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THE NAVAL ADVANCE BASE.

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The discussion of this subject has been arranged under the following subheads: - -

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2. Tactical Considerations Affecting the Selection of  
Any Particular Point as an Advance Base.
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Types of Cannon Use and Method of Installation.
5. Personnel of the Outfit and General Considerations  
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6. Defence of a Base Against Attack From Sea and Land.
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### NECESSITY FOR AN ADVANCE BASE.

To begin with, it will be necessary to keep in mind the distinction between the Permanent Base and the Temporary Naval Advance Base. Even though a country should, in time of peace, complete and equip all the needful chain of permanent strategic bases yet, should war arise, the Temporary Advance Base would generally still be a necessity, and a fleet lacking the resources for acquiring such a base when needed, must of necessity be considered woefully unprepared.

The location of this base can not be determined until hostilities have commenced, and, once decided upon, may be changed as the circumstances of war dictate.

It is recognized that the modern man-of-war demands a most elaborate system of maintenance and supply - something more is necessary than bases for the mere re-victualling and watering of ships as in former days. Modern ships must be docked, machinery overhauled and otherwise renovated; and the replenishing of such supplies as coal is an absolute essential. These are necessities even in time of peace, and, in the words of Caldwell "war merely increases existing strain and does not create it."

Whereas in time of war the presence of a fleet in a particular locality results in the control of the sea at that point, it

is the existence of some base in that area which makes the presence of the Fleet possible.

Now as the situation of a permanent base makes possible the operation of a fleet in that particular strategic area - so will the situation of a temporary base within that area be the means by which the fleet will be enabled to keep in actual touch with the enemy.

Without such a base, the protection of the attendant coal supply might prevent a commander from taking the offensive, though in command of a superior naval force.

"The strategic conditions of naval warfare (says Caldwell) are often such that one of the belligerents has no suitable base to depend on in the theatre of actual warlike operations, even when having at command the fighting resources necessary for acquiring a harbor adapted to the purpose;" That either of the belligerents would be without the fighting resources necessary for acquiring a base when needed, does not seem to be worthy of consideration. Such lack of forethought expressed in this instance would probably be indicative of a general lack of forethought in other vital matters.

The history of the Russo-Japanese War gives a notable example of the selection and location of an advance base which was within easy steaming radius of a home base, in fact within a



few hundred miles, and yet the Japanese considered the Elliott Islands necessary as a base for its fleet operating before Fort Arthur. The occupation of this advance base by the Japanese permitted the main fleet to lie in comparative security and rest while the duties of observation and guard were performed by a few, thus protecting the main fleet from exposure to heavy seas and inclement weather which it might otherwise have experienced.

It is obvious that having the coal supply at a base near or within the actual theatre of operations increases the power of the fleet depending upon it.

TACTICAL CONSIDERATIONS AFFECTING THE SELECTION OF THE BASE.

The approximate location of the base will be <sup>de</sup>termined by the circumstances of the war; the exact location, where more than one position is available, must depend upon a comparison of tactical qualities such as:

- (a) Good berthing space for train and one-half the fleet.
- (b) Good anchorage protected from the elements.
- (c) Easy <sup>of</sup> entrance or egress.
- (d) Capable of quick defence by moderate force from sea and land.
- (e) Approaches such that they can be covered by shore batteries.
- (f) Adaptability of entrance to mining.
- (g) Inadaptibility of approaches to mining.
- (h) Impracticability of bombardment from sea.
- (i) Small range of tide and weak tidal currents.
- (j) Healthful climate, good water and abundant resources.

It is not probable that all desirable tactical qualities can be obtained in any one place but having a suitable harbor capable of defence by a moderate force it may be possible, by artificial means, to improve the others sufficiently, for all practicable purposes.

The base selected should preferably be on a small island, with but one harbor, thus permitting the available force to deny a landing to any enemy elsewhere. If necessarily placed on the mainland, it should be so surrounded by natural obstacles as to minimize the advantage thus accruing to an enemy.

