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JOINT  
ARMY AND NAVY  
OPERATIONS

Lecture  
by  
Lieutenant Colonel Walter Krueger, U.S.A.

*N.Y.C.*  
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## I.

### INTRODUCTION

The subject of this lecture - Joint Army and Navy Operations - is a very important one to us, in view of the geographic situation of our country and its overseas possessions, which makes it extremely probable that, in the next war in which we are likely to be engaged, such operations will play a very prominent part.

The importance of Joint Operations has, indeed, been recognized by our highest military authority, THE JOINT BOARD, which has laid down policies and procedures to govern such operations. But, aside from this, such operations have not so far been given anywhere near the attention that they deserve.

As the subject is far too large to be covered with any degree of thoroughness within the time available, I shall endeavor to give you merely a general picture thereof, stressing those features that appear to me to be the most important ones.

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## II.

### JOINT OPERATIONS IN GENERAL AND THEIR COORDINATION

JOINT ARMY and NAVY OPERATIONS may be defined as operations, usually requiring tactical coordination, conducted by forces of the Army and Navy for the accomplishment of a common mission.

Such operations may be divided into the following general classes:

- a. Coast Defense.
- b. Cases where forces of one service operate with those of the sister service to accomplish a mission (task) which is normally a function of such sister service.
- c. Attacks against a Shore Objective by Land and Sea.
- d. Joint Overseas Movements.
- e. Landing Attacks against Shore Objectives.

It is vital to the success of Joint Operations that the actions of the Army and Navy forces engaged therein, be so closely coordinated as to produce the most effective mutual support.

This coordination would be difficult enough to attain, if each of the two forces engaged performed merely its normal functions: the Army force those pertaining to land operations, inclusive of air operations over the land, and the Navy force those pertaining to sea operations, inclusive of air operations over the sea. Unfortunately, however, the difficulties involved in securing this coordination are very materially increased by the overlapping of the functions of the two forces and by other complications. It is effected -

- a. Under the Principle of Cooperation;
- b. Under the Principle of Paramount Interest; or
- c. Under the Principle of Unity of Command.

Under the Principle of Cooperation, the force of each service engaged, operates under its own commander, and coordination is effected by the two commanders concerned cooperating with each other, differences of opinion being settled by mutual agreement, or by reference to higher authority.

Under the Principle of Paramount Interest, authority and responsibility for the coordination are vested in the commander of the force whose functions and requirements are, at the time, of the greater importance.

Under the Principle of Unity of Command, the responsibility for, and the power to direct the operations, are vested in an Army or a Naval Officer designated to exercise such command.

In modern times, coordination of the actions of Army and Navy forces engaged in Joint Operations has been effected either under the principle of cooperation, or under the principle of unity of command, the former governing in the great majority of cases. This is not surprising, when it is remembered that coordination under the principle of paramount interest - as that term is understood today - is of comparatively recent origin, and that, since the elder Pitt's time, it has never been the practice for the British to place the conduct of joint operations in the hands of a single commander, that is, in the hands either of a naval or a military officer invested with power to exercise unity of command and, accordingly, to decide between naval and military exigencies. They apparently regard the friction that may develop between two commanders whose actions in a joint operation are coordinated under the principle of cooperation, as of little importance in comparison to the mistakes which a single commander, exercising unity of command in conducting such an operation, would make because of his lack of familiarity with the powers and limitations of the sister service.

"It used to be thought," says the great British naval writer,

Julian Corbett, in this connection, ".....that joint-expeditions should have a single commander-in-chief. The idea is logical - even obvious - one of those fallacies which are said to 'stand to reason'; but our experience proved it was a fallacy and that the only way to work such joint operations was with two co-equal commanders-in-chiefs, acting in perfect and loyal harmony. With a single commander-in-chief, experience tells that the needs and limitations of one Service will too often be overridden by those of the other." (Essay entitled Staff Histories).

To be sure, proponents of the principle of cooperation can point to the capture of Louisburg by General Amherst and Admiral Boscawen, to the capture of Quebec by General Wolfe and Admiral Saunders, and to other similarly successful joint operations in which the actions of the forces engaged were coordinated under that principle. But the operations in the two cases cited were not endangered by an enemy fleet, and the interest of the Army forces engaged was in reality paramount.

The joint expedition which the French sent against Ireland during the winter of 1796-1797 and in which General Hoche exercised unity of command over the Army and Navy Forces engaged, may similarly be cited as a horrible example of the failure of the principle of unity of command. But the failure of the expedition was in no sense due to the failure of this principle, but to other causes too numerous to mention.

(The troops, in this case, some 20,000 men, were carried on the naval vessels, each ship of the line carrying 600, each frigate 250 men. The French naval forces were inefficient, the naval commanders neither competent nor amenable to Hoche's command. Conditions were so bad that Hoche was forced to exclaim: "God keep me from having

anything to do with the Navy". Aside from delays and inefficiency, the principal cause of the failure of the expedition was the weather).

That joint operations may be successfully conducted either under the principle of cooperation or under that of unity of command, is well illustrated by our own history. In the Donelson Campaign, for example, the actions of the Army and Navy forces engaged under General Grant and Commodore Foote, were successfully coordinated by General Grant exercising unity of command. In the joint operation against Vicksburg, however, the actions of the forces under General Grant and Admiral Porter, were quite as effectively coordinated under the principle of cooperation.

That the method used in coordinating the actions of the forces engaged in joint operations is not necessarily the only factor, nor even the predominant one, upon which success or failure depends, is well illustrated by the Allied operations against the Dardanelles, which will be referred to later on.

At the present time, it is prescribed in our services that the coordination of the actions of forces of the Army and Navy engaged in Joint Operations, be effected either under the Principle of Paramount Interest, or under the Principle of Unity of Command, the geographical location of the theater of operations, the character and relative strength of the enemy forces, and the consequent nature of the contemplated operations determining which of these two methods is to be used.

"Under the Principle of Paramount Interest", as already stated, "authority and responsibility for the coordination are vested in the commander of the force whose functions and requirements are, at the

time, of the greater importance." (Joint Action of the Army and Navy, Chap. II, par. 4).

"In the exercise of coordination under this principle:

"(a) The commander of the force of the service having paramount interest is authorized and required to designate the missions of the Army force and the Navy force participating.

"(b) The commander of the force of the service not having paramount interest is required to execute the mission assigned by the commander of the other service and to subordinate the operations of his own command to those of the commander having the paramount interest. In executing such mission the commander occupying the subordinate status does not yield the actual command of his force. He shall, however, be held responsible by the next higher commander of his own service for the proper subordination of his activities to those of the commander having paramount interest.

"(c) The assignment of paramount interest to one service in a joint operation does not confer paramount interest upon that service in all subordinate operations thereunder. The senior officer of the service having paramount interest in the main operation shall designate the service to have paramount interest in subordinate operations as far as the necessity for this designation can be foreseen. In subordinate or local operations in which paramount interest has not been assigned it shall be determined by the senior officer present of the service which has paramount interest in the operation to which the local operation is immediately subordinate." (Ibid., par. 5.)

"Unity of Command," as already stated, "embraces the responsibility for, and the power to direct, operations of forces of the Army and Navy having a common mission." (Joint Action of the Army and Navy, Chap. II, par. 7).

"Unity of command empowers the commander to coordinate the operations of the forces of both services assigned to his command by the organization of task forces, the assignment of missions, the designation of objectives, and the provision of logistic support; and to exercise control during the progress of the operations to insure the most effective effort toward the accomplishment of the common mission." (Ibid., par. 9).

"Unity of command does not contemplate the issue by the commander of instructions as to dispositions for, or methods of, operation in the accomplishment of missions assigned solely to forces of the service to which the commander does not belong, nor control of the adminis-

tration, discipline, or technique of the operations of such forces." (Ibid., par. 10)

"The appointment of a commander authorized to exercise unity of command..... carries with it the power, whenever in the opinion of such officer such action is necessary, further to delegate this authority by appointing a subordinate commander, either Army or Navy, to exercise unity of command over task forces organized within his command, or to coordinate the operations of these forces under the principle of paramount interest." (Ibid., par. 11).

"Where the magnitude and character of the operations warrant, a commander exercising unity of command shall have a headquarters separate and distinct from those of the commanders of the forces of the two services, and shall deal with these forces as coordinate elements of his command." (Ibid., par. 8)

AIR OPERATIONS are, in addition, governed by the following special provisions:

"When a situation develops in which a force of one service can support by aircraft only, a force of the service having paramount interest in the particular operation, unity of command for the conduct of the participating air forces shall be immediately vested in the commander of the force to be supported." (Ibid., Chap.III, par. 14).

"When air units of the Army and the Navy are combined into one task force for the accomplishment of a common mission, the commander assigning the mission shall designate an officer to exercise unity of command over such task force during the conduct of the operation". (Ibid., par. 15).

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The methods laid down by THE JOINT BOARD for coordinating the actions of forces of the Army and Navy in Joint Operations, likewise apply to Independent Operations of a special character in which such forces are engaged.

The term Independent Operations refers to independent operations of forces of the Army and of the Navy within the same or within strategically interdependent theaters of operations, which require coordination in time or in the assignment of missions and objectives, although tactical support of the major forces of one service by the major forces of the sister service is impossible.

In such independent operations, the necessary coordination of the actions of the two services is to be effected by the inclusion



of appropriate provisions in a Joint Army and Navy War Plan; or by the mutual approval of missions assigned to the respective forces by separate war plans of the War and Navy Departments.

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All Joint War Plans, moreover, are required to contain a statement of the method of coordination to be employed. To quote:-

"Each war plan shall prescribe for each phase of the campaign the method of coordination between the forces of the Army and the Navy which is to be employed. Where coordination under the principle of paramount interest is directed, the plan will state which service has the paramount interest. Where unity of command is specified, the plan will state whether an Army or a Navy officer is to be designated to exercise such command." (Ibid., Chap. II, par. 12).

The methods of coordination laid down for our services by THE JOINT BOARD are excellent and it would seem as if they should suffice to accomplish the purpose for which they are designed. But it must always be remembered that none of the rules prescribed is a panacea. Whether joint operations are conducted under the principle of paramount interest, or under that of unity of command, not only cooperation, but intelligently loyal cooperation and mutual confidence between the two services, are imperatively necessary. Such cooperation and mutual confidence can only be assured if each service is thoroughly familiar with the approved methods of coordination and has a thorough understanding of its own functions, powers and limitations, and a proper appreciation of the functions, powers and limitations of the sister service.

Each service may safely be assumed to possess a thorough understanding of its own functions and of those of its sister service. But before proceeding, it will perhaps be a good plan briefly to recapitulate their general functions, substantially as laid down by THE JOINT BOARD for our services:

The General Functions of the Army in war are:-

TO CONDUCT LAND OPERATIONS -

- a. In defense of our territory.
- b. In hostile territory, any advance overseas being dependent upon the Navy.
- c. In support of the Navy for the establishment and defense of naval bases.

The General Functions of the Navy in war are:-

TO CONDUCT SEA OPERATIONS -

- a. In defense of our territory and our interests at sea; and
- b. Directed toward the defeat of the enemy.  
These functions include the following:
  - a. To defeat or contain the enemy fleet.
  - b. To control vital sea communications by assuring safe passage to friendly vessels and denying passage to vessels supporting the enemy.
  - c. To control coastal zones and sea lanes.
  - d. To escort and support Army forces engaged in overseas operations.
  - e. To establish and defend advanced naval bases.

Each service, no doubt, thoroughly understands its own powers and limitations, but, in general, does not properly appreciate the powers and limitations of its sister service.

This is not surprising, for the two services are quite distinct and independent agencies and ordinarily do not operate together. Moreover, they operate under totally different conditions and, in consequence, the training, views and attitude, the organization, administration and requirements of one service differ very materially from those of the other service.

It seems scarcely necessary to point out that, although these

difficulties can not be removed, their effect can be largely minimized by education designed to produce in each service a better appreciation of the powers and limitations - and, I am tempted to add, of the difficulties - of the sister service than obtains today. Much has, indeed, already been done along this line, for example, by sending student officers of one service to the schools of the sister service; by the exchange of instructors; by the establishment of local joint planning committees; and by holding joint Army and Navy Exercises more frequently than formerly. But, it seems to me, much more could and should be done to study the whole question of Joint Army and Navy Operations at the various service schools and War Colleges, in order to make sure of producing that close harmony of understanding between the two services that is vital to success in war.

### III

#### THE VARIOUS CLASSES OF JOINT OPERATIONS

We may now turn to the various classes of Joint Operations. In discussing these, it is proposed to devote the bulk of the available time to the most important ones and to dwell upon the others in so far as necessary only.

