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THESIS

PRINCIPLES OF JOINT OVERSEAS OPERATIONS WITH SPECIAL REFERENCE TO CO-OPERATION BETWEEN THE ARMY AND THE NAVY.

SUBMITTED BY

A Committee of Officers of the United States Army.

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JOINT OPERATIONS.

O U T L I N E.

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PRINCIPLES OF JOINT OVERSEAS OPERATIONS WITH SPECIAL REFERENCE TO CO-OPERATION BETWEEN THE ARMY AND THE NAVY.

(a) Preparations for joint operations.

Joint, or amphibious, operations appear in the military history of all great nations. Beginning with the defeat of Pyrrus, King of Epirus, who invaded Italy about 280 B.C., closely followed by the Punic and the Macedonian Wars, Rome conquered the ancient civilized world through the combination of her land and sea power. The conjunct operation as a builder of empires is the strategic lesson of her history.

While history has recorded the outline, the successes and failures, of such operations, military historians, until very recent times, have given scant attention to their details with the result that there is an absence of that critical analysis of causes and effects on which sound principles for our guidance in the conduct of such operations should be based.

A modern British authority, Mr.Corbett, has the following to say:- "It is evident that we require for the guidance of our naval policy and naval action something of wider vision than the current conception of naval strategy, something that will keep before our eyes not merely the enemy's fleets or the great routes of commerce, or the command of the sea, but also the relations of naval policy and naval action to the whole area of diplomacy and of military effort. Of late years the world has become so deeply impressed with the efficacy of sea power that we are inclined to forget how impotent it is of itself to decide a war against great Continental states, how tedious is the pressure of naval action unless it be nicely co-ordinated with military and diplomatic pressure."

Our own brief history is unusually replete with con-

junct operations. They appear in some form or other in practically all our wars, varying in size from the small expeditionary force that Scott landed at Vera Cruz and led into Mexico City to the two million men that, under Pershing, played so decisive a part in the final campaign of the World War.

But our interest in amphibious operations is not alone or even primarily historical, except as a study of our past performances may serve to guide us to sound decisions for the future. For, a brief glance at our present position in the general situation of world affairs is sufficient to establish the conviction that never before in our history have we faced so squarely the probability of having to exert so gigantic an overseas military effort under such drastic self-imposed limitations on our national strength.

We have strategic frontiers that are conterminous with those of: (1)The Republic of Mexico, an unstable political unit possessed of great natural resources which she is too backward to develop and too weak to defend, and our next-door neighbor; (2) The British Empire, both on land and sea, in the Atlantic and Pacific Oceans, in the Caribbean Sea, and in the Gulf of Mexico; and The Empire of Japan, in the Western Pacific.

The latter two are first class military and naval powers and our rivals for economic advantages in the Far East, especially in China. With them we have concluded a treaty which divides the Pacific among us, but leaves the Philippines defenseless.

War with any one of these three powers would require the conduct of Joint Operations; against the last named, because of distance, inherent strength of the enemy geographical position, and because of our unfavorable position

under the Four-Power Treaty, the effort required would be gigantic. We must not permit ourselves to overestimate the security provided by the treaty. The Treaty was designed to abate one, and a very acute, symptom of friction - competitive armaments. But the underlying cause of friction, trade rivalry, remains; and we must not allow ourselves to forget that an overseas expeditionary force may well be for us the ultimate remedy.

We are at present then faced with the task of taking stock of our resources and capabilities for conducting an overseas expedition of the first magnitude. The success of such an operation will depend primarily on co-operation between the Army and the Navy. This co-operation to be effective must be prepared for in time of peace. But in the past, or at least up to the beginning of the World War, our War and Navy Departments have functioned entirely independent of each other as separate branches of the Executive Authority, both responsible to the civilian head of the State but without any definitely fixed legal responsibility for co-operation either in peace or war.

Since the World War (1919) the War and Navy Departments established by agreement a Joint Board whose membership contains the officers directly responsible for the policy of the Army and Navy and who are charged with the duty of presenting, through the civilian heads of their departments, professional advice to the President, who is, constitutionally, the Commander-in-Chief of the Army and Navy. In addition there has been set up a Joint Planning Committee, which, under the Joint Board, has certain functions concerned with the preparation of War Plans. This represents a long step forward in the desired direction.

Co-operation between the Army and the Navy presupposes and is the resultant of, (1) organization and (2) indoc-

trination.

Again co-operation in the conduct of military operations requires, (1)agreement as to what is to be done--a plan--and (2) mutual confidence and understanding between those who are entrusted with executing the plan.

The co-operation between the War and Navy Departments necessary in the preparation for Joint Operations will therefore be examined briefly under the following four subjects:

(1) Organization.

(2) Indoctrination.

(3) War Planning.

(4) Command.

Organization, in its elementary sense, means such a grouping of the individuals composing a military force as will secure (1) the maximum efficiency in the handling of their weapons, and (2) a chain of command through which authority may be exercised over each individual. In this restricted sense the organization of Land and of Sea Forces will have but little in common since each must concern itself with the use of its own weapons and must serve its own individual command requirements. But organization as a means to co-operation between Land and Sea Forces requires the creation of some agency to serve as a connecting link, a by-pass, between the channels of command of each force. In this sense, and for this purpose, the Joint Board and the Joint Planning Committee, referred to above, have been created to serve as a connecting link between the highest echelons of the two services, the War and Navy Departments. The personnel of the Joint Board should be composed of senior officers who are eligible for high command and who preferably are graduates of both the service War Colleges. In the creation of these two agencies, we have taken the first

and a long step in the direction of co-operation in joint operations.

