos and the Cayman Islands; (3) The Leeward Islands, comprising the British Virgin Islands (Tortola, Virgin Gorda and Anegada), Anguilla, St. Christopher, Nevis, Montserrat, Barbuda, Antigua, Redonda, and Dominica; (4) The Windward Islands including St. Lucia, St. Vincent, the Grenadines and Grenada; (5) Barbados; (6) Trinidad and Tobago.

The French possessions in this area are; (1) Saint Bartholomew, (2) Guadeloupe with its dependencies Desirade and Marie Galante; (3) Martinique and (4) French Guiana.

The Dutch Possessions consists of the jointly owned French and Dutch island of St. Martin; the Dutch islands of Saba and Saint Eustatius; and Curaeaso with its dependencies Bonaure and Aruba.

British Guiana and its Dutch neighbor Surinam on the north coast of South America, British Honduras in Central America, and the principal ports on the Spanish Main including Panama, should also be considered in making any strategic study of this Caribbean area.

It is well to remember that, unless recent surveys have been made, charts in this general area are totally unreliable. Many of the present charts in use were made from running surveys which were taken from 50 to 100 years ago. Surveys are proceeding in accordance with the commercial interests and naval demands such as the recent survey of the Gulf of Paria but there are still many places in the West Indies and particularly along the north coast of South America where due caution must be taken in using the old charts.

As the Panama Canal is probably the most valuable strategic point in the whole Caribbean due to the fact that it is a fleet base and that its possession is absolutely necessary to maintain rapid communication by water between the Atlantic and Pacific Coasts of America, I will first point out the general physical characteristics of the terrain surrounding this region and the hydrographic features which might be taken advantage of to support military and naval operations in defense of the zone, including defense against an overland attack.

The main mountain axis and the canal perpendicular to it divide the terrain surrounding the canal into four natural subdivisions; the Northeast, Northwest, Southwest and Southeast areas. The first two are on the Atlantic side and the other two are on the Pacific side.

The two northern areas are much more broken up by mountains and more densely covered by vegetation and tropical jungle than the southern areas. There is only one road on the Atlantic side, and that is the one running between Fort Randolph, Colon and Gatun. There are a few trails, but they are only suitable for foot troops or pack animals in file.

The Northeast area has a mountain ridge 1,000 to 3,000 feet high which skirts the coast from 8 to 10 miles inland. The whole area is broken and hilly and covered with tropical jungle.

The coast line to Las Minas Bay is bordered with mangrove swamps and coral reefs. From Las Minas Bay to Porto Bello landing is even more difficult. Both these bays are covered by the coast artillery fortifications at Fort Randolph. Further to the eastward there are several secure anchorages for a large naval force in San Cristobal Bay and the Gulf of San Blas, but there are no trails or roads suitable for an overland expedition of any size.

The Northwest area has a mountain range running parallel to the coast about 10 or 12 miles inland. The country is intersected by ridges generally perpendicular to the shore and extremely hard for troops to advance across.

From Fort Sherman to the Chagres the coast is bordered by coral reefs and from the Chagres westward there are alternative cliffs and sand patches with possible landings, but most difficult.

Chiriqui Lagoon and the vicinity afford good anchorages for a large fleet and at Almirante Bay there is a wharf with 26 feet of water alongside, but the advance from these points overland to the Canal Zone is over a long difficult trail only suitable for foot troops and pack animals.

Of course, we all know that heavy guns, no matter how many or how large, can never give absolute protection to the Panama Canal without mobile troops to defend the Canal from overland attack. The mobile defense of the Canal demands

throughout the zone a road and trail system that will permit thorough reconnaissance and prompt and free communication and movement by the defending mobile troops.