##### 1. Coast Defense.

Let us start with Coast Defense. This involves substantially dispositions and operations designed to protect the nations' coasts and friendly shipping in the waters adjacent thereto against attack.

The effectiveness of Coast Defense, aside from the sufficiency and efficiency of the means provided therefor - a subject that lies

beyond the scope of this lecture - depends upon:-

- a. The suitability of its organization;
- b. The proper functioning of the two services charged with its conduct; and upon
- c. The adequacy of the mutual support which the two services render each other.

Our problem of coast defense differs materially from that of any of the other great powers, with the exception of Japan, in that we are fortunate in having a great ocean east of us and another one west of us. These oceans are tremendously valuable to us, since they give us a very much greater measure of security than is possessed by any European power vis-a-vis any other European power.

Our coast defense system is, accordingly, based primarily upon our strategically admirable geographic position and is designed with the object of repulsing any attacks that might conceivably be launched against our coasts and friendly shipping in waters adjacent thereto. The term "coast" is intended to cover the coasts of continental United States and Alaska, the Panama Canal, our possessions in the Caribbean, and Hawaii. The Philippines are purposely omitted, since they present a special problem, a discussion of which would lead too far afield.

An attack in force against our coast is scarcely probable in the strategic presence of our fleet. But, if our fleet were defeated, contained, or absent in a distant theater of operations, serious attacks against our coast are a possibility.

Such attacks may consist of major operations with the object of invasion, or of sea, land, and air operations in the nature of raids,

will usually involve joint operations conducted by Army and Navy Forces, inclusive of Air Forces, and will, in general, be undertaken for the purpose of -

- a. Securing an area for use as a naval base or for use as a point of departure for invasion;
- b. Securing an area, in order to deny it to the defender;
- c. Securing an area for use as an air base for launching air raids or for establishing local air superiority; or
- d. Destroying any of the defender's naval forces that are sheltered by fortifications.

These joint operations will usually involve landing attacks in force, the success of which requires, as a preliminary condition, that the attacker possess local control of the sea and air. The attacker may be expected to make full use of tactical surprise and to avoid fortified areas in so far as he can do so.

Landing attacks in force directed against fortified areas may be expected to consist of :

- a. Reconnaissances in force by all types of ships and aircraft - though a preliminary reconnaissance may be completely omitted to ensure tactical surprise - accompanied by mine sweeping, minor raids, and feints;
- b. Long range bombardments conducted by the heavy ships and aircraft to neutralize the defender's artillery;
- c. Support of the landing, to cover debarkation from the transports, approach to the beach and landing thereon, by naval gunfire and aircraft; and

- d. Employment of the necessary forces to secure harbor facilities suitable for debarkation of the heavy army impedimenta and for use as a base.

In landing attacks in force which are not directed against a fortified area, the attacker may be expected to make the maximum use of tactical surprise, so as to give the defender no time to concentrate against the landing force. Such reconnaissance as the attacker may make, will probably be made on a wide front and will be promptly followed by debarkation and attack of the beaches under cover of supporting naval gunfire. He may be expected to attack on a wide front in several waves with the object of gaining an extensive beach-head as quickly as possible.

Independent naval operations directed against our coast may be expected to be limited to -

- a. Operations incident to controlling the sea. These may involve the observation or blockading of any of our naval forces while they are sheltered by fortifications.
- b. Operations against shipping. These may involve a blockade of part of our coast and attacks on shipping in our coastal zone, in approaches to our harbors, and even in those harbors. It is to be observed in this connection, however, that a close-in blockade by surface vessels is no longer feasible when the defender has effective submarines and land-based aircraft available.
- c. Minor attacks against our coast. These will generally be limited to bombardments by ships or aircraft of weakly defended positions, to small landing raids, and to feints.

- d. Operations preliminary to joint operations. Such operations may include all forms of reconnaissance; the seizure of areas suitable as landing fields preparatory to supporting a landing; blockading, mining and counter-mining operations; attacks on outer defense elements of a fortified area; and feints.

In connection with joint operations and independent naval operations directed against our coast, it should be borne in mind that a naval bombardment of land positions exposes the naval force conducting it to obvious hazards. Ships are much more vulnerable to the fire of the defender's artillery and to his aircraft bombs, than his defensive shore installations are to naval gunfire. Besides, the ammunition normally carried by naval vessels is not well suited for use against land targets. Moreover, ships engaged in bombarding shore positions will be exposed to mines and to attacks by submarines and land-based aircraft, and, since the whole operation is a local one, to the concentrated effort of the defender. An attacker is, accordingly, not likely to use his capital ships in the bombardment of fortified positions, if such use "jeopardizes in any appreciable degree the ability of the bombarding force later to meet on terms of at least equality the enemy naval forces.....Under modern conditions, in an attack upon a fortified harbor, no naval force of capital ships will attempt to force the passage of, or to run by, the fortifications except under the most unusual circumstances, when the end in view is vital to the success of the campaign. This applies whether or not enemy forces are operating on shore against such a

fortified harbor." (Joint Action of the Army and Navy, Chap.V, par. 12).

In connection with hostile operations against our coast, it should further be remembered that the season and the weather have a marked effect upon the powers and limitations of naval operations. The attacker's naval operations in northern latitudes, for example, will be materially restricted by winter weather, and will probably come to a standstill during the period of heavy storms. Thick weather may favor the attacker, however, by covering his minor offensive operations, but heavy fog, while it lasts, will generally put a complete stop to all of his offensive operations.

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From what has been said, it appears that "the forms of hostile action which an enemy may employ against, or in the vicinity of, our coastal frontiers, either singly or in combination, may include any one or more of the following operations:

- "a. Attacks on coastwise shipping in the coastal zone or in approaches to harbors.
- "b. Attacks on naval forces of the defender, either off the coast, entering a harbor, while inside the harbor, or while debouching therefrom.
- "c. Air bombardments of the seacoast and contiguous areas from forces well out to sea.
- "d. Blockading of the seacoast, either against shipping alone or against our naval forces.
- "e. Mine laying off the seacoast or the entrance of harbors.



- "f. Naval raids on undefended or lightly defended coastal areas, primarily for demolition purposes and involving air or gun bombardments, or landings with limited objectives of forces composed of sailors and marines without intent to occupy any part of the frontier for any considerable period of time.
- "g. Feints, involving part or all of the operations of c, d, e, and f above.
- "h. A broad general reconnaissance, especially with aviation, to determine the nature, extent, and location of defending forces.
- "i. Local reconnaissance, either -
  - (1) To determine the practicability of taking advantage of surprise and an unprepared state of the defense in order to secure an area before the defending forces are ready;
  - (2) As part of an attempted landing; or
  - (3) In force against a fortified area to determine its state of preparedness, or to clear the way for a serious attack.
- "j. Seizure of land bases for aviation fields preliminary to further operations.
- "k. Bombardment by gunfire and aviation for the neutralization of land artillery and for the destruction of important shore objectives.
- "l. Minor attacks, possibly involving small landings, against outlying elements of the defense.
- "m. Mine sweeping, countermining, and attempts to destroy nets or other obstacles.
- "n. Torpedo fire into harbors.
- "o. Blocking action against harbor entrances.
- "p. Penetration by naval vessels into a harbor or water area.
- "q. Major landing operations against beaches, with support by rapid-fire guns on ships and by aviation.
- "r. Seizure of harbor facilities for debarkation of heavy equipment and for the establishment of a base." (Ibid., par. 14).

"The parts played by the different types of naval craft in the above operations include:

"With surface craft. - Information and reconnaissance; seizure or destruction of shipping; combat with naval vessels; mining or countermining; mine sweeping; launching air operations; blockade; closing harbors or channels; clearing underwater obstacles; attacking nets; cutting cables; torpedo attacks on ships outside or inside harbors; laying smoke screens; gun bombardment; making feints; forcing a passage; and making and covering landings either for demolition purposes or for minor raids or raids in force.

"With submarine craft. - Attacks on combatant vessels; information and reconnaissance; blockade; raids on nets or other obstacles; cutting cables; mining; minor bombardments; making feints; and minor landings.

"With aircraft. - Information and reconnaissance; attacking ships and shore objectives with machine-gun fire, high explosive bombs; destroying obstacles; torpedo attacks on ships; landing observers or spies; gaining control of the air; spotting gunfire; and laying smoke screens." (Ibid., par. 15).

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An examination of the possible operations which an enemy may conduct against our coast, indicates that our coast defense must embrace the following:

- "a. The observation of the coastal frontier and the sea beyond as far as circumstances permit or seem to demand.
- "b. The protection of shipping in waters adjacent to the sea-coast.
- "c. The attack of enemy vessels in waters adjacent to the sea-coast.
- "d. The resistance to enemy approach to the sea-coast.
- "e. The protection of the seacoast, and especially strategic harbors, against raids.
- "f. The defeat of enemy landing attacks on the seacoast, including the provision of defensive installations on shore and in the waters adjacent thereto.

"g. The initiation of counter-offensive operations to eject a landed enemy." (Ibid., par. 17).

Our coast defense is accordingly organized with a view to meet these requirements. It may be said to be divided into what - for want of better terms - might be called the indirect defense of the coast, and the direct defense of the coast, though these terms are not used by the Regulations.

The indirect defense of the coast devolves upon the fleet, whose function in that connection it is to defeat or contain the enemy fleet and to control vital sea communications by denying passage to vessels supporting the enemy. Its operations, if successful, may serve to keep the enemy away from our coastal frontiers.

The term "indirect defense" is applied to the role of the fleet in connection with coast defense, in order to emphasize that the fleet, if it is to perform its functions effectively, must not be connected nor involved with the direct defense of the coast, not even by implication resulting from the terminology used, but must be left entirely footloose and free to operate as it chooses in carrying out its mission. Failure to observe this principle may well spell disaster.

The commander-in-chief of the fleet must not, in other words, be held responsible in the slightest degree, even by implication, for the direct defense of any part of the coast of continental United States, the Panama Canal, or Hawaii. The responsibility for their direct defense must be placed squarely and wholly upon other shoulders. If the commander-in-chief of the fleet were burdened

with any responsibility for such defense, he would be tempted to look over his shoulder while seeking the enemy fleet, and that would be fatal.

The direct defense of our coast devolves upon the Army and the Naval Local Defense Forces, and its joint organization is based substantially upon existing corps areas and naval districts, though their boundaries are not strictly followed. This departure provides, as far as practicable, geographically coterminous boundaries within which the Army and Navy forces employed in coast defense will be, respectively commanded by an officer of their own service, and thereby assures effective coordination between those forces.

Thus, the Panama Canal Department and 15th Naval District form one independent, joint defense command, the Hawaiian Department and 14th Naval District a similar one, and - again omitting the Philippines from the discussion - the coast of continental United States is divided into the following Coastal Frontiers:

- a. North Atlantic Coastal Frontier: Extends from the northern boundary of the United States to the southern boundary of Virginia.  
Commanders: To be designated later, if and when necessary.
- b. Southern Coastal Frontier: Extends from the southern boundary of Virginia to the Rio Grande.  
Commanders: Army - Commanding General, 4th Corps Area.  
Navy - Commandants, 6th, 7th and 8th Naval Districts.
- c. Pacific Coastal Frontier: Extends from northern boundary of Washington to the southern boundary of the United States. It also includes Alaska.  
Commanders: Army - Commanding General, 9th Corps Area.  
Navy - Commandants, 11th, 12th and 13th Naval Districts.

- d. Great Lakes Coastal Frontier: Extends from Isle Royale, inclusive in Lake Superior, to Cornwall Island, exclusive, in the St. Lawrence River.

Commanders: Not to be designated unless the area as a whole becomes indicated as an important theater of operations.

Each of these coastal frontiers is divided into sectors and each of the latter, if necessary, into subsectors. In order to give a picture of the subdivision of coastal frontiers, it will suffice to describe briefly that of the North Atlantic Coastal Frontier. This is divided into the following sectors and subsectors:

a. New England Sector:

Boundaries: Northern - Northern boundary of the United States.  
Southern - Long. 72-30 for Long Island; thence Connecticut River and Northern boundary of Connecticut to New York boundary, all inclusive.

Commanders: Army - Commanding General, 1st Corps Area.  
Navy - Commandant, 1st Naval District.

Sub-sectors: Portland, Boston, and Newport Sub-sectors.

b. New York Sector:

Boundaries: Northern - Southern boundary of New England Sector, all exclusive.  
Southern - Point Pleasant, Bordentown, both exclusive; Trenton, inclusive.

Commanders: Army - Commanding General, 2d Corps Area.  
Navy - Commandant, 3d Naval District.

Sub-sectors: Long Island and New Jersey Sub-sectors.

c. Delaware - Chesapeake Sector:

Boundaries: Northern - Southern boundary of New York Sector, exclusive.  
Southern - Southern boundary of Virginia.