Organization is the mechanical framework of, the first step to, co-operation. Indoctrination, like organization, must adapt itself to the peculiar needs of each service-Army and Navy. But in the preparation for joint operations there is a form of indoctrination that should be shared by both the Army and the Navy. Racial traits and national aspirations are important factors in the development of a doctrine of war and these are common to both services. Their influence will tend to uniformity of doctrine as to potential and probable enemies and enemy combinations and as to the nature and extent of joint operations that will probably result from any given war situation. Such indoctrination is essentially a function of the higher echelons of command and staff, and must be articulated with the executive authority charged with our foreign relations. We must know our enemy before we can intelligently prepare to impose our will upon him. The process of getting to know a potential enemy is one that goes on continually through the normal contacts incident to our foreign relations, political or diplomatic, economic or consular, and military or secret service. The personnel of our diplomatic and consular services, no less than our military and naval secret service agents, must be taught what to look for before they can appreciate what they see; and all these agencies must be the product of indoctrination in order that the accumulation, evaluation, and interpretation of information may be readily assimilable by those charged with the war planning functions of the War and the Navy Departments.

From the foregoing it is concluded that organiza-

tion and indoctrination are the means whereby the War and Navy Departments are prepared to co-operate in the preparation for and the conduct of conjunct operations.

Chronologically the first function in the preparation for any specific war is the formulation of a war plan. In a conjunct operation this is a mutual responsibility of both the War and the Navy Departments. There must be agreement between them as to:

(1) The National Aim.

(2) The contributory mission of each Service.

(3) Priority as between the two services with regard to their respective claims on the national resources.

The war aim is the accepted or approved concept of how the objective of National Policy may be attained by military force. The concept of war is deduced from a reasoned estimate of the situation made after the fullest possible study during peace. It fixes the character of the war whether offensive or defensive, and serves as a guide in the determination of the contributory missions of the Army and of the Navy. The decision of the War Aim is a function of the supreme authority of the State. It should be embodied in a Basic War Plan which should be sufficiently general in its requirements not to hamper the initiative of commanders and concise enough to secure co-operation between those charged with the preparation of strategic war plans and with their execution. The Basic War Plan should be formulated by representatives of both services and should specify briefly the following:

(1) The objective of the war.

(2) The nature of the war, offensive or defensive.

(3) The theater of operations.

(4) The contributory mission of each service and, in conjunct operations, whether primarily military or naval.

(5) The estimated expenditure of national resources, men and material, based on the objective and the probable duration of the war.

The Basic War Plan serves as a directive for the formulation of Strategic (or Operating) War Plans. The latter may be for the exclusive guidance of either the Army or the Navy or may be for a joint operation involving the employment of both. It is the latter type of Strategic Plan with which this discussion is concerned. The agency charged with its preparation should include representatives of both services. Its most important duty is to secure co-operation. This requires that there be agreement as to what part each service is to play, the strength of the force it is to contribute to the common effort, and the time and place these forces are to be made available, in the event of mobilization.

A Joint Strategic Plan should therefore contain the following information:

(1) The objective of the combined force.

(2) The contributory objective of each service.

(3) The type and strength of the forces to be prepared by each service.

(4) The time and place each force should be made available in the event of mobilization and concentration.

(5) The nature and extent of co-operative action in both the Zone of the Interior and the Theater of Operations.

The Joint Strategic Plan serves as a directive for

the preparation of the operation orders of the commanders of the land and of the sea forces in the theater of operations. Here begins the problem of co-operation in the conduct of operations as distinguished from co-operation in the preparation for war.

For each War Plan there must be an Industrial Mobilization Plan. The former fixes the expenditure of national resources necessary to sustain the armed forces to be employed. The latter provides these resources with the minimum disturbance of the normal industrial life of the nation. This requires that wasteful competition between the Army and the Navy in supplying their individual needs shall be eliminated. For this reason the Basic War Plan should establish priorities as between the two Services.

In addition to the Industrial Mobilization Plan, there should be a Mobilization Plan to accompany each Strategic Plan in order to provide for the mobilization and concentration of the military forces called for in the Strategic Plan both for initial operations and for reinforcement and replacement dependent upon the cumulative effort contemplated. These mobilization plans deal only with the forces pertaining to one service and for this reason their formulation is not a joint function. However the necessary co-operation is secured by the insertion in the Joint Strategic Plan of a schedule for the mobilization of each service contingent at the agreed time and place.

Co-operation in the conduct of a Joint Operation is a function of the Commanders and their Staffs in the theater of operations. Historically there have been two methods employed, viz:(1) Unified Command; (2) Unity of effort through mutual confidence and understanding between separate Army and Navy Commanders.

The idea of one commander for a conjunct operation appears to be theoretically correct. In practice, the nations which have habitually employed it have not, as a rule, secured results that would establish it as a practical method. The exercise of command over a combined Army and Navy force involves the issuing of operation orders to a force by a commander who neither by training nor by service traditions can claim the full measure of their confidence and devotion. Desirable as is unity of command, even it must give way before the actualities of human conduct.

A recent writer on this subject has suggested that unity of command of a joint operation might be secured by differentiating between "directive command" and "instructive command", the former to be exercised over the forces of the other service and the latter over the forces of his own service. He further suggests that the command of a conjunct operation should be vested in that commander the operations of whose service are paramount in any particuler phase of a campaign. This suggested remedy is believed unsound because it lacks simplicity and plays hide and seek with leadership. In the conduct of war simplicity is strength and leadership is stability.