There is more or less of a prevalent idea that the jungle of the Canal Zone, and particularly in the northern areas, will prove, in the event of war involving an overland attack on the Canal, a military factor in favor of the defender through the difficulties an enemy will encounter in making his way through it. On the other hand, many of the officers who have actually reconnoitered these areas believe that an enemy advancing overland on the Canal through the area where the jungle is thickest will have an advantage of cover which might possibly compensate him for the disadvantage of having to cut his way through. Regardless of these opinions, the Northern areas of the Canal Zone are by no means considered to be as vulnerable to attack by an overland expedition as the southern areas.

The Southwest area has a strip of country between the continental divide and the coast which is about 10 miles wide at the Canal and 15 miles wide at San Carlos on the west coast of the Gulf of Panama, 40 miles from the Canal. The first 10 miles of this strip, after leaving the Canal, are very mountainous and covered with jungle; the next 8 miles are more or less of a rolling country sloping to the coast, while the next 18 miles are mountainous. Beyond San Carlos the country is very rolling.

The main defensive position in this area extends along the high ground south of the Caimito River to the coast, thence along the coast to Bruja Point. It is an excellent position, but about 18 miles long.

There is a good road from this position at Chorrera back to the Canal, and a ferry which connects with the Balboa side. Another road runs along the west bank of the Canal from Pedro Miguel to Las Cascadas. From Chorrera there is a good trail which could possibly be used for wheeled travel that runs westward nearly to the Costa Rican boundary line.

To project operations against the Canal in this area, a base might be seized at Montije Bay or Bahia Honda, or from other positions closer to the Canal. Certainly, this seems to be the most practicable line of overland attack from the Pacific side and the jungle in no way enters into the problem. Not only is this area free from jungle, but for a distance of from 7 to 20 miles west of the Miraflores and Pedro Miguel Locks the whole terrain is more or less of an open country.

The Southeast area along the coast is flat and heavily wooded for a distance inland of three or four miles. The spurs from the mountains in this area extend only a short distance and then sink into the sloping arable plain which slopes moderately for 12 to 15 miles into the sea.

About the only possible landing place on this coast is at the mouth of the Chepo River, but this is hardly feasible,

due to the difficulties in the way of mines and naval operations which an enemy would likely encounter in an attempt to enter the Gulf of Panama. There is a fairly good fleet anchorage at San Miguel Bay.

This Southeast area has two good roads, - one from Panama City to Gamboa, and the other from Panama to the Tapia River, about 5 miles east of Old Panama, then continues as a fairly good road for several miles inland along the coast. There is also a road which leads up to the recently constructed Madden Dam.

The vulnerable points throughout the 47 miles stretch of the Canal are usually considered to be:

- (1) The locks at Gatun, Pedro Miguel and Miraflores and the walls between the locks.
- (2) The spillways at Gatun and Miraflores and the Madden Dam.
- (3) The hydro-electric power plant at Gatun with the transmission lines running along the Canal, and the auxiliary steam electric plant at Miraflores.
- (4) The Isthmian water supply system.
- (5) The emergency locks.
- (6) The wharves, drydocks, storehouses, magazines and oil tanks at the Canal terminals.
- (7) The Panama Railroad, particularly the tunnel at Miraflores, and the bridges at Gamboa and Monte Lirio.
- (8) The cable termini and the radio stations.

These vulnerable points are comparatively secure against naval bombardment or attempted landing of a large expeditionary force from any position within the defensive coastal area due to the strong fortifications at the strategic positions, the mobile forces and the favorable hydrographic conditions for defensive measures within the coastal areas.

In order to provide a common basis for understanding this term "defensive coastal area", it will be remembered that the "Joint Action of the Army and Navy" defines the term Coastal Zone as the whole area of the navigable waters adjacent to the seacoast and extends seaward to cover the coastwise sea lanes and focal points of shipping approaching the coast.

A Defensive Coastal Area is a part of a coastal zone and of the land and water adjacent to and in-shore of the coast line within which defense operations will involve both Army and Navy Forces, and in consequence require effective coordination.