Commanders; Army - Commanding General, 3d Corps Area.  
Navy - Commandant, 4th Naval District, for Delaware Sub-sector. Commandant, 5th Naval District, for Chesapeake Sub-sector.

Sub-sectors: Delaware and Chesapeake Sub-sectors.

In time of peace, the functions of this organization are largely confined to the preparation of joint plans for coast defense based upon the various joint basic war plans prepared by THE JOINT BOARD which indicate, inter alia, by reference to one of a number of clearly defined categories of defense, the extent of frontier defense measures to be taken. From the moment a particular joint basic war plan goes into effect, however, this organization begins to function, the extent of the frontier defense measures taken being governed by the particular category of defense indicated in that plan.

Since the designation of water and land areas involved in coast defense, by reference to Coastal Frontiers, Sectors and Sub-sectors, will not suffice for practical purposes, the following terms are used to designate such areas more specifically:

a. "The Coastal Zone." This "is the whole area of the navigable waters adjacent to the seacoast and extending seaward to cover the coastwise sea lanes." (Joint Action of the Army and Navy, Chap.V, par. 26, b.)

b. "Coastwise Sea Lanes." These "are the sea areas adjacent to the seacoast that include all the usually travelled routes of coastwise shipping." (Ibid., par. 26, a).

Since both services are mutually interested in each other's activities in seacoast operations, coastal zones are generally subdivided into two classes of areas:-

"First. Those parts of the coastal zone in which our activities are essentially naval, but of interest to the Army either as indicative of the presence of the enemy or as defining his objectives,

termed 'Defensive Sea Areas;'

"Second. Those parts of the coastal zone and adjacent seacoast in which our operations concern actively both Army and Navy forces, termed 'Defensive Coastal Areas.'

c. "Defensive Sea Areas are the waters of the coastal zone included within limits established and announed by proclamation of the President...in time of actual or impending war, within which limits the navigation of all vessels shall be controlled by the naval forces of the United States for the better protection of the ports and other interest of the United States.

d. "Defensive Coastal Areas are those parts of the coastal zone and the adjacent seacoast which require an intensive joint defense by reason of their inclusion of valuable harbors, stretches of the coast where landings can be made in connection with attacks on our harbors, or on industrial centers on the coast which are subject to attack from the sea. When pertaining to a fortified harbor, they include" the following three water areas: (Ibid., par. 29.)

e. "The outer harbor area," which "is the water area extending seaward from the outer ends of the entrance channels to a fortified harbor and within the range of the harbor defense batteries.

f. "The inner harbor area," which "is the entire water area of a fortified harbor inside the inner ends of all the entrance channels to the harbor.

g. "The harbor channel area," which "is the water area included between the outer harbor area and the inner harbor area, and which comprises all the entrance channels to the harbor." (Ibid., par. 26, c, e, and d.)

h. The seacoast areas outside the limits of Defensive Coastal Areas.

The direct defense of the coast, as already stated, devolves upon the Army and the Naval Local Defense Forces.

The Naval Local Defense Forces comprise -

Such surface and subsurface vessels and aircraft as may be made available by the various Naval Districts, and include small submarines, old destroyers, mine vessels, and aircraft tenders, together with such local vessels as are taken over for naval district use in time of war.

The Army Forces involved comprise -

a. The Harbor-Defense Forces, which consist of Harbor-Defense troops (GAC) reinforced by Army air elements, of railway and tractor artillery usually allotted to seacoast defense, and, when necessary, of a limited number of mobile troops of all arms; and

b. The Mobile Army Forces, which consist of troops of all arms, inclusive of air forces.

The specific functions of the Naval Local Defense Forces are:

a. To control the coastal zones and sea lanes within naval districts;

b. To conduct sea operations against enemy forces in district waters; and

c. To cooperate with and support the Army in repelling attacks on coastal objectives.

For the purpose of carrying out these specific functions, the Naval Local Defense Forces of a Naval District may be organized into any one or all the following task forces: namely, The Inshore Patrol, The Offshore Patrol, and The Escort Force.

a. The Inshore Patrol is usually assigned the task of conducting operations in Defensive Coastal Areas and of controlling shipping in the Coastal Zone. It may be composed of section bases, submarine bases, destroyers bases, and air stations; coastal lookout system, including light ships, lighthouses, Coast Guard stations, and special lookout stations; motor boats, submarine chasers, yachts, aircraft, mine sweepers, guard ships, aircraft tenders, and additional forces in special cases.

In view of the paramount interest of the Army in Defensive Coastal Areas involving harbor defenses, the Commander of the Inshore Patrol should establish his headquarters near those of the Harbor Defense Commander, preferably in the same locality. He should be in direct communication with the latter commander and with all naval activities of the Defensive Coastal Area.



The duties of the Inshore Patrol are:

- (1) To execute the Navy's part of all joint plans for Defensive Coastal Areas; for example, to install and operate contact mines, nets and booms, to install and maintain fixed underwater obstructions which are component parts of Navy barrages, to operate gates through nets, etc.
- (2) To search for, locate and report enemy vessels operating close to the coast and off harbor entrances, and, if they are submarines, to attack them.
- (3) To sweep channels that lie close in to the coast and off harbor entrances and are needed by our naval forces and merchant shipping, and to clear mine fields laid by the enemy.
- (4) To patrol the outer limits of Defensive Coastal Areas and to give the harbor defense commander prompt and full information of the approach of hostile or friendly vessels, even of those of the Offshore Patrol, such information being conveyed directly to the nearest element of the Army communication system.
- (5) To patrol the areas in which obstacles are planted, to protect the obstacles and to prevent light craft from going over them.
- (6) To operate a system of piloting shipping through Defensive Coastal Areas and of control of shipping in Defensive Sea Areas.
- (7) To maintain a guard ship at or near harbor entrances to see that all vessels leaving or entering port give the proper recognition and clearance signals, and to transmit orders to shipping.
- (8) To furnish routing instructions to all merchant vessels departing without escort.
- (9) To maintain a coastal lookout system along the district coast line by use of Coast Guard stations and Lighthouse Service, and special lookout stations to prevent communication between the shore and enemy vessels.
- (10) To maintain through the Lighthouse Service in the district, the system of buoys, lights and other navigational aids regularly in use, with such modifications as are dictated by military necessity.
- (11) To render prompt aid to merchant shipping and naval units in case of collision, breakdown, etc., in port or along the coast.
- (12) To exercise naval control of harbors through the captain of the port, in case the Treasury Department requests that such control be exercised.

b. The Offshore Patrol is usually assigned the task of covering those parts of the Coastal Zone not covered by the inshore patrol, particularly the sea lanes and the Defensive Sea Areas. It may be composed of destroyers, submarines, mine sweepers, gunboats, eagle boats, yachts, aircraft tenders, aircraft, and additional types in special cases.

The duties of the Offshore Patrol are:

- (1) To patrol the Coastal Zone outside of those parts assigned to the inshore patrol.
- (2) To gain information, to report the same, and to attack enemy forces sighted.
- (3) To augment and support the main armament gunfire of the harbor defenses.
- (4) To lay mine fields and to sweep against enemy mines outside the field of operations of the inshore patrol.

c. The Escort Force is assigned the task of escorting convoys within the district waters and of attacking such enemy forces as may be encountered. It may be composed of any suitable combatant vessels that are available, and may include aircraft.

In addition the foregoing task forces, a Coastal Force may sometimes be organized for a specific part of the Coastal Zone involving more than one Naval District. It may consist of suitable available combatant naval vessels assigned to such Naval Districts, combined for the purpose of taking over the naval activities of patrolling, combat, and conduct of shipping within that part of the Coastal Zone.

The specific functions of the Harbor-Defense Forces are:

- a. To maintain and operate the Harbor Defenses.

A Harbor Defense is an Army command which consists of a fort or forts with their personnel, armament and accessories, including controlled mines, under-water listening posts, fixed under-water obstructions in connection with controlled mine barrages, and the supporting aircraft provided for the defense of a fortified harbor.

Harbor Defenses are designed -

- (1) To provide an effective seaward defense for vital strategic points such as great centers of population, commerce and industry, navy yards, coaling or fueling stations, locks, dams, etc.;
- (2) To keep the enemy at such a distance from the entrance to a water area that our naval forces may find safe shelter there and may debouch therefrom and take up battle formation with the least hostile interference and -

(3) To deny the enemy entrance to or occupation of a harbor or other water area which might serve as a base for land or naval operations or both.

D. To conduct the beach defense within the Defensive Coastal Areas. Since this is precisely like that conducted by mobile forces elsewhere on the seacoast, it will be discussed later.

The specific functions of the Mobile Army Forces are:

- a. To reinforce the harbor-defense forces in the Defensive Coastal Areas if and when necessary; and
- b. To conduct the beach defense of the seacoast by opposing and repulsing enemy landing attacks directed against the seacoast outside of the limits of Defensive Coastal Areas.

The first item need not detain us long, since it will suffice to point out that harbor defense forces are supposed to conduct the local beach defense within Defensive Coastal Areas, for which purpose a limited number of mobile troops is usually assigned to harbor defense. A further reinforcement of such areas by mobile troops will, therefore, not take place, in general, until it becomes evident that an attack in force involving landings is to be launched against them and that a considerable mobile force will be required by them for beach defense.

Beach Defense, which is the principal function of the Mobile Army Forces, requires a more extensive discussion.

Enemy landing operations in force directed against our coast must be opposed by all our available Army and Navy forces. But, since it is neither possible nor desirable to defend the entire shore line outside of Defensive Coastal Areas in equal strength everywhere, the Army must place its dependence largely upon rapid

concentration of elements of its strategic reserves at the threatened points. It is accordingly of the utmost importance -

- a. To locate the approaching hostile force at sea at the earliest possible moment and to maintain it under observation;
- b. To interfere with such a force as far offshore as practicable to prevent or delay its approach; and
- c. To resist its advance in coastal waters and at the shore, taking full advantage of the unfavorable situation in which the attacker is placed just prior to and during landing.

The enemy may, in general be expected to attempt landings in several places. Some of these attempts may be feints but one or more of them are apt to be made in strength. Should enemy forces succeed in gaining a foothold on shore in any locality, reserves should be promptly despatched to defeat such forces or to hold them in a restricted locality, while an effort is made to cut them off from their seaward support.

The fundamental principle to be observed in beach defense is to defeat the enemy at or before he reaches the shore.

Much depends in beach defense upon adequate preparations. Hence, the most likely landing places, both as regards ease of landing and as regards probable objectives of the enemy, should be determined by careful study of the coast line and all possible preparations made for the defense of such places.

A thorough preparation for such defense against an enemy landing in force would involve the following for any locality -

- a. The construction of barbed-wire entanglements and other obstacles reaching below and above the water line and of machine-gun positions located so as to cover the obstacles.

b. The construction of mutually supporting strong points consisting of automatic rifles, machine guns, 37 mm guns, infantry howitzers, and 75 mm guns, to serve as a nucleus for the shore line resistance to be offered the enemy.

c. The selection and preparation of successive defensive positions in rear and on the flanks of the section of shore line to be defended, and of a final defensive position, so located as to cover the probable objective of the hostile landing force.

d. Making provision for -

- (1) Distant reconnaissance by aircraft and naval vessels to determine enemy approach in the Coastal Zone, and to keep contact with him.
- (2) A complete joint system of signal communications connecting all land, air and sea elements with each other to insure that information of the enemy will reach shore posts of command and will reach them promptly.
- (3) An offensive by Army and Navy air forces to secure control of the air and to destroy approaching enemy carriers and transports.
- (4) Patrol of beach defenses by outpost detachments, aircraft, etc., to give timely warning of actual landing operations.
- (5) Bombardments by heavy Army artillery and aircraft to keep enemy vessels at a distance, in order to prevent effective support of the landing and to increase the difficulties of debarkation.
- (6) Determined resistance with light and medium artillery fire, bombs and aircraft machine-gun fire to approach of boats carrying enemy troops to shore, in support of strong points.
- (7) Supporting strong points by aircraft and other mobile troops.
- (8) Counter-attacks by local reserves, supported by artillery fire, to destroy enemy forces that have landed, or, if this is impossible, to confine the enemy's advance to a limited strip along the beach and to continue the attacks by aircraft and submarines against the enemy's transports, supply ships, carriers, and small landing boats.
- (9) Employment of strategic reserves in counter-offensive action, or to resist the advance of the enemy toward his objective.

Communications.