Our government has consistently relied upon the method of co-ordinate command, each service with its own independent commander. This can succeed in joint operation only if there is co-operation. The co-operation secured will depend upon (1) the organization and indoctrination of the Land and Sea Forces, (2) agreement on sound plans, and (3) the personality of the two commanders and their staffs. The selection of the Army and the Navy Commanders for conjunct operations rests with the

constitutional Commander-in-Chief of the Army and the Navy. However, it is the duty of the War and of the Navy Departments, in time of peace, to indoctrinate and train selected personnel for high command and for General Staff duty for on this indoctrination and training will depend their willingness and their ability to co-operate in the conduct of joint operations.

(b) Embarkation and sea transport.

The embarkation of an overseas expedition can be accomplished with the minimum of delay only when there is the closest co-operation between the Army and the Navy. The activities connected with an embarkation which require co-operation are numerous and varied and demand from each service a sympathetic understanding of the problems of the other service, mutual confidence, a spirit of good will, and a willingness to reach solutions by compromise.

When a landing is to be made against opposition, co-operation during all phases of the operation is absolutely essential. In order to facilitate this co-operation the headquarters of the supreme commanders of the two services should be kept together.

The embarkation of a combined expedition and the operation of a transport service may be briefly considered in the following order:

(1) Designation of ports of embarkation and the provision of port facilities.

(2) Provision and operation of transport vessels.

(3) Conversion of merchant vessels into transports.

(4) Loading of transports.

The designation of ports of embarkation and the provision of port facilities is a responsibility of the army.

Ports selected for embarkation should have ample railway communications with the supply depots and with the concentration areas. They should also be provided with adequate facilities for embarking troops, equipment, and supplies. The facilities required are :- piers, loading apparatus, storage, troop shelter, railway yards, railway sidings, and sufficient anchorage space to accomodate vessels waiting to load or to sail after loading.

If a number of ports are available with all of the qualifications mentioned, those with the most favorable strategical location should be given preference.

At present there is no fixed policy as to which service will provide and operate transports. "It is reasonable to suppose", says Captain Pye of the Navy, "transports for Army Expeditionary Forces will be provided and operated by the War Department for expeditions in the conduct of which no naval opposition is anticipated. In case enemy naval opposition is anticipated the Navy Department will be responsible for providing and operating transports for Army Expeditionary Forces." This is sound doctrine and should be adopted.

Transports now in the service of the army and navy are totally inadequate for a major expedition, hence recourse would have to be made to the merchant marine. It is undesirable to have two separate government agencies engaged in procuring and operating transports, as was the case at the beginning of the World War, therefore some decision as to which service will perform this function should be incorporated in every War Plan.

The kind of vessels secured for transports will depend greatly upon the character of the operation. If landings are to be unopposed large passenger vessels may be desirable because they have speed and great troop carrying capacity. If landings are to be forced, smaller

vessels may be more desirable because of their shallower draft and relatively greater boat equipment and storage spaces, which qualities permit greater flexibility in the allocation of troops to specific operations. The suitability of vessels procured as transports are dependent upon their speed, radii, draft, capacity for carrying troops, cargo and boat equipment.

The desirability of having transports commanded by naval officers, when the transports are to maneuver as part of a convoy, is obvious.

We have no fixed policy as to which department will convert merchant vessels into transports. However it would seem reasonable to have the department that procures and operates them also convert them. It should be obvious that vessels intended for use by the army should be converted in accordance with army plans.

Most vessels obtained from the merchant marine for transports to be used in carrying troops will require some conversion. They will not only require standee bunks, but provisions for additional galleys, storage for fresh provisions, evaporating apparatus, sick bays, and sanitary arrangements. Vessels of sufficient head room should be selected for animal transports. If the operation plan contemplates landing the artillery and its equipment together, a certain number of transports will have to be prepared to carry men, animals, and guns. Animal transports will require stalls, evaporating apparatus, and in case of a long voyage places to exercise the animals. If landing operations on beaches without docks are intended, the ordinary ships boats will be unsuitable and will have to be replaced with the proper kind, such as motor sailers for troops and beetle boats for horses and artillery. If it is planned to use howitzers or guns from the decks of the transports it will probably be necessary to strengthen the decks.

As a matter of preparedness every suitable vessel under the United States flag should be surveyed and plans for its conversion to a troop transport completed prior to war. Otherwise much time will be lost. If we had done this prior to our entry into the World War we would not have had to wait ten weeks before we could start a troop ship to France. It would seem proper to charge the navy, after consultation with the army, with the preparation of such plans.

If the provision of ports of embarkation is a responsibility of the army, it follows that the army should be charged with the loading of transports.

The actual work of loading will necessarily be performed by a personnel assigned to the port for that purpose. This personnel should be independent of the army commander of the expedition since it properly belongs to the Zone of the Interior.

In order that the officer charged with embarkation of the expedition from any one port may make the necessary plans for embarkation, he must know the troops, equipment, and supplies to be embarked; the dates they are released for embarkation; priority in shipment to the port; and the transports that are available and all necessary data concerning them. In case landings are to be forced he must be furnished the loading plans for each transport. Unless instructed otherwise this officer should determine the order in which transports are to be loaded and what troops, equipment, and stores should be loaded on each transport. The quarters available for troops should be definitely marked on the ships' plans. The assignment to spaces of individuals or units should be made by the commander of troops on board.