It is recognized that island positions present the most favorable conditions for defence. Had Port Arthur been separated from the mainland by a few miles of water it would have still afforded the same protection to the Russian Fleet, have still retained much of its strategic importance to Japan yet, because isolated, could have held out for a longer period of time. I quote from the report of Colonel Kuhn on the operations around Port Arthur: "Without General Nogi's Army it would have been impossible to dislodge General Kuropatkin's from his strong position before Mukdin and even with the Army it is extremely doubtful whether the Japanese could have won their success at any other time than in winter. In my judgement it is not too much to say that the entire fate of the Mukdin campaign was intimately connected with the period of the fall of Port Arthur; whereas the ground was frozen and the



passages of all rivers practicable at all points at the time of the battle, a few weeks later the rivers were ice free and the ground to the west of Mukdian so boggy that it was difficult to move about on horseback."

As an example of the defensive strength of an island position against ships' fire I have again had recourse to Major Kuhn's report. He states that with the exception of a few doubtful incidents no evidence of ships' bombardment against the shore batteries of Port Arthur could be found and that although a Japanese report states that the cruisers *Nisshin* and *Kasuga* on August 23, 1904 bombarded and silenced sea coast battery No. 9, the battery bore no evidence of such bombardment. A more detailed account of the effect is contained in the following translation from the "Artilleristische Monatshefte (Artillery Monthly) January and February 1907: "The cannonade lasted usually for an hour and was conducted at a range from 8,000 to 9,000 metres. On March 10, 1904, the Japanese Fleet fired about 155 heavy shells, resulting on the Russian side in nine men killed and 5 wounded. On March 22, 100 similar shots caused the killing of 5 men and wounding of 9; 185 shots on April 14 wounded 5 Russians. As to the effects of the fire upon fortifications themselves, the shells that exploded on the ground or against stonework produced but very insignificant craters. Brick walls were not injured even when the shells ex-

ploded in the immediate neighborhood. One shell exploded in the concrete parapet, tore off part of the outer layer and cracked the inner surface but did not perforate the wall. The result of the bombardment was 'more than a failure'. It may also be mentioned that the Japanese (ships) used high angle fire against Port Arthur, but this resulted in the gun carriage being badly damaged because of the great elevation. They had probably not been constructed with a view to such use."

CONSIDERATIONS AFFECTING SIZE AND STRENGTH OF  
THE ADVANCE BASE OUTFIT.

The primary object of the base is to secure, when necessary, and then in the shortest possible time, a refuge for the train, thus leaving the fleet unhampered to seek the enemy. Therefore the material of the outfit should be such as can be quickly installed, and such that prior to installation will not unnecessarily enlarge the train. Quick installation prevents the use of guns too heavy to be transported with comparative ease, or which require platforms of a permanent nature or of a type requiring a great length of time to construct.

The query naturally arises, "do these limited sized guns possess sufficient defensive strength to meet the requirements of the base?" Admitting that they are too small to repulse armored ships save in conjunction with mines, torpedoes or submarines, it is to be noted that this is sufficient inasmuch as the



main fleet can be depended upon for protection against anything larger than a raid, and a raid, in order to be effective, must be executed secretly, quickly, and be in the nature of a surprise, otherwise the fleet could make dispositions to meet and destroy it while at sea.

A force of 15,000 or 20,000 men could hardly be considered a raiding force in such a case, owing to the number of transports and the protection they would require, so that the size would probably be limited to 5,000 or at the utmost 10,000 men.

#### MATERIAL.

The armament should consist principally of rifled guns, howitzers, mortars, mountain and machine guns, mines, torpedoes, and submarines, with the necessary searchlights, range finders, material for constructing magazines, bomb proof redoubts, etc. The actual amount has been variously estimated and can be found in the Conference Report of 1909 as well as in other official papers relating to the Advance Base. Suffice it for this paper if it but introduce the question of the types of guns to be included in the outfit and the methods of installation and use as developed by modern wars.

The late Russo-Japanese War has clearly established the fact that indirect fire must in future be resorted to both by attack and defence. In the early days of the siege of Port Arthur the

Russians neglected this feature much to their sorrow but towards the latter part from necessity adopted it and found that good results could be obtained even against a rapidly moving target of men. At all times of course mountain and field guns were available to rush into previously prepared positions from which direct fire was possible to oppose an assault but they were not exposed until needed and only so long as absolutely necessary. The use of cover was so extensively developed in this campaign that belligerents in trenches separated by a few hundred yards only could do no damage to each other by direct fire, and resorted to the use of hand grenades and improvised mortars. Batteries using indirect fire need concealment only for which purpose lines of trees or any other form of effectual cover from observation is sufficient, for it will be chance shots only which can affect them.