In order that the Army and Navy Forces charged with the direct defense of the coast may function effectively and render each other prompt and adequate support, it is essential that each of the two services provide and operate a communication system that permits the rapid transmission of information and instructions between the various defense elements of its own service and between them and those of the sister service. Such communication system must employ all forms of communication and must be complete, inclusive of signals, panels, wave lengths and codes. It is of vital importance that both services be trained together in times of peace in its use, in order to insure complete familiarity with it.

It is likewise of the utmost importance that information of the enemy reach interested headquarters of the Army and Navy as quickly as possible. This requires not only proper means of rapid communication, but proper routing of the information as well. Reports from elements of the Offshore Patrol should, in general, be routed to the senior Army and Navy Officers in the area, that is, to the Sector Commanders. Reports from elements of the Inshore Patrol should, on the other hand, be transmitted by all available means in the most direct manner from naval elements to batteries, forts, and command posts of the Army.

A code capable of reporting naval contacts with enemy forces should be known and thoroughly understood by both the Army and the Navy.

Contact reports should be made of the approach of all enemy or doubtful vessels approaching Defensive Coastal Areas or other important sections of the coast and should include the nature and

directions of the movements of such vessels. A system of identification signals for all friendly naval vessels approaching Defensive Coastal Areas should likewise be provided.

Coordination.

The actions of Army and Navy Forces charged with Coast Defense are coordinated in accordance with the following general principles:

a. In an attack made against our coast by an enemy moving on shore along the coast, our Army forces will have paramount interest.

b. In an attack made in part on shore along the coast and in part by sea, our Army and Navy forces will conduct their respective defense operations independently until the attacking forces approach so near their objective as to render coordination of the actions of our Army and Navy forces necessary, whereupon paramount interest will be vested in our Army forces.

c. "In operations against enemy forces approaching the coast on, under, or over the sea, paramount interest will be initially vested in the Navy.

d. "When an attack upon a specific part of the coast becomes actually threatened, Army interests assume the greater importance. In such cases the local situation may demand the subordination of the naval forces available locally to Army requirements of coast defense. Since the coordination which is required is tactical and tactical employment must necessarily be local, the exercise of authority by the Army under the principle of paramount interest

extends over the area in which actual operations against shore objectives may take place. This area may extend only to the sub-sector or sector affected or may be of general scope, extending throughout the limits of a coastal frontier.

e. "In the application of the principle of paramount interest, it is assumed that the service which is assigned paramount interest has available forces suitable to the purpose of combating enemy attacks. It is the duty of available forces of the service not having paramount interest to support the forces of the other service or to operate in lieu of such forces in their absence, in which latter case paramount interest shall pass to the forces so operating." (Joint Action of the Army and Navy, Chap. IV, pars., 18, 19, 23 and 24).

## 2. Special Types of Joint Operations

These consist of cases where forces of one service operate with those of the sister service to accomplish a mission (task) which is normally a function of such sister service. It seems scarcely necessary to discuss them beyond pointing out that they would include -

a. Cases where Army forces operate in a country the waterways of which make it practicable and desirable to employ naval means to support such operations. Our own Civil War furnishes a number of examples of such operations, notably those of the Federal operations against Forts Henry and Donelson, against Vicksburg, etc.

b. Cases where Army air forces support naval forces engaged in operations connected with the control of coastal zones and sea lanes.

In all such cases, the organization of the supporting force



should be kept intact and coordination should be secured under the principle of unity of command, the commander of the service to which the general operation pertains being selected to exercise authority under that principle. (Joint Action of the Army and Navy, Chap. IV, pars. 28 and 29).

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### 3. Attacks against a Shore Objective by Land and Sea.

In this class of Joint Operations, the Army Forces employed therein move overland, tactical coordination between them and the Naval Forces participating being exercised when the forces of the two services approach close enough to the objective to be within supporting distance of each other.

The Anglo-Japanese Joint Operation against Tsingtao during the World War is a typical example of this type of Joint Operation. On August 27th, 1914 an Anglo-Japanese Naval Force under Admiral Kato established a blockade of the coast of Kiaochau. On September 2d, the Japanese landed some 23,000 troops in neutral territory in Laoshan Bay, under naval protection, but without encountering opposition and these troops then advanced overland against their objective, Tsingtao, being on September 24th reinforced by some 1000 British troops. In spite of the weakness of the garrison of Tsingtao, it took the Anglo-Japanese land forces practically two months to approach close enough to their objective, to be within supporting distance of their naval forces. Finally, on October, 31st, 1914, the combined Anglo-Japanese land and naval forces began

an intensive bombardment, which resulted on November 7, 1914, in the capitulation of Tsingtao.

It should be noted that such operations are essentially operations conducted independently by each service and do not partake of the nature of Joint Operations unless and until the Army forces have succeeded in forcing their way sufficiently close to the objective to gain the support of their naval forces.

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#### 4. Joint Overseas Movements.

Joint Overseas Movements are joint operations undertaken for one of the following purposes:

a. Seizing a base for fleet, air or joint operations.

Examples: The seizure of Guantnamo Bay during the Spanish-American War; and the seizure of the Island of Lemnos during the Dardanelles operations.

b. Destroying a hostile base.

Example: The operations against Port Arthur during the Russo-Japanese War.

c. Destroying a blockaded enemy fleet.

Examples: The destruction of the Spanish naval forces in Santiago during the Spanish-American War; The destruction of the Russian naval forces in Port Arthur during the Russo-Japanese War; and The destruction of the German naval forces in Tsingtao during the World War.

d. Cooperating with an Allied nation.

Example: The despatch of the A.E.F. to France during the World War.

e. Seizing colonial possessions of the enemy.

Examples: The seizure of Formosa by the Japanese during the Sino-Japanese War;  
The seizure of the Philippines by the United States during the Spanish-American War; and  
The seizure of Kiao-chau by the Japanese during the World War.

f. Invasion.

Examples: The invasion of Mexico by United States Forces under General Scott, which landed at Vera Cruz March 9, 1847;  
The Allied invasion of the Crimea, in 1854;  
The Japanese invasion of Manchuria during the Russo-Japanese War: landing of 1st Army at Chemulpo, Korea, February 1-22, 1904 and Chinampo, Korea, March 13-29, 1904; landing of the 3d Army at Takushan, Manchuria beginning May 19, 1904; and landing of the 2d Army at Pitzewo, Manchuria, beginning May 5, 1904.  
The Allied operations against the Dardanelles.

Joint Overseas Movements, depending upon the purpose for which they are undertaken, may involve naval forces varying in strength from a few vessels to a fleet, and army forces varying in size from a handful of troops to large armies.

Joint Overseas Movements of magnitude, that is, such as involve large forces, particularly large army forces, great distances and landings in force, may well be considered as being among the most difficult operations of war, and no nation is likely to undertake them, unless it possesses command of the sea. This, however, is no longer so easy to maintain as it was in the past, and can not be complete if the enemy has submarines and aircraft.

It was easy enough to turn command of the sea to good account in the past, when armies were small and movements on land very slow in comparison to movements on the sea. It is much more difficult

to do nowadays, however, for sea transport has long ago lost the advantage of superior speed it once possessed. In consequence, the large and well equipped armies of today can be concentrated much more readily and speedily to meet a hostile descent from overseas, than could the armies of the past. Moreover, it must be borne in mind that modern weapons, notably the submarine and aircraft, both offensive weapons par excellence, have materially increased the power of the defensive, which even Clausewitz a hundred years ago called the stronger form of warfare. It is accordingly extremely doubtful whether, under modern conditions, a joint overseas movement directed with the object of invasion against territory belonging to a first class power - assuming, of course, that such power deems such territory worth defending - would have a ghost of a chance of succeeding.

The preparations for joint overseas movements depend, of course, primarily upon the purpose for which they are to be undertaken, since this influences the decisions as to the theater of operations, the strategical objective, the strength of the army and navy forces to participate, etc. etc.

Since joint overseas movements, particularly those of any magnitude, involve factors of unusual difficulty not present in an ordinary operation, it is of the highest importance that preparations for them be comprehensive and thorough.

During the entire time that an overseas movement is in progress, the fate of the whole undertaking depends upon the Navy. The latter must not only assure control of the sea, but must provide and

operate the transports for the Army forces, and is responsible and must provide for their security. (If naval opposition on the part of the enemy is not to be expected, and this would be a rather unusual case, the Army provides and operates its own transports.) The Army, instead of operating from normal land bases, must establish and operate ports of embarkation, must embark its troops, their impedimenta and supplies, and is then absolutely helpless while the overseas movement is in progress. At the end of the voyage, the Army forces may have to make a forced landing with the support of the naval forces, and must contrive to maintain themselves on shore against any and all hostile opposition. This is probably the most difficult of all the operations of warfare and is perhaps more than any other dependent upon careful preparations. A serious oversight in the preparations may have disastrous consequences; deficiencies, at any rate, can not be corrected quickly and effectively; and reinforcements may be delayed by weather or enemy action and may, conceivably not arrive at all.

Even if the Army forces are destined to cooperate with an Allied nation, the problem is by no means an easy one, for the Army must organize and operate its shore installations for the debarkation of its personnel, equipment and supplies.

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#### Classification of Overseas Transportation Requirements.

The vessels required for transporting Army forces in overseas movements may be conveniently divided into the following classes:

a. Vessels intended for tactical Army units that are to be unit loaded. Such vessels must be converted to meet the particular requirements of unit loading. They consist of -

- (1) Troop Transports to carry primarily dismounted tactical units with their equipment, inclusive, if necessary, of a few horses and a limited amount of cargo.
- (2) Animal Transports to carry primarily mounted tactical units with their equipment, inclusive, if necessary, of a limited amount of cargo.

b. Vessels intended for Army units that do not require to be unit loaded, for animals not belonging to tactical units, and for ammunition and supplies. Such vessels should be divided into the following three classes:

- (1) Passenger ships to carry troops and freight, according to the capacity of the vessel.
- (2) Animal ships to carry animals and their caretakers.
- (3) Cargo ships to carry ammunition and supplies.

#### Unit Loading.

Unit Loading consists of the embarkation on one and the same transport of the personnel, equipment and animals of an Army tactical unit, such as a battalion or regiment of infantry or field artillery, a squadron or regiment of cavalry, a battalion of engineers, etc.

Unit Loading is designed to permit each transport so loaded to disembark a complete tactical unit in the proper fighting condition

and in readiness to operate on shore in a forced landing. The size of the unit to be unit loaded varies with the organization and the type of unit, and is dependent to a certain extent upon the tactical plan.

An Army unit usually consists of two distinct elements: namely, the combat or fighting element and the administrative or supply element which does not form an integral part of the fighting element.

Since the purpose for and the order in which different Army units are likely to be employed upon debarkation vary between wide limits, it is necessary to vary their unit loading accordingly. For example, a unit to be landed on the first day of the landing operation would naturally require a different unit loading than one to be landed on the third or fourth day or even later.

The following degrees of Unit Loading are accordingly provided:

a. Condition A: Highest degree of Unit Loading, which involves the following:

- (1) Nothing but the combat element of the unit is loaded and its equipment is reduced to that essential for task;
- (2) Personnel, animals and equipment are loaded with reference to the order in which they are to be disembarked and employed tactically, the Unit Commander indicating the order in which they will be required.

b. Condition B: Intermediate degree of Unit Loading.

The complete tactical unit with its authorized strength and allowance of animals and equipment is loaded with reference to the order in which they are to be disembarked and employed tactically, the Unit Commander indicating the

order in which they will be required.

c. Condition C: Lowest degree of Unit Loading.

The complete unit (personnel, animals and equipment) is loaded in such a manner as to take full advantage of the maximum capacity of the transport and without particular regard to the order of unloading.

In preparing for an overseas movement, a decision should invariably be made as to whether Army wagons should be fully loaded with their appropriate load of supplies and equipment and then stowed on transports and debarked in the same way, or whether such wagons and their loads should be transported separately.

Army Equipment Tables.

In order that units may be properly unit loaded and debarked, the Army authorities should furnish the officers charged with that work with special equipment tables indicating the following for each unit to be unit loaded:

a. The degree of unit loading, that is, either Condition A, B, or C.

b. The personnel to be loaded:

Officers  
Warrant officers  
Female nurses  
Enlisted men  
Total personnel.

c. Number of animals.

d. Equipment and supplies:

Number and kind of each item  
Space required in cu.ft. for each item  
Weight in LT of each item  
Dimensions (L B H) of each item  
Total space required to store all items  
Total tonnage in LT of equipment and supplies.

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5. Landing Attacks against Shore Objectives.

Landing Attacks against Shore Objectives, or Forced Landings, are in a class by themselves, are unquestionably the most difficult operations that Army and Navy Forces may be called upon to undertake, and form an integral part of most overseas movements. They involve the use of naval vessels against shore objectives, although such vessels are built to fight ships and not land targets, and place Army troops in a position of helplessness for a more or less extended period of time, that is, until they are actually ashore.