The arrival of troops and supplies at ports of

embarkation must be in accordance with the plan of embarkation, otherwise a congestion will occur which will probably cause delay and improper loading. At the beginning of the World War our ports became so congested that it became necessary to load vessels without regard to the needs of the troops in France, in order to clear the docks of the accumulated supplies. The congestion was due to the shipment by depots and supply agencies of supplies before they were called for by the port authorities charged with loading the transports.

When the landing is to be unopposed and the troops not expected to begin operations immediately upon landing, the troops to be embarked and the equipment and stores to be loaded are questions only of availability, priority, and the capacity of the transports. Much transportation can be saved by sending the troops and organization equipment separately, their organization equipment to be issued to troops after their arrival at the port of debarkation from pools of equipment and storage depots established thereat. This system was established by us sometime after we began transporting our army to France and it proved satisfactory. In loading troops units should be kept together if it is possible. If it is not possible to embark all of a unit on the same vessel the remainder should be embarked the same day or as soon as a vessel is available.

When the landing is unopposed but the troops are expected to begin operations immediately after landing, units should be kept together and they and their equipment should be sent on the same vessel if it is possible to arrange it. This cannot always be done, especially in the matter of an organization's wheeled transportation unless the vessel has been converted with this end in view. If the troops and equipment cannot be sent on the same vessel, they must be sent on vessels that will arrive together. It is obvious that the equipment

of an organization should be loaded so that it can be disembarked without delay. This will necessitate its being loaded last.

For forced landings, transports cannot be loaded until the plan of operation is known. This plan will be made by the army and navy commanders of the expedition and must be worked backward from the shore on which the expedition is expected to land. This plan will include among other things decision as to the organizations and equipment to be carried, the order in which organizations will land, and the number to be included in each wave. The two commanders must then decide upon a disposition of the transports which appears most advantageous to meet the conditions. The disposition of available special equipment such as small lighters, beetle boats,etc., must also be decided upon. With the transports selected and with the information mentioned above, the staffs of the two commanders in conjunction with the officer in charge of embarkation at the port should prepare the loading plans. For forced landings it is impossible to give too much consideration to the loading plans.

One of the causes of the failure of the Dardanelles campaign was the way transports were loaded. Admiral Wester-Wemyss states; "The confusion that has been caused by the slipshod manner in which the troops have been sent from England is something awful. The ships packed anyhow, things that belonged to one battalion stowed at the bottom of the hold of a ship carrying another and so all through." The Dardanelles Commission found that the reason for this was the lack of a loading plan.

Effective landings against opposition will require that the tactical organizations be kept intact and that their combat equipment be landed with them.To do this will require that the equipment be carried on the same transports as the organizations. Equipment and stores required first

should be loaded last. Tactical organizations should be quartered together. If possible artillery should be kept on deck where it can be cared for and can be prepared for firing before landing. All vehicles carried as troop equipment should be loaded without removing the wheels. Transportation can be saved by having animals, tractors, and all classes of vehicles not immediately required by the troops for operations ashore, carried on separate vessels. Care should be taken to prepare an accurate account of the contents of each store room and each hold in order to minimize the confusion that will occur in case of an unavoidable change in plans.

The commander of the army troops on board and the naval commander of a transport are each supreme in his own sphere. When the safety of the ship is concerned the supreme authority is vested in the naval commander and he will judge when the ship is in jeopardy. The exact relationship between the two commanders should be defined in joint army and navy transport regulations. Their co-operation is particularly essential for efficient debarkation. It is also necessary for the comfort of all on board, which at best will be none too good.

The troops must be thoroughly instructed in their duties at "Fire Call" and "Abandon Ship". During the latter drill they should be instructed in leaving the ship by the same conveyances they would actually use in forcing a landing.

Joint army and navy exercises should be held, simulating as nearly as possible the landing operations planned. By this means errors can be detected and corrected and every individual taught his duties. In a planned land battle no commander would have the temerity to place in the assault waves troops which had never been trained for the work by battle exercises, hence it is inconceivable that troops should be required to make the most difficult form of assault, a forced landing, until they had been trained for such duty.

(c) Landing operations.

There are two principal classes of landings with which we are concerned; landings which are unopposed, and forced landings.

Unopposed landings are comparatively simple technical, administrative and supply problems in which the character of the beach, the kind and number of troops and kinds and number of supplies to be landed and the distance the transports must lie off shore are the governing factors.

Forced landings are of two classes, those of a minor or temporary character and those in which a permanent occupancy of the hostile shore is contemplated from which major military operations may be projected.

Minor or temporary landings must be prepared for and require cooperation on the part of both army and navy, but their conduct, while similar to those of greater magnitude, are much simpler in both preparation and execution and need not be discussed here.

We are concerned, then, with the forced landings of the major type. These landings are, in each case, one of the steps of an overseas expedition undertaken to carry out a joint war plan and lead up to the strategic objective of the plan.

Forced landings may be conveniently divided into two periods; the period of preparation, and that of execution.

In order that the landing shall not be conducted in a haphazard manner, in order that the military and naval commanders shall know what they are going to do, what men and means will be at their disposal, and how these are to be employed to accomplish the mission assigned, the following steps must be taken during the period of preparation.

Study of the Theater of Operations.

Study of the Enemy, his Strength, Dispositions, and Intentions.

Study of our own Forces, Materiel, and the formulation of a clear conception of the job or mission of the combined operation.

Formulation of the Plan of operation.

Formulation of Orders.

Preparation of the men and means in accordance with the plan of operation.