The defensive coastal area on the Atlantic side of the Canal Zone is the area included within the arc of a circle of 50 miles radius from the seaward extremity of the west breakwater. On the Pacific side, it is the area included by the arc of a circle of 50 miles radius with Bruja Point as the center.

Within these areas it will be noted that on the Atlantic side of the Canal the hundred fathom curve is nearly 10 miles

off the shore line which makes possible the use of mines to cover all approaches to the Colon entrance. Listening posts could also be set up in this area to detect submarine operations. The inner harbor is further protected by a long breakwater with two narrow entrances which could easily be netted.

On the Panama side, the depth of water in the Gulf of Panama is such that it is possible to mine the approaches much further to seaward than on the Atlantic Coast. Off the Channel entrance to Balboa there is sufficient anchorage room for a fleet of almost any size. Such anchorages could easily be protected by mines. Other fleet anchorages in the Canal Zone are off Toboga Island, Gatun Lake and Colon Harbor.

There is no complete plan to meet all the complex situations apt to confront the defenders of the Canal. When war threatens, the Governor, the Commanding General, and the Commandant of the District meet and decide on a common plan of action to fit the existing situation.

In order to be prepared to overcome any probable enemy operations against the Canal, the Local Naval Defense Forces will be organized at the outbreak of hostilities as follows: the inshore patrol, the off-shore patrol, the escort force, and the attack force.

The forces now in the Canal Zone or assumed to be there shortly after strained relations are: 1-CL, 2-ID, 3-SS,

BUSHELL, 4 mine-sweepers, and about 3 Squadrons of VPs.

These Local Defense Forces control the water communications within the naval district, conduct naval operations against enemy forces in the district waters, and cooperate with and support the Army in repelling attacks on coastal objectives. The primary interest of the Army in such naval operations is the information obtained from the Navy as to enemy movements, in order to make the desired dispositions of its mobile forces and of the mobile elements of harbor defenses.

The peace time strength of the mobile troops in the Canal Zone is about 13,000. In war, this number is increased about three times.

The installation of heavy gun fixed defenses consist, roughly, of the following:

Atlantic Side:

- 2 16" guns, range over 40,000.
- 4 14" guns, range 22,500.
- 16 12" mortars, range 19,000.
- 10 6" guns, range 14,500.
- 2 12" long range guns.

Pacific Side:

- 6 14" guns, range 14,500.
- 2 16" guns, range 45,000.
- 12 12" mortars, range 19,000.
- 2 6" guns, range 14,500.

The anti-aircraft batteries consisted of about 66 - 3" AA guns distributed around the vital sectors enclosing the locks.

8 - 16" guns with a range of about 45,000 yards, as shown on the slide, and a new battery of 5" anti-aircraft guns have been recommended for some time, but I am not sure what replacements have been made to date. There are 4-14" railway guns which can be shifted quickly from one side to the other. There are also about 40 - 155 mm guns and 40 - 75 mm guns.

Next to invasion, perhaps, one of the greatest threats for interruption damage might come from enemy air attacks against the locks or other vulnerable points previously mentioned. Those attacks might come from bases in Central America or the north coast of South America, or even Jamaica, if such places could be properly supported.

The defense against such attacks consists of about 66 - 3" anti-aircraft batteries which, unless recently re-located or replaced, were entirely inadequate against high altitude bombing attacks. There are also anti-aircraft listening posts located at distant points along the approaches to the Canal.

The 3" anti-aircraft batteries where now installed would, in certain cases, find that their maximum range is well short of the bomb-release circle of high altitude bombers, thus seriously reducing their anti-aircraft effect.

The authorized complement of Army aircraft for defense

of these vulnerable spots and for scouting was:

Observation	20
Bombing	12
Pursuit	72
Utility	<u>4</u>
Total	108

I understand that a recent project was approved to increase this number to 150 pursuit, 52 bombers, and 52 amphibian observation planes.