Forced landings involve a high degree of complexity that is wholly absent from ordinary operations of either service. Rigidity of plan and of execution is, moreover, an inherent characteristic of this type of operation: once started, the operation must proceed as planned, changes being practically out of the question, and being almost invariably detrimental or even fatal to the whole undertaking.

Landing Attacks against Shore Objectives may be divided into two general types: namely, Minor Forced Landings, undertaken for the purpose of temporary occupation, and Major Forced Landings, undertaken for the purpose of permanent occupation of a shore area with a view of conducting major operations inland therefrom. Since Minor Forced Landings are similar to Major Forced Landings in every respect except that of magnitude and complexity, this discussion will be confined to Major Forced Landings.

In the case of either type of Forced Landings -

The Normal Navy Tasks are:

- a. To provide adequate reconnaissance.
- b. To provide the defense against enemy naval forces during landing operations.

- c. To provide, man, equip and operate the small craft required for landing operations.
- d. To cover the landing by mine sweeping, gunfire, aircraft, and screening operations.
- e. To provide signal communication between ships and shore.
- f. To organize and operate the necessary sea lines of communication for forces on shore.

The Normal Army Tasks are:

- a. Deployment into boats used for landing and operated by the Navy.
- b. Delivery of rifle and machine-gun fire from landing boats, except from such machine guns as are parts of the naval equipment of the boats.
- c. Deployment from landing boats and gaining of a foothold on shore.
- d. Organization of a defensive beach head.
- e. Organization and conduct of operations to extend the beach head.
- f. Conduct of operations beyond the beach head for the accomplishment of the mission.

(N.B. Marine Corps forces organized as landing forces, perform the same functions as above stated for Army forces) (Joint Action of the Army and Navy, Chap. IV, pars. 5 and 7).

Forced Landings have always been difficult operations, but they are far more difficult today than ever before. A Forced Landing is frequently likened to an assault against a defensive position, or more properly with the forced crossing of a river line, but neither comparison is accurate, as will be readily appreciated by comparing the attack against a defensive position and the forced crossing of a river line with the landing attack against a defended beach position.

a. In an ordinary attack against a defensive position -

(1) The attacker, if he is at all skillful and has a modicum of luck, will, as a rule, be able to keep the defender in the dark for some time as to when the attack will start and where its center of gravity will be, that is, whether the attacker intends to penetrate the front or to envelop one or both flanks and, in case of an

envelopment of one flank, which one he will envelop.

(2) The attack has a secure base of operations.

(3) The attack is, as a rule, prepared by effective artillery fire, is, if necessary preceded by a barrage, and is supported by artillery fire, by machine gun fire and by tanks and air forces and utilizes the terrain to the fullest extent.

(4) The attacking units are echeloned in depth and commanders are able to influence the action by suitable and timely employment of supports and reserves, and by switching the fire of artillery and machine guns to more profitable targets.

(5) Supply is as complete as it is possible to make it.

(6) Communications are as perfect as available means permit.

b. In the forced crossing of a river line -

Practically all the points made in connection with an ordinary attack apply, except that troops must be thrown across the river at some point or points in order to establish a bridge-head under cover of which a bridge or bridges may be constructed to permit the crossing of the entire attacking force with all its impedimenta.

Such a forced crossing offers many difficulties, but they are by no means as great as those encountered in a forced landing.

c. In a forced landing, especially in one in which the element of strategic surprise is lacking, all this is quite different:

(1) Surprise is vital to the success of a forced landing, but, under modern conditions, will be practically out of the question, unless the attacker is singularly favored by chance, in particular by weather conditions and enemy blunders. If the defender has an

adequate observation force to seaward and disposes of an adequate air force, he should receive information of the approach of an overseas expedition in ample time to enable him to meet it effectively wherever it may attempt to land. Even if the attacker approaches the coast at night to assure himself at least a measure of the element of surprise, the defender can meet this by night reconnaissance and by night bombing of transports without the attacker being able to counter this action with his own air force. Weather conditions may, to be sure, curtail such air operations on the part of the defender, but weather conditions that seriously impair or prevent air operations are not likely to be promising for the success of the attacker's major landing operations, though they may favor his minor operations of that character.

(2) The attack has no nearby base of operations on land, for that must be gained first of all by making a lodgment on shore and this base, even if gained, will only suffice for operations designed to secure a real base of operations suitable for the safe debarkation of the bulk of the Army forces and the latter's heavy artillery and impedimenta.

(3) The attacking units are helpless, can not take advantage of the terrain, and must dispense with the usual artillery preparation and the usual artillery, machine-gun and tank support, until they are actually ashore and have made an effective lodgment. Their movement from ship to shore is in itself an extremely difficult operation. Naval gunfire is <sup>comparatively</sup> ineffective against shore targets and can not be laid closer than some 2,000 yards to friendly troops.

(4) Commanders of Army attacking units can do practically nothing to influence the action until a lodgment has been made on shore and Army units are self-supporting, that is, until they are capable of operating on their own with the support of their own artillery, machine guns, and so on.

(5) Supply offers great difficulties, both as regards transfer from ship to shore and as regards unloading at the beach and despatch to the troops, especially during the early stages of the operation when there will either be no land transportation available on shore at all, or a dearth of such transportation. Moreover, the sinking of any supply ships, or even of a boat or boats carrying much needed supplies, will more or less seriously embarrass the supply of the landed troops.

(6) Communication is very much more difficult than in an ordinary land operation, since it involves two services, one engaged on land, the other on the water with its artillery and air activities overlapping on to the land area.

(7) If any transports are sunk, and this may well happen if the defense is alert and conducted vigorously, especially with submarines, the consequent elimination of essential combat elements may seriously embarrass the success of the whole operation and, if important transports are sunk, may even cause the whole undertaking to fail.

d. Several additional factors of importance must be noted:

(1) In an ordinary land engagement, the opposing air forces are practically on a parity, except in so far as they differ in strength, efficiency and morale, etc.

(2) In a forced landing operation, however, this is not true, the defender's air force having a tremendous advantage in that its objectives (the ships, boats, etc., of the attacker) are extremely vulnerable, whereas, the attacker's air force has no targets that are anywhere nearly so vulnerable.

(3) The air force of the attacker must reckon with the defender's effective anti-aircraft fire delivered from fixed positions, whereas the defender's air force need merely reckon with the relatively less effective anti-aircraft fire delivered from moving platforms.

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The foregoing sketch is, of course, merely designed to give a very general idea of the inherent difficulties of all forced landings, more particularly of a major forced landing, to which we shall now turn, devoting our attention first to the development of the plan for such a landing.

Development of the Plan for a Major Forced Landing.

The War Plan prepared to meet a war situation involving a Joint Overseas Movement coupled with forced landing operations contains a DIRECTIVE which -

Usually designates the theater of operations;

Specifies the operation to be undertaken and the Joint Mission of the Army and Navy Forces that are to undertake it;

Assigns the forces to participate and the ports of embarkation;

and

Designates a commander to exercise unity of command over both forces and authorizes him to form a joint staff; or Designates the service having paramount interest, indicates the commanders of the respective Army and Navy forces, and authorizes the detail of officers of each service on the staff of the commander of the other service.

With this Directive as a basis, the Joint Staff - in case the operation is to be conducted by a commander exercising unity of command over the Army and Navy forces involved - prepares an Estimate of the Situation to determine -

- a. The Decision;
- b. The Missions to be assigned to the Army and the Naval Forces;
- c. The total number of troops required; the total number of troops to be assigned to the initial expedition; the total tonnage of equipment and supplies; and the total amount of shipping to be made available;
- d. Ports of Embarkation, if not provided, and their organization;
- e. The action to be taken by the Army, by the Navy, and by both jointly.
- f. The joint training of Army and Navy forces acting together; and
- g. The service which shall fix the hour of landing.

In case the operation is to be conducted under paramount interest, this estimate of the situation is a joint estimate, made by the staffs of the two commanders concerned.

In case the operation is to be conducted under the principle of unity of command, the commander-in-chief then issues instructions to the commanders selected to command the Army and Navy forces involved. These instructions cover practically the same ground in case of both services and include substantially -

- a. The Decision;
- b. Information relative to operations to be undertaken by the other service;
- c. The mission of the particular force (Army or Navy);
- d. The forces assigned to it and their location, availability, arrangements for special training, and so on;
- e. The ports of embarkation, including, in case of the Army force, movement of troops from concentration areas, and, in case of the Naval force, matters relative to shipping required and to be provided, troops and cargo to be carried, and troops and cargo of the initial expedition;
- f. Orders relative to organization and supply; and
- g. A statement designating the service which shall fix the hour of landing.

In case the operation is to be conducted under the principle of paramount interest, the commander of the force having paramount interest issues instructions to the commander of the force not having paramount interest, embodying the decision, the mission of the force not having paramount interest, information relative to operations of the other service, and so on.

In either case, that is, under the principle of unity of command, or under the principle of paramount interest, the commander of the Army Force and the commander of the Naval Force, each make a separate Estimate of the Situation:-

The Army Commander's Estimate of the Situation is made substantially for the following purpose:

- a. To select the LANDING AREA - in concurrence with the Naval Commander;
- b. To decide upon the TACTICAL PLAN for the employment of the Army Force ashore - in concurrence with the Naval Commander;
- c. To determine, for concurrence by the Naval Commander -



- (1) Reconnaissance of the landing area required of the Navy;
- (2) Artillery support required of the Navy;
- (3) Air support required of the Navy, and when and in what strength the Army Air Force will be available;
- (4) Tentative requirements in boats and landing gear;
- (5) Supplies and water to be furnished by the Navy;
- (6) Communication facilities required by the Army;
- (7) Army and Navy Liaison Plan;

d. To determine -

- (1) The organization and equipment of the Army Force for task;
- (2) The supplies required; and
- (3) The weight and volume of supplies -  
To accompany the troops; and  
To accompany the Expedition in cargo vessels.

With this Estimate of the Situation as a basis, the Army Commander prepares the tentative draft of a Field Order providing for the initial operations to be undertaken upon debarkation, to include -

a. The Employment of the Army Force;

- (1) Information of the Enemy (Information Annex);
- (2) The Decision;
- (3) The assignment of troops to tactical groups and allocation to the latter of naval guns to furnish supporting fire;
- (4) Assignment of tactical missions to the various tactical groups;
- (5) Administrative details (Administrative Order); and
- (6) Plan of Signal Communications.

b. The Assistance which will be rendered by the Naval Force and the method of coordination to be used in its employment.

He finally prepares the tentative draft of a Field Order providing for -

- a. Final organization and equipment of the Army Force;
- b. Assignment of troops to tactical groups for assignment to Naval Transport Groups;
- c. Special training for the type of operation about to be undertaken and joint training of Army and Navy forces acting together; and
- d. Basic Administrative Plan for the operation.

The Naval Commander's Estimate of the Situation is made substantially -

To ascertain the practicability of the Army Tactical Plan from the Naval point of view, and includes a tentative determination of the Naval forces required and available for -

- a. Control of the necessary sea area for and during the operation;
- b. Escort of the Expeditionary Force to the landing area;
- c. Support of the Army during the landing operation; and
- d. Protection and maintenance of the Army's oversea line of communication (line of supply).

The Naval Commander collaborates with the Army Commander in selecting the Landing Area and in preparing the Army Tactical Plan, and furnishes the Army Commander with a statement indicating the support which the Navy will furnish the Army Force.

The Naval Commander analyses the tentative drafts of the Army Commander's Field Orders, in order to adjust discrepancies as regards naval assistance, determines tentatively the number and character of transports (troop and animal) and of ships (passenger, animal and cargo) for the transportation of Army personnel, animals, equipment and supplies, and decides upon the organization and equipment of the Naval Force for task, inclusive of special equipment for landing troops and equipment, for supporting fire, and for communications.

The Naval Commander then prepares tentative drafts of the following:-

- a. An Operation Order to include -
  - (1) Organization of forces;

- (2) Information of the enemy;
- (3) The Decision;
- (4) Assignment of missions to each of the various groups;
- (5) General instructions;
- (6) Logistics;
- (7) Command and communications.

b. The Annexes to support and accompany the Operation Order, to include -

- (1) Army and Navy Liaison Plan, inclusive of command relations;
- (2) Support which will be given by the Navy to the Army Force;
- (3) Assignment of troops to Naval Transport Groups and allocation of transports and ships to Transport Groups;
- (4) Plan of Signal Communications;
- (5) Plan for the employment of the Air Force;
- (6) Plan for Training: Special training for the type of operation about to be undertaken, and joint training of Army and Navy forces acting together;
- (7) Special equipment to be provided; and
- (8) Supplies and water to be furnished by the Navy to the Army.