Careful and methodical execution of these steps in preparation of a major forced landing is imperative. Modern methods in the conduct of war and modern means of transportation have conferred great advantage on the defensive, and this is particularly true of the defense of a coast line. Forced landings have always been among the most difficult operations of war and the developments of the present era have made this operation relatively more difficult than before. If success is to be realized thorough preparation must be made in which cooperation between the military and naval elements involved must be the keynote. It must be further understood that the element of surprise assumes in this operation an importance greater probably than in any other operation, except possibly withdrawal and reembarkation.

A complete and thorough study of the theater of operations must be made in order to arrive at a definite understanding of the difficulties to be encountered in making a forced landing on hostile shores and in preparing the way for further military operations on shore. This study should cover the features of the terrain of military importance, the communication system, the fixed defenses, nearby locations that might be utilized as temporary bases, all possible

landing places and beaches, and the effect of the terrain and communications on their defense and relative ability to bring concentrations against each, hydrographic features of the shore line, climatic, seasonal, and current conditions; in short, no feature must be ommitted which may have any influence on military and naval operations in the theater. We should not permit any topographic, hydrographic, or climatic characteristics of the theater of operations to greet us as a surprise.

The study of the enemy's strength, disposition, and intentions must cover his war making power. It must furnish us information of his organized strength, weapons, skill and effectiveness as a fighter, morale, his known defensive organizations, and the efficiency of his transportation system with special reference to his ability to effect military concentrations against a landing in any locality. This study must be closely related to the study of the terrain, which assumes importance directly with its employment by the enemy in his aid.

The study of these two things, the terrain in the theater of operations and of the enemy strength and reactions must be the sure index of the men and means necessary for successful employment against him.

Our military forces as organized together with the organization of our naval forces are well understood. Close cooperation should make each more clear to the other, should make the powers and limitations of each known to the other service. The study of our own forces, to be of any real value must measure them against the mission assigned. Previous studies should tell us the obstacles and difficulties to be encountered as far as they can be foreseen, and enable us to fix the forces needed in number and characteristics

They should tell us also the numbers of transports, the types and numbers of ships' boats, beetles, towing launches and all special equipment needed and should indicate also the special training needed for our forces.

An overseas expedition having been determined upon, the naval and military commanders are designated, suitable staffs are provided for each, and military and naval forces to be employed are detailed. Ordinarily these forces will be organized, equipped and trained in accordance with the decisions based upon the above studies; all pertinent parts of which studies will be furnished to the designated commanders for use in the further studies that may be necessary, and in the formulation of their plans upon which their orders will be based.

It is in these initial studies, formulation of war plans, peace time preparation of the army and navy for war, and in the joint planning of the two commanders, and in the execution of the operation that cooperation between the army and navy is progressively realized.

The general considerations for the formulation of the plan of operation require for execution a rapid and orderly debarkation followed by prompt and effective action of the troops on landing. Supplies and equipment needed for the immediate use of the troops must be on the same ship so that tactical organizations may be kept together. Consequently debarkation plans must be complete before embarkations and loadings can be made. The means to be employed for placing the troops on shore must be assigned in advance and each individual must be instructed in the exact method of debarkation.

These considerations require that complete orders for debarkation and for the first phase of the operations on shore be prepared at the earliest possible moment after a decision has been made to employ an overseas expedition. These orders

for debarkation will form the basis for the plan and orders for embarkation and for the special training necessary to the forces in addition to any previous special training that may have been given.

The plan for the landing should cover the following phases:

First phase: From initiation, and generally continuing through the first day after the initial landing. During this time the army is attempting to gain a foothold on shore.

Second Phase: From the end of the first phase to the establishment of a base on shore from which offensive military operations may be projected.

An army, during the first phase of such an operation is in a peculiar precarious situation, and without the support of a navy could accomplish nothing against a vigorous shore defense, and it is during this phase of the operation that the army and navy must work together as a perfect team.

In the preparation of the plans, the two staffs may function separetely, each producing the plan for the operation of its own service to be submitted for the decision of its commander. Generally the army commander should estimate the situation and prepare a general plan for the debarkation of the landing force and for its operation on shore during the first phase. The naval commander then studies the army plan, makes a naval estimate and determines any modifications of the plan that may be necessary for naval reasons. The two commanders confer and reach an agreement on a general plan covering the joint operations of the two services during the landing and the first phase of the operations on shore, and for the establishment of the base on shore (second phase).

An alternative method of arriving at the joint plan of operation is for the staffs of the two commanders to work

together and prepare the joint general plan which will then be reviewed and determined upon by the two commanders. It is believed, however, that the former method is more desirable as it permits the presentation, without modification, of the vital elements of the army plan to the army commander, who is the commander of the service having the paramount interest in the operation. The staffs can be located near enough to each other so that no element be incorporated in the army plan which is impossible or vitally objectionable from the navy viewpoint, or vice versa, by virtue of the close liaison between the two commanders and their staffs.

Following these steps in the formulation of the general plans the naval commander should submit to the army commander a plan embodying the means to be used in the debarkation of the landing force, the rate at which it can be landed, the navy's beach details, the naval system for communication between ships and shore and the navy's general plan for the support of the landing.

The army commander should now study the naval plan and the two should agree on any modifications necessary and the army commander should prepare and submit to the naval commander detailed plans covering the landing of the entire force, troops, equipment and supplies; operations on shore during the first phase, and for the embarkation and loading of the expedition.

The naval commander should now prepare and submit to the army commander detailed plans for assignment of boats to each landing wave at each beach; men and animals assigned to each boat for each wave; designation of landing places for the boats at each beach; plan for anchoring transports and cargo ships; composition of tows and schedule of movements in landing the expedition; and use of naval forces in support of the

operations on shore.