There is one thing that should be remembered in any situation where the defense of the Panama Canal is concerned, and that is that it has a fortress defense. Usually, the artillery is used to support the infantry, but in a fortress defense the reverse is the case, - the infantry supports the artillery.

It is not believed necessary at this time to go into any details regarding the weather in this general area, except to say that the conditions found during the wet and dry season might have a most important bearing on the success or failure of the military operations.

CUBA

The position of Cuba, covering the two gateways to the Gulf of Mexico is similar to that of the British Isles in its relation to the North Sea. Lessons which have been learned in the North Sea area, therefore, might apply equally in the

Gulf of Mexico, if Cuba were in the hands of an enemy of the United States.

If the possession of or controlled by the United States, it projects our previous most advanced position in Florida 300 or 400 miles further towards possible objectives.

As you are all more or less familiar with the political and economic situation in this island and the general physical characteristics, I will merely touch on some of the more important strategic positions in Cuba capable of supporting military operations.

HAVANA

The importance of Havana is that it is the closest port to the mainland of the United States, it occupies a central position to the two gateways of the Gulf of Mexico, the natural physical characteristics make it easily defensible, and it has greater resources than any other position in the West Indies. The prolongation of Cuba to the eastward divides the Atlantic from the Caribbean, and the rail communications from Havana extend the resources from this center to the ports of Nipe Bay, Guantanamo Bay, and Santiago Bay, - all occupying controlling positions over the Windward Passage.

NIFE BAY has the natural physical characteristics required of a first class fleet base. It is about 11 miles long and 3 to 7 miles wide, with a narrow entrance 1/4 to 3/4 of a mile wide, which could easily be protected against

torpedo attack. The average depth of water in the anchorage space is about 6 fathoms. The port of Antilla on Nipe Bay is connected by branch line to the main railway, and if the present rate of development is continued this port will soon be one of the most prosperous in the island.

GUANTANAMO BAY - 570 miles from Havana and 24 hours by rail from that port - has a harbor 10 miles long and a greatest width of about 4 miles. There is also a large inner basin approached by an extremely narrow channel on which are located the ports of Esqueron and Calmanera, both joining the main line by rail. It could be easily defended and protected against torpedo attack by nets. There are good landing beaches for seaplanes, and a poor landing field for land planes.

SANTIAGO HARBOR - about 40 miles to the west of Guantanamo - has a land-locked harbor somewhat similar to that of Havana and could be used as a secondary base for a limited number of light forces.

CINFUEGOS - about 195 miles from Havana - is a modern city, with a population of over 30,000 inhabitants. It is located on one of the finest harbors in the West Indies, about 11 miles long and 3 to 5 miles wide. Although its position does not command any particular line of communications, taken in relation to Santiago and Guantanamo, they form a

strategic line on the south coast of Cuba, which may be considered as a long base of operations with three ports of retreat. Had this port, so close to Havana, been used by Admiral Cervera instead of bottling up his fleet in Santiago, it would probably have been a much harder nut to crack.

HAITI

About the only position in Haiti capable of supporting naval operations is Samana Bay. The Gulf of Gonaves, although frequently used during peace time fleet operations, is only an open roadstead, and could not be protected against enemy torpedo attack.

SAMANA BAY - less than 100 miles from Mona Passage - has sufficient anchorage space for a fleet with average depth of water of 15 fathoms. The anchorage space is about 5 miles wide and 10 miles long. The entrance is full of rocks and shoals, which would form a natural protection against submarine attack, but if sufficiently buoyed access would not be difficult.

Other advanced positions which might be used to control Mona Passage or Anegada Passage are San Juan Puerto Rico, Vieques Sound, and the Virgin Islands.

SAN JUAN has a comparatively small harbor, but it could be used to support a limited number of light forces. It occupies a commanding position in the center of the West Indies barrier, could be easily defended, and has the additional

advantage of having sufficient resources to supply almost any number of vessels that could find anchorage room in the harbor.