The Army Commander, upon receipt by him of these tentative drafts of the Naval Operation Order and accompanying Annexes, analyses them to adjust any discrepancies as regards assistance which will be given the Army Force by the Navy.

All points of difference are then adjusted by the Army and Naval Commanders and their staffs by means of conferences and the ARMY FIELD ORDER and the NAVAL OPERATION ORDER, each with its accompanying ANNEXES, are then issued in final form by the respective commanders.

The Army Commander then prepares requisitions for equipment and supplies, indicates loading points for them in accordance with the Navy Plan, and transmits the Navy Plan of Embarkation to Commanders of Ports of Embarkation, who issue orders for the troop movements to meet the requirements of the Navy Plan of Embarkation.

The Naval Commander at the same time issues instructions to Landing Group Commanders covering \*

- a. Selection of Debarkation Areas by Landing Group Commanders;
- b. Development of Debarkation Plans by Transport Group Commanders and their recommendations as to embarkation and as to boats and equipment needed for debarkation; and
- c. Recommendations of Support Group Commanders as to ammunition required.

He then consolidates the plans of the foregoing subordinate commanders to form the Embarkation Plan and the Plan for loading Army reserve supplies, and makes requisition for transports, ships, cargo vessels, boats, special equipment, landing gear and ammunition required.

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The Naval Landing Group Commanders and the corresponding Army Group Commanders command those Army and Navy forces which jointly operate in the same area for the accomplishment of a common mission and which constitute complete tactical units, comprising troops and naval combatant vessels and transports, engaged in coordinated operations. The commanders indicated are responsible for the preparation and execution of the detailed plans for the landing and for the direct naval support thereof, in accordance with orders and instructions of higher authority. To accomplish this, they base their plans, in so far as circumstances may require, upon the recommendations and detailed plans which their respective subordinate commanders have prepared and submitted to them for approval and consolidation as necessary.

The subordinate commanders referred to are:

a. In the case of each Naval Landing Group Commander:

The Commander of the Support Group of that Landing Group;

and

The Commanders of the various Transport Groups of that Landing Group.

b. In the case of each Army Group Commander:

The Commander of Troops of each Transport Group that forms part of the Landing Group which transports and supports the particular Army Group.

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We must now consider in detail some of the more important features of a major forced landing. This brings us naturally first of all to a consideration of the Army Landing Force.

The Army Landing Force.

The size and organization of the Army Landing Force to be used, the character of its constituent elements, and the types and amount of equipment and supplies to be carried, are influenced by the following considerations:

a. From the Army viewpoint by -

- (1) The nature of the landing operations that is to be undertaken
- (2) The depth to which the force is to penetrate inland; and
- (3) The nature and degree of resistance that is to be expected;

b. From the Navy viewpoint by -

- (1) The amount of shipping available;

- (2) The number and type of boats, motor lighters, etc., available for transferring troops, equipment and supplies from ship to shore, factors which determine the number of troop units (divisions or brigades) that may debark simultaneously;
- (3) The means and landing gear available for unloading from boat to shore; and
- (4) The number of animals to accompany the Army force, since they and their forage require much more space on board ship than the equivalent motor transportation, and since their handling and transportation by ship and by boat presents a very serious problem;

#### Selection of the Landing Area.

The selection of the Landing Area or areas is jointly considered by the Army and the Naval Commanders concerned, with due regard to the tactical requirements and the means, both Army and Navy, available.

Tactical considerations as to the objective and consequent employment of the land forces ashore are paramount: that is to say, the landing must be made at a place from which the Army forces can reach their objective.

The experience of the past, as well as the probable demands of the future, indicate -

a. That an advance base in close proximity to the landing place is essential; and

b. That an air base in close proximity to the landing place to permit the use of Army air forces, will be of vital importance to the success of the whole landing operation.

The problem of selecting a suitable landing area is a difficult one, because the requirements of the Army and Navy are somewhat conflicting.

From the Army point of view, the landing area should have numerous favorable beaches permitting landings on a broad front; should afford an adequate inland operational area with suitable roads and other communications; and should facilitate the accomplishment of the Army mission.

From the Navy viewpoint, the landing area should afford suitable approach, shelter for transports, maneuvering space for the naval supporting ships, protected places for ramps, floats, or wharves for unloading Army equipment required early during the operations; sheltered water for anchorage and protection of convoy and, ultimately, suitable harbor facilities required for the maintenance of the Army forces ashore and for the Naval forces.

The term landing area is intended to cover the entire land and water area over which the landing operations extend. The term beach, on the other hand, is intended to mean only such part of the shore line as is required for landing one assault battalion. A beach must be wide enough to enable a battalion to deploy and must give access to the terrain over which it is to operate.

The physical conformation of the shore line exercises a very material influence upon the selection of beaches. Generally speaking, a cove or bay will probably afford better conditions for the landing than a straight stretch of shore or a promontory. But a cove or bay has the disadvantage of permitting the defender to bring converging fire to bear upon the attacker. That such converging fire is a very serious matter is borne out by the fact that in forcing a crossing over a river, the attacker invariably avoids bends that are convex toward the enemy and chooses those that are convex toward himself.

From the Army viewpoint, the number and location of beaches will depend upon the defender's probable dispositions and upon his ability to concentrate at any given point, and upon the attacker's ability to mass his forces and to bring them to bear quickly.

The Army desires as many beaches as possible for the landing, and prefers that they be located so as to permit the troops landing thereat to support each other, as this materially increases the chances of success.

The terrain adjacent to the beaches is of vital importance to the Army and should be such as to permit the troops to penetrate rapidly inland 5,000 to 7,000 yards for the purpose of establishing a beachhead that will protect the landing of troops and supplies against hostile light artillery fire. The terrain should, moreover, permit the troops to establish themselves eventually in a defensive position at least 15,000 yards from the beach to cover the landing of heavy material and impedimenta against hostile heavy artillery fire.

The Navy, on the other hand, is more particularly interested in the water areas adjacent to the beaches and prefers areas having satisfactory tidal and current conditions, no rocks or mud flats, little or no surf, and firm bottom, especially in case guns and heavy Army stores have to be landed, and permitting boats to be beached close to shore.

Although the Army requirements, as already stated, are paramount, the Navy is responsible for determining the practicability of landing beaches, in view of currents, tides, wind and weather, rough water, surf, etc., coastal conditions and the approaches thereto.



An ideal beach will rarely be found and the beaches selected will be a compromise between the conflicting requirements of the two services as to what is desirable and what is necessary to take advantage of the element of surprise and to attain the object: namely, to land enough troops at a place from which they can reach their objective and accomplish the mission for which the whole operation was undertaken.

The final decision as to the width of the landing area, the number and location of beaches, and the methods to be employed in the landing, is made by the Army commander after consultation with the Navy commander as to the practicability of landing at the desired places and as to the ability of the Navy to furnish the assistance and support required.

The naval commander, however, is responsible for selecting the transport anchorage area, for its distance from shore, for the movement of troops and supplies from ship to shore, and for gunfire and air support of the landing, aside from his duty of protecting the whole operation against hostile naval forces.

#### Selection of the Hour of Landing.

The decision as to which service is to fix the hour of landing is made either by the officer exercising unity of command over both Army and Navy forces, or by the two commanders concerned mutually agreeing upon the matter.

The chances of success of a forced landing are materially improved by surprise. But it is very difficult to effect a strategic surprise, because of the ability of the defender to get early information of the approaching attacker by means of long range naval and

air scouting. It is much easier to secure tactical surprise, that is, to launch a sudden attack against a particular beach or beaches before the defender has a chance to make appropriate dispositions, and every effort should be made to effect such surprise. The moment debarkation begins, however, the operation can no longer be concealed. The effectiveness of tactical surprise is dependent upon many factors, most important of which are luck and swift and energetic action.

It might be well in this connection to point out that if the Allies had made a serious effort to land at the Dardanelles on November 3, 1914, when they bombarded the forts at the entrance for the first time, or if they had attempted it even as late as March 18, 1915, when they made their great naval attack against the Straits, they might have surprised the Turks and the landing would probably have succeeded. But when the Allies finally did make their landing on April 25, 1915, all chance of surprise was gone; the Turks had received ample warning of the impending attack and were prepared for it; and the whole undertaking proved a costly failure.

Unfortunately, Army requirements incident to effecting surprise entail serious disadvantages for the Navy. If, for example, the hour of landing is such as to require the transport convoy and supporting naval vessels to proceed to the anchorage area during darkness -

Navigation marks will be absent; and

It will be more difficult -

- To locate mine fields, transport anchorage areas and stations of supporting ships;
- To sweep a channel through mine fields;
- To maneuver the convoy through the swept channel;
- To rescue troops from damaged transports;

- To lower boats without the aid of lights, to embark the troops, to handle and navigate the boats and to direct them to the desired points on shore;
- To direct and to spot ships' fire;
- To ward off air attacks and to scout, observe and spot;
- To repulse destroyer attacks;
- To execute counter-battery work;
- To avoid collisions;
- To provide effective protection against submarine attack; and
- To control the Navy's part of the operation.

The attacking force must approach the coast in formation outside the area controlled by the enemy's heavy seacoast defenses and must undertake the landing while exposed to hostile mines and to submarine and air attacks. It would accordingly appear that the most favorable Hour of Landing from a naval viewpoint, could only be determined after deducing the attacker's naval tactical strength relative to the defender's naval strength plus army strength by day and by night.

With this conclusion in mind, the commander responsible for fixing the Hour of Landing should weigh the relative value of the gunfire and air support to be furnished by the Navy against the following factors:

- Approach to shore under sweeping and raking fire, and probable losses incident thereto;
- Passage through or over obstacles at the beach under raking fire;
- Ability of the defender to observe approach and attempted landings and to determine the strength of the attacker at various beaches;
- The relatively greater efficiency of the defender's rifle, machine-gun and artillery fire and of his observation and communications systems; and
- The relatively greater ability of the defender to maneuver, to deploy and to go into action promptly.

Before the final decision is made as to the Hour of Landing, due consideration must likewise be given to the time needed by the troops to secure and to consolidate the requisite terrain for subsequent operations.

Debarkation.

Each of the two services makes detailed plans for its part in the debarkation, and these plans are carefully coordinated.

Prior to the preparation of such plans, a careful reconnaissance should be made of the selected landing and debarkation areas to determine the hydrographic conditions adjacent to the tentatively selected beaches from shoreline to seaward, inclusive of the area selected for the supporting ships and the transports. Air forces and submarines are peculiarly suited for making such a reconnaissance, but every care should be taken to avoid giving the defender advance warning of the probable point of attack, unless the need of information outweighs all other considerations.

The Debarkation Area is that part of the water area adjacent to shore which is needed by the Navy for the use of transports and supporting naval vessels, and extends from high water mark of the coast as far to seaward as necessary.

The Support Area is the area assigned to each group of naval vessels supporting the landing and should be sufficiently extensive in breadth and depth to permit free maneuvering of those vessels and sufficiently extensive in depth for them to cover effectively the land objectives step by step from the extreme range of their armament.

The Transport Area is the area assigned to each group of transports and should permit them to anchor in ten fathoms of water or less, such shoal water being a particularly good protection against submarines. The area should be large enough to permit the transports to maneuver freely to avoid hostile artillery fire. If practicable, the transport area should be separate and distinct from the support area.

While discharging troops into boats, the transports should be as close to the beach as the situation permits, but without leaving their assigned area.

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It is essential for Army personnel fully to appreciate the influence exerted by hostile submarines and mines upon the conduct of the transport convoy, the approach to the landing area and beaches, and upon the naval gunfire support and method of debarkation.

Hostile submarines may very materially interfere with the Landing. In order to avoid torpedoes, ships may have to continue cruising at a high rate of speed while awaiting the hour of debarkation. Careful calculations should be made to determine the length of time required to unload transports with the existing facilities, in order that they may not have to arrive in the danger zone before they are needed.

When the waters of the proposed landing area are known or suspected to be mined, the area must be swept by the Navy before landing operations can begin.

The Navy must likewise demolish such underwater obstructions as the defender may have installed near the beach, such demolition work being accomplished, as far as practicable, by cutting devices carried by the boats of the initial landing waves.

The debarkation itself is effected in accordance with debarkation schedules prepared by the Army, the departure of boats from transports and the movements, formation and speed of these boats between trans-

ports and shore and return being determined by the Navy, by orders issued by the commander of the transports in the particular transport area. If such boats have to pass through the support area, however, their movements are regulated by the support commander.

Troops are debarked in Waves, each of which consists of a group of boats carrying a tactical Army unit or fraction thereof, such as a battalion of infantry or engineers, a squadron of cavalry, a battery of artillery, a motor transport company, etc.