It is essential, that during this entire period of planning and preparation, the closest liaison and mutual confidence exist between the two commanders and their staffs and that the above steps be expedited as much as possible without sacrifice of thoroughness. Intelligence service arrangements must be made by both commanders so that the latest existing information will be available to the debarkation plans and orders. The character of such information might well be of such portent as to make advisable important modifications of the plans, and require a fresh start from the base after preparation of modified or of even new plans.

In formulating the orders to be prepared by the army and navy commanders, these commanders should be in close cooperation and assisted by their staffs. The orders to be used during the first phase for the embarkation and debarkation of the forces, and for the operations on shore and their naval support during the first phase must be drawn up before the embarkation.

These orders should usually be prepared in the following sequence:

Army field orders for the landing operation and the operation order for the naval support of the landing.

Similar orders for all subordinate army units inclusive of battalions.

Army administrative orders to accompany the army field order.

Embarkation orders for all army elements showing animals, equipment and supplies to accompany the troops.

Army administrative orders for the establishment of the advanced base.

Administrative orders for the loading of all animals, equipment and supplies that do not accompany the troops.

The men and means available for overseas expeditions are dependent upon the policies of the state governing preparation for war and are enumerated in the war plans of the state. In these plans will be found, specifically, the men and means allocated to the overseas expedition.

The preparation and training of the men for the landing operations are naturally divided into two classes, the peace time preparation, and that which takes place after decision has been made to employ an overseas expedition.

In our country there has practically been no peace time training of army units for landing operations, or the maintenance of even a small expeditionary force as such. There are none who will not realize the tremendous value of such training and of the existence of such a force. While it is true that our army and navy in the past have had joint maneuvers, the army in these maneuvers has always played the defensive role and has never been trained in offensive overseas operations on our part involving forced landings. It is of great importance, since our future wars, if such come, are likely to involve such operations, that future joint maneuvers should involve these operations.

Such special training of army and navy units as will prove necessary after our forces are committed to combined operations as can be conducted should be held at every available opportunity before the actual embarkation, as little can be accomplished after the sailing of an expedition. Even during the voyage, however, that little should be done. Military and naval officers who have to be closely associated in the operation of a forced landing should be on terms of intimate association during the period of preparation and should be on the same ship during the voyage.

As the availability of special material and special

equipment has been considered by both army and navy commanders in formulation of their plans, the preparation of these things is of equal importance with the preparation of the personnel.

In order that there shall be no delays after the sailing of the expedition on account of this material, it should be ready before the embarkation and should be called for in the plan, and its collection initiated at the earliest possible moment.

The following special preparation should be made by the Navy:

Provision of special shell suitable for use against land targets, inclusive of shrapnel, gas and smoke shell.

Reinforcement of decks of transports and combat ships of naval escort for the installation of army guns for high angle fire.

Provision of special types of small boats for landing, such as beetle boats, towing boats, etc., and arrangements for use of army machine guns thereon.

Provision of special signal lights for use on shore to mark landing beaches.

Provision of any other special naval equipment that may be necessary.

Complete orders for debarkation prepared before sailing, lack however, the announcement of the date and hour for the initiation of the landing. The exact time for the landing cannot be definitely known before the arrival of the expedition off the hostile shores.

In general the army commander selects the actual landing beaches. Naval conditions and considerations may make modifications necessary, in which case they will be made by conference between the two commanders.

As to the time of landing, army considerations generally demand the debarkation of the troops during the early hours before dawn so that the last wave will reach the beaches just before dawn, while the navy would much prefer to execute the landings by daylight. Due, however, to the tremendous casualties attendant upon daytime landings, it is believed that landings must be begun at night, and that it will be incumbent upon the navy to overcome in some way the disadvantages of night landings. The possibility of surprise inherent to night landings furnishes one of the strong arguments in their favor.

The landing should be made on a broad front in order to cause the enemy difficulty in concentrating against it, in order to put on shore the greatest possible number of men within supporting distance of each other in the shortest possible time, and to start on a wide front the operations on shore for securing a bridgehead. The forces landed should push forward with all possible speed and secure the bridgehead at the earliest possible moment. It is vital to the success of a forced landing that the attackers should be able to debark and organize on shore before the enemy can complete his concentration against them. Superiority must be had if a landing is to be successful.

It is during the transshipment of the army from the transports to the shore and during the first phase of the operations on shore that the army is in its most helpless and precarious situation. It is under the hostile artillery and small arms fire and is subject to air attack, but can employ against the enemy only a small part of its small arms fire power and only that part of its artillery which goes ashore with the landing parties. During this phase of the landing the navy must provide artillery and air support for the operation.

The forced landing will generally be in accordance with

the following sequence of events:

The approach.

The landing of the initial and subsequent waves.

The advance to the beach head.

The organization of the temporary defense.

The landing of combat reserves and supplies.

During the approach, when all the forces are on board ship, an advance air force may engage the hostile aircraft and air instillations. Whether air reconnaissance is made by a strategically independent air force or just prior to the landing operations, it should be conducted on a broad front so that its limitation will not in any sense by an indication of the approximate location of the intended landing operations. During the approach the naval air forces will be charged with neutralizing the hostile aviation and with preventing them from observation of our forces. The naval screen will be charged with similar duties on the surface and with the guarantee of security against submarines.

Normally the transports will stand out to sea until dark in order not to disclose within definite narrow limits the place of landing. After dark the transports will move in to the places designated for them during the debarkation. The actual time for the first wave to get into boats will be indicated by signal when the ships have arrived close enough to the shore to know definitely the time of arrival of the transports at the landing stations.