VIEQUES SOUND and CULEBRA

Vieques Sound, off the eastern end of Puerto Rico, is an excellent fleet anchorage, partially enclosed by the islands of CULEBRA and Vieques.

CULEBRA is a small barren island with only a few inhabitants, but has a protected harbor for small craft and seaplanes.

VIEQUES ISLAND is 21 miles long and 6 miles wide, extremely fertile and supports a population of some thousands. Both islands have strong natural positions for defense of the fleet anchorage, and a rapid sortie could be made either into the Atlantic or the Caribbean.

VIRGIN ISLANDS - About 20 miles to the eastward of Vieques Sound across the Virgin Passage lie the Virgin Islands. They consist of a group of about 50 islands, but only three are of any size or importance:- St. Thomas, St. John, and St. Croix which lies 40 miles south of the other two. All are within a radius of 50 miles and support a total population of about 20,000.

These islands as you will remember were bought by the United States from Denmark in 1917 for \$25,000,000. From

1919 until 1931 they were governed by the Navy Department, but since that time they have been taken over by the Civil Administration, and an attempt has been made to rehabilitate them.

The only harbor in this group capable of supporting any military operations is St. Thomas. It is not large enough to hold a fleet, but would make an excellent base for light force operations or submarines and aircraft. The harbor could be easily defended and protected against enemy torpedoes.

The weakness of the position of the United States in this area only begins when we reach the eastern border of the Caribbean, where we find a chain of islands still remaining in the hands of European nations, strategically well located in so far as relative position from our homeland and the Panama Canal is concerned as to offer many advantages to an enemy attempting to dispute control of this sea area.

These islands are strung along a north and south line, often only a few miles between them. Some of the smaller islands have good harbors, but with few exceptions they have not the area, depth, resources and natural physical characteristics requisite for good naval bases.

THE BAHAMAS, on the northern flank of our strong potential position in the Caribbean, are within easy aircraft range of our air bases which might be established in Florida and Cuba and are not advantageously placed, geographically or

strategically to support offensive naval operations of a European power against the United States. There are, however, a few positions of military value to an enemy controlling this area.

TURKS ISLAND, a dependency of Jamaica, has the British cables from Bermuda, Jamaica and Barbados. Twelve of the islands are equipped with radio. Reports have been received of extensive harbor construction in the Island of Eleuthera.

Among those places which might be used as suitable subsidiary bases are Eleuthera Island, Nassau and Rum Cay.

ELEUTHERA ISLAND, just to the south of N.E. Providence Channel, contains the harbor of Hatchet Bay. This bay affords secure anchorage for at least 6 destroyers or submarines and could also be used as a seaplane base. On shore, there are good sites for landing fields. There are practically no resources in this island.

NASSAU, a little to the westward of Eleuthera Island, also occupies a commanding position in respect to N.E. Providence Channel. It is located on New Providence Island. The harbor of Nassau could accommodate several destroyers, cruisers or submarines. There are limited storage and repair facilities at Nassau and a marine railway. A limited food supply is also available. In addition to the facilities for seaplane anchorage in Nassau, there is a large fresh water lake in the middle of the island about 4 miles in diameter.

Good sites for landing fields are also available on this island.

NUN CAY occupies a strategic position in relation to the northern entrance to Crooked Island Passage. It would make an excellent seaplane base, and the harbor is suitable for small craft and patrol boats. It occupies a central position in the Bahama barrier.

British positions in the Lesser Antilles which might be used for subsidiary bases are Antigua, St. Lucia, Barbados, Grenada, the Grenadines, and Tobago.

ANTIGUA contains English Harbor, where Nelson refitted some of his ships during his pursuit of Villeneuve to the West Indies and back, in 1805. The harbor entrance is narrow, but inside is a suitable anchorage for a few light draft vessels. There is a radio and cable station on the island. All these positions for subsidiary bases just mentioned could be used as seaplane bases, and landing fields could be constructed without great difficulty.