If the troops of a Wave are carried ashore in several successive lines, each line is referred to as an Impulse.

The time of arrival of the various Waves or Impulses at the beach is indicated in the Army Debarkation Table. The Navy is responsible that the waves or impulses are so spaced, one in rear of the other, that they will arrive at the beach in the order and at the time intervals desired by the Army.

The interval between boats or groups of boats at the moment of landing should be as requested by the Army. In this connection, it is to be observed that the terms "interval" and "distance" do not have the same meaning in both the Army and the Navy. For example:

In the Army -

Interval is defined as space between elements of the same line;  
and

Distance is defined as space between elements in the direction  
of depth.

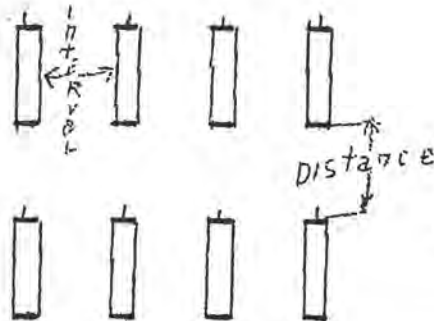
In the Navy -

Interval is defined as the linear distance between the foremasts  
of squadron or division guides in a compound formation; and

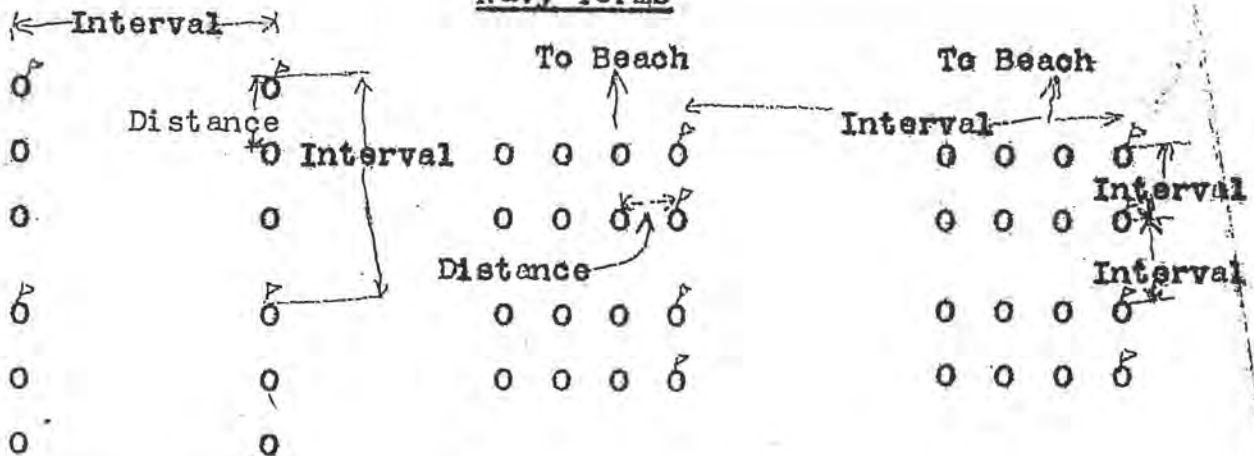
Distance is defined as the linear distance between ships measured from foremast to foremast.

Illustration

Army Terms



Navy Terms



Landing Boat Equipment.

The landing boats, which are manned by Navy personnel, should suffice to embark simultaneously the first six, seven or eight waves to be landed at each beach, the leading wave, or two leading waves being preferably carried in fast boats (motor sailors) mounting machine-guns or one-pounders operated either by Navy or Army personnel and being provided with protection against small arms fire.

It is very desirable to provide large motor launches or barges for the debarkation, in order to avoid using the boats belonging to naval vessels. To rely upon the boat equipment of naval vessels and transports materially slows up the landing and requires towing, a form of approach to the beach which is to be avoided if possible.

Debarkation of Equipment and Supplies.

Troops can carry only their arms, personal equipment, inclusive of a canteen of water, and one or two days' rations and ammunition with them on being landed. Unless good drinking water is known to exist on shore, the Navy must make provisions for supplying the troops with an ample quantity by placing casks of water in each boat and by furnishing the troops on shore with water thereafter, until the Army can provide for itself. At Suvla Bay, during the landing on Gallipoli, the British advance failed, largely due to the exhaustion of the troops because of the lack of drinking water on that intensely hot day.

Equipment and supplies that can not be loaded in small boats, must be unloaded at ramps, piers, or wharves, which must, if necessary, be constructed for the purpose.

The debarkation at each beach is controlled by a naval officer called the Beachmaster, and by an army officer called the Shore Party Commander.

The BEACHMASTER with his assistants -

Controls the beach from high water mark to seaward, all naval activities at the beach and all landing facilities;  
Causes the beach to be marked promptly to facilitate recognition by approaching waves;  
Organizes and controls all communication with the Navy;



Transmits all Army messages from shore to ship;  
Receives all messages from ship to shore; and  
Cooperates with the Army Shore Party Commander.

The SHORE PARTY COMMANDER with his assistants -

Takes charge of all labor, troops, equipment and supplies  
as soon as they are landed by the Beachmaster;  
Organizes beach facilities, such as dumps, collecting  
stations, etc.  
Establishes information and message centers;  
Facilitates movement of troops inland; and  
Cooperates with the Navy Beachmaster.

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### Artillery Support.

Artillery Support is essential in a forced landing, if anything, even more so than in an ordinary attack against a defensive position on land. This support is furnished by the gunfire of naval vessels, supplemented by the air forces, until the Army is able to function on its own account.

Naval Gunfire Support should include -

- a. Protection of transports during debarkation, and of troops, equipment and supplies in movement to the beaches;
- b. Bombardment of the beaches to destroy the defenses and facilitate the landing, lifting as the initial wave approaches the shore;
- c. Counter-battery work against hostile guns bearing on transports, small boats moving toward the beach, and on troops advancing inland; and
- d. Concentrations (interdiction, neutralization, or destruction fire):
  - (1) Generally 1,000 yards inland, until assault battalions are established on the beach;
  - (2) On strong points holding up the advance of the troops;
  - (3) On enemy support positions and reserve positions; and
  - (4) On routes of approach of hostile reserves.

The Navy controls all ships' gunfire, the Army indicating the areas upon which fire is to be directed, the volume of fire required for each area, the time when the fire is to begin, and when it is to lift. Army field guns may be mounted on decks of ships and may be employed with advantage in certain circumstances to supplement the fire of naval guns, but when so used, they are manned by naval crews and are wholly under control of the Navy.

The amount of naval gunfire required is estimated by considering the enemy forces likely to be on the beach to oppose the landing, the defensive organization of the beach, the supporting hostile artillery of all calibers, the available enemy supporting troops and their routes of approach, and the location of hostile reserves.

The naval gunfire requirements, both for preparation and support of the landing must be worked out in sufficient detail before embarkation to assure that it will suffice, both as to volume and type, when the time comes.

Each naval support group supporting a forced landing should be divided into two separate groups charged, respectively, with the detailed support of the landing, and with the general support of the landing. The first task should normally be assigned to the lighter ships and the second task to the heavier ships.

Considerations affecting the use of naval guns in support of forced landings.

The following are, briefly, some of the more important considerations affecting the use of naval guns in support of forced landings -

a. Against Harbor Defenses.

Extensive landing operations against beaches which, with adjacent water areas, are within effective range of modern seacoast armament, involve too much risk to be practicable. Vessels of war are too vulnerable to such fire; transports have to lie too far off shore, and gunfire from ships against the seacoast defenses is comparatively ineffective.

b. Against Beaches.

The usual naval armament, ammunition and fuzes, and the ammunition supply of naval vessels is unsuited for providing the kind and volume of supporting fire required by infantry in an assault against a defensive position. Nevertheless, naval gunfire must be used for this purpose in forced landings, because it is the only artillery fire available.

c. Against Heavy Mobile Armament.

Naval gunfire is no match for heavy mobile land artillery, since the latter is usually so posted in concealed positions that the ships either can not see it at all, or can not reach it with their flat-trajectory guns. If the defender concentrates a large amount of heavy mobile artillery, and if he has effective air observation that permits him to extend the usual limit of observation of about 15,000 yards to the limiting range of such artillery, it is risky to bring naval vessels or transports into the area covered by its fire.

Naval gunfire in support of a landing is indirect fire, except when directed against targets visible from the sea. While its

effectiveness against land targets can be considerably increased by training, it will at best be less effective than that of Army artillery emplaced on land.

All artillery fire requires adjustment, in order to place the center of impact upon the target. Night firing by naval vessels against land targets, except when observation of fire and adjustment are possible, requires that the relative positions of firing ship and target be accurately known. Unobserved fire is inferior to observed fire, and fire from ships whose position is not accurately known and whose fire can not be observed and adjusted, is normally ineffective and dangerous.

The flat trajectory and long range of large caliber naval guns, and the consequent limited life of such guns, greatly reduce the support that naval vessels can give to the Army in forced landings. Due to conditions into which it is not necessary to go here, it would not be safe to place naval gunfire on land targets closer than 2,000 yards from friendly troops, though this distance may be reduced to 1,000 yards by Army type artillery mounted on the decks of ships and operated by naval crews trained to fire at land targets. Close support of assault troops by naval gunfire is in any event, however, a very difficult operation, especially when the firing ships are moving.

#### Air Force Support.

The Naval Air Force supplements the naval gunfire, particularly during the early stages of the landing, and provides air spot. But its principal function is to gain control of the air, which is one

of the prerequisites to the success of a forced landing. It is accordingly essential that the attacker's air force be superior to that which the defender can assemble during, and bring to bear against, the landing operation, and that it include observation, pursuit, attack and bombardment aviation. Such superiority can probably be assured only if a suitable advance base has been secured for the Naval Air Force before the landing starts, and if the Army Air Force can cooperate at once or without loss of time with the Naval Air Force. Until the Army Air Force is fully able to take care of air operations, these are conducted by the Navy.

Factors affecting the early employment of Army Air Corps Units.

The following factors affect the early employment of Army Air Corps units:

- a. The availability of landing fields in or in the vicinity of the landing area; the time required to prepare them for use; and the practicability of flying a part or all of the Army Air force contingent to temporary landing fields within operating distance of the landing area, so that it can cooperate with the Naval Air Force during the landing.
- b. The question as to whether landing fields are to be seized prior to the initial landing to enable the Army Air Force to cooperate with the Naval Air Force during the landing, or whether they are to be seized simultaneously with or subsequent to the main landing, the Army Air Force being then employed as it becomes available;
- c. The excessive amount of ship space required to transport uncrated planes, the difficulty of transporting them on shipboard, and the difficulty of transferring them from ship to shore; and
- d. The time required for assembling planes transported in crated form.

Replacements.

In order that the fighting power of tactical units may not dwindle and suffer permanent diminution - as happened during the

Dardanelles operations with such disastrous results - it is essential that provision be made for adequate replacements. These should be assembled at the advance base early in the operation, or should follow the initial expedition on special passenger ships, ready to fill up the depleted ranks of the fighting troops.

#### Joint Training in Landing Operations.

The difficulties of landing troops on a hostile shore are so great as to make it imperative that Army and Navy be given joint training in such operations. Exercises devised for that purpose should include -

- a. Embarking troops in small boats from transports;
- b. Moving small boats in formation from transport to shore, inclusive of the control exercised by the support commander, in case they move through the support area;
- c. Firing by troops from small boats during the approach to the beach under supporting naval gunfire;
- d. Landing troops and their equipment on beaches from small boats under covering naval gunfire;
- e. Handling and unloading essential Army equipment and supplies from boat to shore;
- f. Functioning of the Joint Army and Navy liaison system;
- g. Functioning of Beachmasters and Shore Party Commanders; and
- h. Joint planning

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#### The Conduct of a Forced Landing.

Let us now turn to the conduct of a Forced Landing. This is, in effect, an attack against a defended position, but differs from

the usual attack against such a position in this, that the approach is made over an area entirely devoid of cover; that it permits neither fire nor movement on the part of the attacking tactical units; and that both approach and assault lack the usual support of divisional and corps artillery fire, which is replaced by the much less effective support of naval gunfire.

Aside from preliminary reconnaissance, the operation begins with mine sweeping of the debarkation area by the attacker's naval force, the establishment of navigational aids, the naval operations involved in covering the approach of the various transport groups and in escorting them to their respective anchorage areas, and, if the hour fixed for the landing permits, air operations designed to gain local command of the air.