The transports having reached their allotted positions for the landing, which should be as close to the shore as possible, depending upon the depth of water and the hostile resistance, the debarkation should be begun at once. The anchorages must, of necessity, be beyond the range of the hostile artillery fire or must be under the protection of screens of some kind. It may be necessary to transfer the

troops to warships before getting in close in order that the haul from the ships to the shore shall not be of prohibitive length. It must be remenbered that the shorter this haul, the speedier will be the landing.

For the transfer of the troops from ship to shore they are embarked in the ships' boats, cutters, beetles, etc., provided for the purpose. Boats are towed close inshore by navy launches and cast off when they finish the trip to the beaches under oars or their own power. The beetles have their own power, bullet proof sides and ramps in the bow. As large a proportion of these boats as possible is desirable. The landing boats, however, will be of the types that are available, but preparations should have seen that they are suitable to the particular landing problem. The first wave to reach the beaches should carry naval details whose duty it is to set out on shore the signal lights, shining only to seaward, to indicate to the succeeding waves the exact landing places on each beach. The first wave also carries enough naval personnel to return the small boats to the transports for loading the second and succeeding waves. The prompt landing of each wave is of the utmost importance and this must be true also of the elapsed time between waves which must be the minimum possible.

For each beach the navy provides a beach master who is a commissioned officer who has complete charge of the beach and landing facilities. He locates signal stations for communication with the ships and maintains communication with the navy. He must cooperate with the army officer in charge of the troops left on the beach who do not participate in the advance, and who install and handle all facilities for clearing the beach.

It is vital that the beach should be kept clear in order to avoid congestion. The beach master and naval details

on shore should make known the location of battalion headquarters to all scattered detachments arriving on the beach.

This army beach detail cannot of course begin to operate until the advance has cleared the immediate vicinity of the beach of the enemy. This party is charged with labor, establishment of dumps, collecting stations for wounded, and is generally responsible for all necessary facilities behind the advance of the landing parties.

The naval air service is charged with the duty of strongly supporting the initial landing. Fighting planes must drive off hostile planes, and attack and bombardment aviation must be used to assist in the rapid advance of the landing parties on shore by the destruction of hostile batteries and interference with hostile concentrations. Its observation planes must provide aerial reconnaissance for the landing parties and spotting for the naval artillery support. This air support must be provided by the navy until the army has established facilities on shore for the operation of its air forces and has debarked them. It will provide smoke curtains when needed. The keynote of its operation must be cooperation with the army ground forces since it substitutes for the army air force.

In the event that there is a suitable location for the establishment of air bases for the army air forces in the vicinity of the landing places, which can be occupied unopposed, the land air forces will be there established prior to the landing and will cooperate with the naval air force in support of the landing.

A most important feature of naval cooperation with the army is the artillery support provided for the initial landing and throughout the operation until the army has debarked its artillery and emplaced it to take up its role of support of the infantry. This support should be furnished by the assignment of an adequate number of warships for the sup-

port of the landing at each beach. It must so smother the fire of the defenders as to permit the landing and subsequent advance of the landing parties without losses which will cripple the operation. The naval air force must do spotting duty for this fire support, and must be able to direct that fire on the targets which are at the moment most dangerous to the landing parties. Naval communications from shore to ships must be adequate to meet all requirements of fire control and must cooperate with the army signal system on shore. Army artillery on decks of ships and machine guns so emplaced must cooperate with the naval system of fire control, and must be the last of these types put on shore. The navy must be able to lay smoke screens on shore by gunfire to block off hostile fire on the beaches wherever desired by the army. Aviation may also assist in this kind of support. In this work the signal system plays an important part. It is not to be expected that the navy will be able to bring effective fire against all targets on shore, but naval effort must be concentrated upon the targets most dangerous to the army, and considerable neutralization fire can be employed with both shell and gas. Here again the necessity for signal coordination is imperative. The navy must also be promptly informed of the state of the advance on shore in order to avoid inflicting damage on the landing parties.

After the various landing waves have been put on shore and the troops have made considerable advance, the naval support assumes a somewhat more difficult character, since the targets have moved farther inshore and are generally invisible to the ships. Greater dependence will have to be placed on plane spot and indirect fire. It is probable that the naval fire, or at least a growing portion of it will have

to be directed against enemy concentrations, and enemy artillery firing on the growing army establishments on shore. The army will begin to put on shore the reserves as soon as the successive landing waves have been completed, to be followed by its artillery, stores, aviation, and its transportation facilities. The Navy must assist in the prevention of hostile artillery concentrations against these activities by its fire support in coordination with its aviation and army and navy signal systems. This may be done by the use of naval bombers against artillery positions, plane spot for naval artillery fire against the same objectives, or a combination of both. Coordination must also be designed to prevent planes from obstructing artillery fire by their physical presence over the objective area. Communications must be able to transmit to the firing ships all calls from the shore for direction of fire.

The beach head once having been reached by the troops on shore, the problem of naval support becomes primarily one of aiding as much as possible the debarkation of army artillery of heavy types, army air force, transportation facilities, and finally all equipment needed on shore for the establishment of the base.

From the above discussion of the execution of a forced landing, the importance of complete plans worked out in advance of embarkation, embarkation in accordance with that plan or plans, an efficient development of coordination between the signal systems of the two services, and the ability to carry out the landing operation against hostile naval interference must be apparent.