ST. LUCIA. Port Castries, the capital, is situated on the western coast of the island, about 9 miles from the northern end. It stands at the head of a sheltered bay about a mile long, suitable as an anchorage for a few destroyers or submarines. It is one of the few harbors in the West Indies where a modern wharf can be found. There are limited storage and repair facilities, and small quantities of food and fresh water

may be obtained. There is also a radio and cable station on this island.

BARBADOS has no natural harbor, though the open roadstead of Carlisle Bay on the west coast is well sheltered, except for westerly winds. There is anchorage space in this roadstead for a limited number of small light forces. There is a drydock of 1200 tons capacity, cable and radio communications, limited supply of food and water, and minor repair facilities. The island is 21 miles long and 14 miles wide, with many suitable sites for landing fields. Its position 150 miles from Trinidad and 100 miles from St. Lucia makes this island an outpost to the southern part of the eastern barrier.

GRENADEA occupies a position at the southern end of the barrier, 90 miles north of Trinidad. The town of St. Georges, the capital, stands on a peninsula towards the southern end of the West Coast, sheltering an almost land-locked harbor known as the Carenage. It is called the Carenage from its having been in the old days a favorite place for careening ships. The harbor affords anchorage for a few small craft or light draft vessels. Taken in connection with Port Egmont and Clarke Court Bay on the southern end of the island, Grenada might support military operations for a limited number of light forces. There is a radio and cable station at St. Georges, but the resources of the island are few. The

harbors are suitable for seaplanes, and there are sites ashore for landing fields.

THE GRENADINES, centrally located in the Windward Islands and about 100 miles from Trinidad, Barbados and St. Lucia. Hillsborough Bay, in the western part of the Island of Carriacou, is more or less an open bight, but it affords good shelter, except from westerly winds. There is plenty of anchorage space for 5 or 6 vessels of almost any draft. There are practically no resources in the island. Like other islands in this area, there are sites for landing fields, and a few small seaplanes could be accommodated at Hillsborough.

TUBAGO ISLAND, located as an outpost 60 miles northeast of Trinidad, is the island from which Defoe drew his description for "Robinson Crusoe". There are many small bays along the coast of this island, the best of these being King Bay and Man of War Bay at the northern end of the island. Both of these could be made suitable as subsidiary bases of operations for a limited number of light forces and for seaplane operations. There is a radio station on the island, but facilities for repair or food supplies are practically nil.

TRINIDAD is the most southerly of the West Indies and lies about 8 miles off the coast of Venezuela, to which it is closely related in origin and character. Together with the mainland of Venezuela, it encloses a large inland sea called the Gulf

of Paria, which only has two entrances, both easily defended.

Because of its location both in reference to Europe and the oil fields of South America, and at the cross roads of the European route to the Canal and the north and south route between the east coasts of the Americas, it is a point of great strategic importance in this area, and the country which holds it is in a position to project further military operations against the Panama Canal and threaten the shipping in the Caribbean.

The comparative distance to Port of Spain from the normal bases of operation of the most likely opposing fleets are:

San Diego, Cal.	4,000 miles
English Channel	3,600 miles
Panama	1,200 miles
New York	1,900 miles
Azores	2,300 miles
Bermuda	1,220 miles
Vieques Sound	512 miles
Guanatanamo	1,160 miles

It is only by a study of these distances and relative position that brings out the difficulties to be overcome by own and enemy forces in protecting their trade routes and other interests in this area.

There is sufficient anchorage room in the Gulf of Paria to berth a fleet of any size. It would not be difficult to protect both entrances by mines or nets. At present, the defenses consist of six 6" guns and eight 3" anti-aircraft guns. The natural physical characteristics are eminently suited for troop defense.