The landing operation proper begins with the debarkation, and may be expected to comprise the following three phases, which are characterized by successive attacks with limited objectives:

a. Seizure of sufficient terrain directly adjacent to the beaches to assure a foothold, followed, as soon as a strong enough force is ashore, by an advance with the object of establishing a beachhead far enough inland - say 5,000 to 7,000 yards inland - to protect the beaches against hostile light artillery fire.

b. Operations designed to secure a position farther inland - say 15,000 yards inland - to protect the beaches against hostile long range artillery fire and to assure uninterrupted debarkation. In order to attain this object, it will frequently be necessary to secure a harbor having facilities for unloading the heavier Army equipment and the bulk of the Army supplies.

c. Land Operations designed to secure the objective for which

the forced landing was undertaken.

The landing should be made on a broad front, in case of large forces, with corps abreast, one or more divisions of each corps landing simultaneously with brigades and regiments, respectively, either abreast or in column, each tactical unit, as in ordinary offensive operations on land, being assigned an objective and a clearly defined zone of actions.

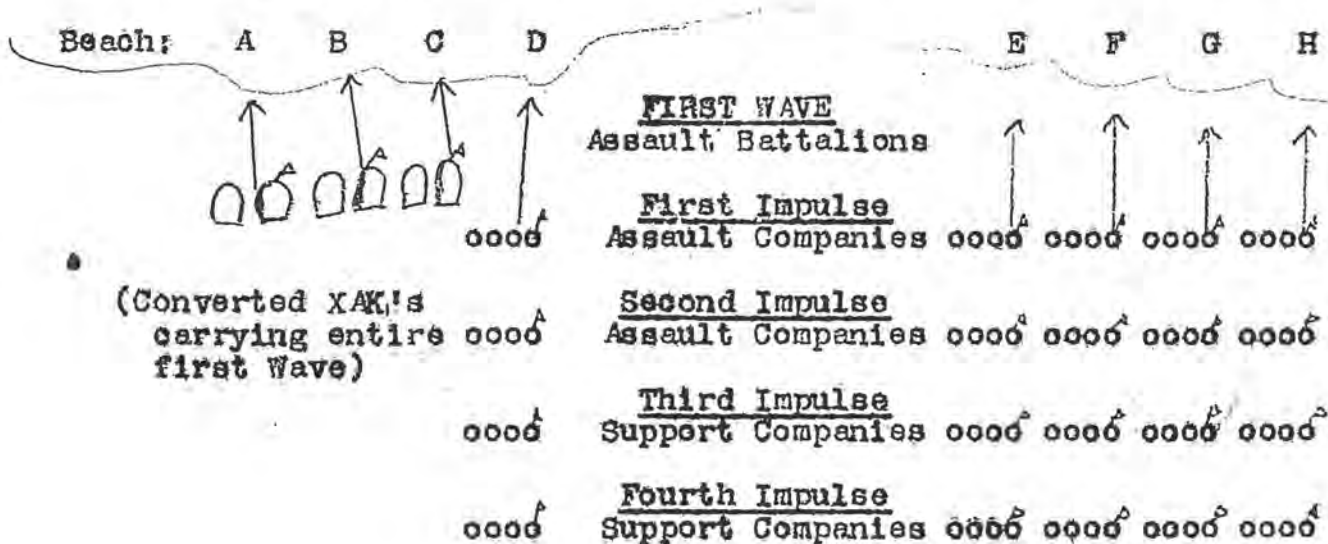
For the purpose of this discussion, it will be assumed that a small island lying some thirty miles from the landing area and possessing an adequate, sheltered harbor, but no landing field, was secured as an advance base; that the landing is being made by one corps of three divisions; that the divisions will land abreast of each other simultaneously, a serious feint being made at the same time some distance from the landing area; and that the landing equipment furnished by the Navy, converted XAK's, boats, lighters, etc., permits the first six waves to begin landing simultaneously at eight different beaches spread over a wide front, a factor of great importance, since it tends to cause the enemy to fritter away his forces, thereby weakening his defense.

If teamwork and fighting power are to be assured, however, it is imperative that tactical unity of troop organizations be preserved, in other words, that tactical units, even down to squads, be landed intact on the beaches.

In order to accomplish this, battalions launched against the beaches are landed in successive waves organized into impulses following each other preferably at specified time intervals rather



than at prescribed distances, so as to permit battalions, upon landing, to take up suitable combat formations, properly echeloned in depth, to meet the tactical situation. The debarkation will accordingly be conducted somewhat as follows, starting at daylight, leading transports being anchored about four miles off shore, and each assault battalion being assigned to a definite landing beach:



SECOND WAVE  
 Reserve Battalions  
 (in as many impulses as required)

THIRD WAVE  
 and succeeding Waves,  
 each in as many impulses as required:  
 Other tactical units, in the order demanded by the tactical situation and as laid down in the Army Debarkation Schedule in accordance therewith.

The Naval Beachmasters with their assistants accompany the First Impulse of the First Wave, and the Army Shore Party Commanders and their parties the Second or Third Impulse of that Wave, Military Police personnel being landed later to assist the Shore Party Commanders in policing the beach and to control traffic, stragglers, etc.

Each echelon of the Army ashore promptly connects its Command Post with the Beachmaster's communication system, the Army then extending its line of communications inland as the attack progresses. As each tactical unit advances, it plainly marks its route inland together with the location of its message center. All officers and men should be told beforehand precisely what is expected of their unit and why, and what is expected of units on their right and left, so that they may be able to act intelligently. Everyone must be impressed with the vital necessity of preserving order and cohesion. Straggling must be ruthlessly suppressed.

Adequate medical personnel with such medical equipment and supplies as can be carried by hand is landed early. More adequate medical facilities are provided later. Meanwhile, such evacuation as is practicable is handled by each Naval Beachmaster by means of small boats to transports and naval vessels.

Engineer parties are landed soon after the first troops, to assist the various Beachmasters in improving the landing places for boats and in removing obstacles. They should then begin constructing ramps and wharves at some suitable point or points and improve routes of communication into the interior.

Trained artillery and air corps liaison personnel of the Army is sent ashore with the leading waves and established at the communication centers of the various Beachmasters, in order that messages may be transmitted in the terms and in the manner to which each service is accustomed.

Trained naval spotting parties are likewise sent ashore with the leading waves and accompany the advancing infantry for the

purpose of furnishing direct observation for the supporting naval guns.

Available pack artillery and field artillery, though the latter is difficult to land on open beaches, are landed early in the operation, in order to give the infantry adequate artillery support with land guns as soon as possible.

Heavy artillery, being very difficult to land, is not landed until late in the operation. If the beaches are bordered by high hills, it would, in any case, be of little value ashore until the hills are secured and emplacements and approaches thereto have been constructed.

Tanks are very difficult to get ashore, except perhaps from XAK's. But since they are very valuable for overcoming obstacles and machine-gun nests, they are landed as early as feasible.

Wagons and motor vehicles are not sent ashore until a beach-head of considerable extent, say the second objective, has been gained and suitable roads are available. But available pack trains, which may prove of great service ashore, are landed earlier, in spite of the difficulty of transporting and unloading their animals.

Since the troops can carry only a few days' supply of ammunition and food with them, provision is made for landing an adequate supply early in the operation, these being placed in suitable dumps on the beach by the Shore Party Commanders.

The Army Air Forces are debarked only after a suitable landing field has been secured ashore and after piers and other means for handling large crates and heavy air corps supplies are available.

If a landing field could have been secured within operating distance of the landing area, the Army Air Force would, of course, have been debarked there; but, as already stated, the island serving as advance base did not offer such facilities.

The heavy impedimenta, in particular the reserve supplies and the heavy equipment and material, is not landed until a suitable harbor with wharves and railway facilities is available.

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For the purpose of furnishing naval gunfire support, each Naval Support Group is divided into two Task Groups, that is, the Distant Support and the Close Support, charged, respectively, with the general support of the landing and with the detailed support of the landing, Army guns mounted on converted XAK's being part of the Close Support.

The debarkation in this case is preceded by a brief but intensive bombardment by all the guns of both the Close and the Distant Support that will bear, directed against such hostile artillery positions and strong points as can be identified, and against hostile routes of approach. This bombardment ends thirty minutes prior to departure of the leading impulse from the transports. The Close Support then begins an intensive bombardment of all the beaches, in order to destroy the defenses and to facilitate the landing, lifts its fire as the leading wave approaches the shore, and concentrates it on hostile batteries, strong points, etc., some 1,000 yards inland from the beach, until the assault battalions are

established on the beaches, thereafter supporting the infantry advance after the manner of divisional artillery. In order to accomplish this, the Close Support is divided into three Divisional Support Groups, each having a gun power as nearly as possible equivalent to 48 - 75 mm guns, the normal artillery force of a division, and supporting with its fire a particular division. Each Divisional Support Group is then further subdivided into Brigade Support Groups, and the latter into Regimental Support Groups. Each Support Group, whether divisional, brigade, or regimental, is assigned a normal zone of fire and a contingent zone of fire, its normal zone corresponding to the zone of action of the unit which it is to support with its fire, and its contingent zone corresponding with the zones of action of the adjacent Army units. Thus, the normal zone of fire of the Regimental Support Group of naval guns supporting the 3d Infantry, is the zone of action of that regiment, and the contingent zone of that group embraces the zones of action of the 2d and 4th Regiments of Infantry.

Meanwhile, the Distant Support, which consists of heavier ships, is engaged in counter-battery work against hostile batteries, particularly against those bearing on transports, and in concentrations directed primarily against hostile batteries, strong points and positions some 1000 yards from the beaches, until the assault battalions have made a lodgment on shore. Then, while continuing its counter-battery work so as not to endanger the troops on shore, it concentrates the remainder of its fire against hostile support positions, reserve positions, and especially upon the routes of

approach of hostile reserves, as well as upon any large and profitable targets offered by the enemy, and responds to calls from the troops on shore for long range fire to be directed against particular targets.

The supporting naval gunfire is conducted in accordance with the Naval Artillery Plan and is controlled by the Naval Support Commander through the Commander of the Distant Support and through the Commander of the Close Support, and by the latter through the Commanders of the various Divisional, Brigade, and Regimental Support Groups.

Plane spot is employed in addition to direct spot by the trained naval spotting parties accompanying the infantry. Identification of bursts, and, therewith, adjustment of fire is facilitated by providing all combatant naval vessels, as well as the XAK<sup>1</sup> mounting Army guns, with special projectiles giving off distinctively colored smoke on burst.

During the advance, commanders of troops indicate the targets upon which fire is to be directed, the time when it is to begin, the time when it is to lift, and the volume of fire required, in which latter particular, it will probably always fall far short of what an infantryman could wish.

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### Conclusion.

In conclusion, I should like to emphasize that under modern conditions, a forced landing, especially one of magnitude, will stand little, if any, chance to succeed, unless the attacker has

command of the sea and air.

But even with such command, a forced landing is an operation of tremendous difficulty. The plans and preparations for it must be made a considerable time in advance and at a distance, sometimes even at a great distance, from the scene of action, and by the time the blow is to be delivered, the assumptions upon which plan and preparations were based may have undergone radical change. Besides, the cardinal principle that the plan for a military operation must be simple and flexible, if it is to succeed, can not be applied to a forced landing, for this must proceed according to an exceedingly detailed, complex plan which, in addition, from the moment debarkation begins, is necessarily very rigid and, at best, nothing but a compromise between the conflicting requirements of two independent services, the Army and the Navy.

Once the debarkation starts, practically nothing can be done to rectify errors, to supply omissions, or to fill gaps caused by transports with vital combat units or indispensable supplies, or boats plying from ship to shore, being sunk with everything on board, by torpedo, mine, bomb or gunfire. In an ordinary battle on land, gaps in the fighting line can be readily filled, as a rule, by pushing up supports or reserves. But during the debarkation in a forced landing, gaps caused by the loss of entire units during, or prior to, the movement to the beach, can not be filled without a rearrangement of the debarkation schedule, and this, if attempted, would result in endless confusion, and is usually impossible anyway.

The troops are entirely helpless until they get ashore, and are then faced by the very difficult task of assaulting a defended position and, until they are able to operate independently, are wholly dependent upon the Navy. The latter is faced with the very difficult and complex tasks of transporting the Army expeditionary force to the landing area, of putting the troops ashore in sufficient strength to enable them to carry on effective land operations to the extent contemplated, and of supporting them until they are able to operate independently.

The whole operation, both as regards planning, preparation, and execution, makes very severe demands upon the capacity and energy of all commanders and staffs. It requires, moreover, the highest degree of intelligently loyal cooperation between all parts of the two services, and this is possible only if each service is thoroughly familiar with the powers and limitations of the sister service and possesses a sympathetic understanding of the problems and difficulties of that sister service, in a word, if both services talk and understand the same language.

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