It may be inferred that the landing must be conducted on as broad a front as will be permitted by the landing beaches, the small boat equipment available, and naval ability to provide fire support. As the prime consideration

on shore is the tenure of a beach head at the earliest possible moment capable of giving the beaches immunity from hostile artillery fire, and conferring upon us the ability to reinforce faster than can the enemy; again it must be stated that preparation, cooperation and surprise are the elements which promise to us the greatest success.

A forced landing should not be attempted unless the navy can secure and exercise control of the sea, unless there is adequate preparation, thorough cooperation between the two services, surprise as to the time and location of the landing, and local superiority.

(d) After a landing in the theater of operations.

Cooperation between the army and navy should continue after the initial landing has been completed. If the initial landing is a success a beach head will have been secured which will include a defensive covering force thrown out toward the enemy and behind this covering force sufficient terrain for the establishment and organization into their offensive formation of the army forces which are to conduct the land campaign, and for their base facilities.

The desired cooperation subsequent to the actual landing will consist mainly of assistance to the army's land campaign by the navy. It is true that in certain situations the army, through the agencies operated by its intelligence service, can supply the navy with valuable information for local operations. By the erection of certain shore batteries to cover critical points which otherwise would have to be protected by the navy, by the employment of army engineers for the construction of necessary naval shore facilities, and in other minor ways the army may assist the navy. The cooperation of army and navy air units will be mentioned later.

The most important assistance the navy can render the

army in its conduct of the land campaign is to secure and exercise control of the sea in the theater of operations. This control of the sea will permit the uninterrupted supply and evacuation of the friendly land force bases and it will interfere with the operation of those of the enemy. When this control is in jeopardy all of the navy's resources must be employed to secure it and any other assistance which the navy might otherwise furnish the army will depend upon the navy's freedom to disregard its primary role; namely, the maintenance of control of the sea in the theater of operations.

As a result of securing control of the sea, even though that control might be disputed at a later period, there are a number of specific and direct ways in which naval forces can assist a land campaign. The following have been illustrated in modern war:

By securing the advancement of the army base along the coast. Kuroki's Army in Korea was thus assisted to advance. The naval forces reconnoitered new bases and protected their establishment. This enabled Kuroki to avoid many miles of muddy and almost impassable roads and also to reduce the number of troops employed on his land line of communications.

By outflanking the enemy's battle line when it rests upon the sea. In his advance to Port Arthur, Oku made several unsuccessful attacks upon the Russian position at Nanshan Hill. The position was finally captured after Japanese war vessels stationed themselves in Chinchou Bay and enfiladed the left flank of the Russian position.

By furnishing artillery and air support during critical phases of battle. It has been a common practise in amphibious operations to land naval guns to assist the land forces. Some of the largest guns on the western front during the World War were naval guns manned by naval crews. It is apparent that

air forces from the fleet, if not needed in the fleet at the particular time, may operate with the army air forces during a critical phase of the land battle.

By securing and exercising control of a river line by the operation of gunboats and small river craft. In the Mesopotamian operations naval forces were thus of great assistance to the army.

By landing special equipment or personnel from the fleet to supply a deficiency which temporarily exists in the land forces. Examples can be found of the use of naval signal apparatus, distilling plants, specially qualified mechanics, etc., taken from the fleet and adapted to the assistance of land forces, particularly during the early stages of an operation.

The principles brought out in the discussion of the embarkation of an overseas expedition and of the landing of such an expedition, if applied in any joint undertaking after the beginning of the land campaign, will secure cooperation. Some of these principles are so important that they deserve repetition.

First, there should always be adequate preparation. This means that the task must be thoroughly understood. It involves a study of the enemy and of the theater of operations. It requires a proper appreciation of the scope of the undertaking, the provision of sufficient means, and complete plans of execution.

Secondly, there must be unity of action. This may be accomplished by unity of command or by joint planning and preliminary agreement supported by staff work of a high order and an excellent system of signal communications.

Thirdly, in joint combat involving both land and naval forces subordinate commanders must be kept informed of the progress made by all forces that can support them or to which they can render support. In the Port Arthur op-

rations Japanese naval vessels bombarded positions held by their own land forces. When a Russian fort was captured and plans of a mine field found therein the plans were immediately sent to the fleet.

If the land campaign is unsuccessful a withdrawal may be decided upon. A withdrawal of a land force by sea and in the face of an undefeated enemy is a very delicate operation and requires the maximum of co-operation between the army and navy. This co-operation can only be secured by the timely preparation of a joint plan worked out in great detail. The organization and methods adopted for the execution of the joint plan will be to a great extent the same as those adopted for the execution of a joint plan for a forced landing.

Because of their similarity and because of the fact that they operate in the same element, units from the army air service and from the naval air service may be ordered to support the forces of the other service or to act in conjunction with the air units of the other service. In either case it is believed that air units should always operate under their own high command and not be temporarily turned over to the commander of the other service. Units so employed can be assigned missions in accordance with a joint air plan agreed upon by the supreme commanders of the two forces and upon completion of the assigned missions the air units will be at the disposition of their normal commanders. This method of employment will tend to eliminate friction, will not disrupt normal administrative and supply arrangements, and will promote competition.

The controlling ideas to be remembered are that after a landing has once been successfully accomplished the campaign becomes essentially a land campaign executed by

army forces and that the chief duty of the navy is to exercise control of the sea in the theater of operations. In addition, in the special cases that may arise where the navy can directly assist the army in the conduct of purely land operations, or where the army may be of minor assistance to naval operations, there must be a task clearly outlined and the means at hand must be so applied as to accomplish that task.