Two landing fields have been developed in the island, and there are secure anchorages and good sandy beaches for hauling out large seaplanes. Trinidad also has a radio and cable station and an unlimited supply of oil. About 9,000,000 barrels of oil are produced annually. There is a floating drydock at Port of Spain capable of taking ships up to 3,000 tons.

Other British possessions in the Caribbean area are British Guiana, British Honduras, and Jamaica.

BRITISH GUIANA has no harbor of sufficient size to support naval operations. Its close distance to Trinidad, however, make the resources of the country and a population of over 300,000 available for the support of military operations. There are also some suitable sites for landing fields in this British possession.

In BRITISH HONDURAS there is a potential British base at Belize, but the relative position of British Honduras to our strong position at Panama, close by and within short range of shore-based aircraft, makes this a poor location

from the point of view of strategic geography.

JAMAICA contains a fine harbor in Portland Bight, capable of affording a secure anchorage to a fleet of almost any size. There are only two entrances, both capable of being easily defended from shore and not difficult to protect against torpedoes. There is a radio and cable station at Kingston. The resources of the Island are not sufficient to support large military operations, as most of the supplies are imported.

The French possessions in this area capable of supporting limited naval operations are Martinique and Guadeloupe with its dependencies and French Guiana on the mainland of South America. Except for Trinidad, these two French islands are the largest and most prosperous islands of the Lesser Antilles.

ST. PIERRE, once the main port of Martinique, was destroyed by eruption of Mt. Pelee in 1902, and the present port facilities, like most of the Windward and Leeward Islands, are merely open roadsteads. Fort de France, however, is a fairly well protected anchorage in which there is space available for about two divisions of light cruisers or destroyers.

Aside from the ability of some of these islands to support military operations it might be of interest to remember, when cruising in this area that Josephine came from Martinique and that Lord Nelson's wife came from Nevis just to the west of Antigua. Now to get back to the physical characteristics

of the islands in the West Indies -

GUADELOUPE consists of two mountainous islands separated by a narrow stream crossed by a highway bridge. The only anchorages are the two large open bights on the north and south side of the island, but they are studded with rocks and shoals and would be of small military value.

The only ports existing on the coast of French Guiana are formed by the mouths of the rivers, and they are too small to be of any military value; but as in this region no hurricanes ever occur, there is little risk in anchoring in any convenient place off the coast.

The most important point in the Dutch West Indies is Willemstad in Curacao. Its importance is due to the fact that it tranships most of the trade of Venezuela. The oil refineries are on Santa Anna Bay, on which Willemstad is located, and a Caracas Bay, a few miles to the eastward. A division of destroyers, submarines, or several seaplanes could securely base in this general area.

This completes the description of the physical characteristics of the more important locations in the Caribbean area capable of supporting naval or military operations.

Of course, there are many other harbors and anchorages in neutral territory which might be used for seaplanes or other naval operations directed against the Panama Canal, if such bases could be supported. The Gulf of Curacao offers a secure harbor for a whole fleet, with an entrance 2-1/2

miles wide which could be netted, although it is too deep to be mined off the entrance. The Gulf of Venezuela with the Port of Maracaibo might also be used to project operations from a much closer position to the Canal Zone. Both positions afford excellent shelter for seaplanes, have good sites for landing fields, and are located outside the hurricane belt.

One of the important factors in the Survey of Opposing Strengths is the means of obtaining and denying information and the communication facilities available. This slide shows the main cable lines and the principal radio stations throughout the Caribbean area.

Note the network of cables leading to Panama over three different routes. See also the large number of cable stations belonging to the United States occupying a central position in the West Indies, Guantanamo, Hispaniola and Puerto Rico. These are flanked on each side by British stations in Cuba and the Lesser Antilles and joined together by a loop around Hispaniola. The weakness of our position seems to be that there is no American owned cable running to the east coast of South America.

The opening of the Panama Canal has added a new meaning to this strategic sea area, such as the Suez Canal brought earlier to the Mediterranean. A brief comparison of the

general geographical situation in these two areas shows quite a similar picture. Both seas- the Mediterranean and the Caribbean - have a continent rather sparsely inhabited on the southern side. Both have nations of highly industrialized races on the northern side. Both seas are tropical or semi-tropical in climate. Both have artificial canals, making them highways of inter-oceanic commerce vital to more than one strong naval power. Both contain islands and colonial possessions belonging to strong naval powers whose homeland is far distant from these strategic sea areas.

Both seas in the past have been the battle ground for national supremacy in sea power.

In the Mediterranean, first the Phoenicians were conquered by the Assyrians; then the Greeks conquered the Persians; and the Romans conquered the Carthaginians. It was also here that the Fleet of Napoleon was conquered by Nelson. In more recent times, we have seen how a strong Italian naval power, taking advantage of her strategic geographical position, has limited the area of British naval operations in the Mediterranean to the two extremities.

Similarly, the fate of European States has often been decided in the Caribbean. For some two hundred years the wars of Portugal, Holland, Spain, France and England were fought in this sea area. First, Portugal was driven from the Caribbean, then Holland disappeared. The Colonies of Spain slipped one by one from her hands, until finally the

Spanish Main came to an end with the Battle of Santiago, in 1898.

Since the opening of the Panama Canal, new lines of commerce and air transport have filled the West Indian waters, until now the Caribbean has become the crossways of a world trade.

In addition to the purely commercial aspect of this aviation development, there are two factors of outstanding strategic significance involved.

The first of these is the advantage which will accrue to a nation outside Latin America controlling these international systems, due to the good-will and cooperation of the countries through which the systems operate.

The other important strategic factor involved is the influence which this aviation development, with its attendant ground facilities and foreign concessions, would have on the security of the Panama Canal in the event of War or threatened War between the United States and any power or combination of powers outside the Americas. This becomes more apparent when we consider the location of more than twenty-five well developed air fields and bases within the perimeter of a circle of 1,100 miles radius and centered at the Panama Canal.

Pan American Airways and its affiliated lines form a continuous service from the United States via Central American countries and Panama to Santiago, Chile; Buenos Aires, Argentine; Rio de Janeiro, Brazil; and thence through the West Indies to Havana, Cuba; and Miami, Florida.

A long over-water hop has also been established between Kingston, Jamaica; and Barranquilla, a distance of about 500 miles. It was chosen in order to have a rapid connection with the Canal Zone. By this route the distance between Miami and Cristobal is under 1800 miles; by the other route, through Central America, 2,200 miles.

It should be noted that only the independent West Indian Republics and the American and British islands are served by Pan American Airways; the Dutch and French Colonies are avoided.

It will also be noted that all the capitals of the Central American Republics are served by the main line. The governments of these republics made their concessions dependent on this condition.

From this brief description of the air routes joining the Americas, it can be seen at a glance that the territories of all other foreign naval powers in this strategic sea area lie in a region that is comparatively vulnerable to amphibious attack. All outlying positions are within flying distance of the continent, and all shipping and supply lines in the Caribbean lie within the scope of air influence.

In addition to the commercial fields, there is a well developed fleet air base in the Canal Zone and several Army air bases. Guantanamo, the Virgin Islands, and many other places under the influence of the United States are strategi-

cally well located in this area for setting up others.

In conclusion, I will not attempt to make any summary of this factual data regarding the various positions in the Caribbean area and their ability to support military and naval operations.

I merely wish to remind you again of the fact that each physical characteristic of the various island formations and bordering states in this area merits consideration as a means of facilitating or obstructing movement, and of providing opportunity for offense, defense, and support.

When you consider the various physical characteristics of these fixed positions in relation to such factors as other positions under own and enemy control, own and enemy vital lines of communication, own and enemy mobile forces and possible objectives in the sea area under dispute, the strength and weakness of the strategic position of the United States and of possible enemies in this Caribbean area will undoubtedly come to light.