Now whereas the use of indirect fire has become a common and necessary practice in land warfare, it has never, and probably never can be used extensively by the Navy, due to the fact that in order to be effective ships must anchor and obtain cross bearings on shore, the location of which must be accurately known with relation to the target - furthermore such anchorages will generally be within range of the guns of the defenders, which are, when possible, placed well in advance of the object defended and



thus help to neutralize the advantage due to the greater range of the ships' guns. Furthermore, anchored ships afford the best target to high angle fire, a form of attack that ships are least suited to resist. Now bearing in mind, that the direct fire of ships' guns will have no effect on properly mounted high angle fire shore batteries, it seems imperative that the outfit should include a large percentage of guns of this type, and as indirect fire is of such great value to the defence, it must be employed in the use of all other guns of the outfit so far as is possible.

Sir George Sydenham Clarke remarks that: "The accuracy of this fire (high angle) will however depend entirely upon accurate observation, but inasmuch as all the high angle guns of the defence can generally be so concealed as to be secure against everything except chance shots, their accuracy of fire should approach more nearly to the standard of pease practice than is possible in the case of guns using direct fire."

Moreover, the defender is in full possession of his position, knows all the surrounding ground and has his guns ready for action with a perfectly organized system for the control and direction of fire, when the besieging force arrives. Finally, overhead cover from high angle fire is the kind that besiegers find hardest to provide whether they be on the sea or on the land.

To sum up then the advantages and disadvantages claimed for high angle fire we have for the affirmative:--

1. A ship is peculiarly susceptible to the attack of projectiles falling on her deck.
2. The accuracy of high angle fire is sufficient to prevent ships anchoring in its area and unless anchored their bombardment can not be effective where the target is, as should be, concealed from direct fire from the sea.
3. A gun of the same calibre as those proposed for direct fire can be used, which is of much less weight.
4. The striking energy is not lessened by increase of range as the velocity on arrival is practically that due to gravity.
5. The guns can be mounted where they cannot be hit by the fire of ships.
6. There may exist areas of water from which the object defended can be bombarded by ships, which area cannot be brought under the fire of direct fire guns without special works, extension of fortifications, expense, etc., but which can be covered by high angle fire.
7. High angle guns have an all around arc of fire and therefore can participate in the sea or land defence.

For the negative:--

A harbor filled with dock yards and large shipping must be



as a target of such great dimensions might suffer severely from the indirect fire of such ships even though they were under way firing on compass bearing.

~~enemy~~ <sup>^</sup> outside of bombarding range, <sup>^</sup> but as the advance base outfit is not designated of itself, to protect large shipping and dock yards from attacks by heavy ships of the enemy this negative reason does not apply.

The experiences of the 28 centimeter battery in its attack on the Russian ships at Port Arthur have been cited by many authorities to disprove the efficiency of mortar batteries in general, and in an interesting lecture by Lt. Col. C. F. E. Harrison, Art. Corps, delivered before the Artillery School in 1906 these very interesting facts were brought out. The carriages of the mortars were practically those of the old smooth bore gun, which the United States abandoned with the advent of the breach loader. The shells were uncapped, made of cast iron and weighed only 448 lbs., the bursting charge of 20 lbs. black powder, making in all a far inferior gun to the United States gun of approximately the same calibre.

As regards the power of these inferior mortars, Col. Harrison quotes from a report of one of the observers as follows: "The Pal-lado was struck by a shell which passed diagonally down through the smoke pipe casing, main deck, bulkhead, lower deck, then glanced from the side and buried itself in a coal bunker along the

protected by long range direct firing guns in order to keep the enemy <sup>ships</sup> outside of bombarding range, but as the advance base outfit is not designated of itself, to protect large shipping and dock yards from attacks by heavy ships of the enemy this negative reason does not apply.

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protective deck where it went to sleep, having passed through 5 or 6 plates of 1/4 to 5.8 inch steel."

On the Bayan "One passed through the upper deck, main deck, and protective deck, over the starboard engine room, falling apparently almost vertical, then through the top and bottom of the intermediate cylinder and there exploded, doing further damage to the machinery."

After recounting several more such examples Colonel Harrison concludes by saying that: "This it seems to me, is a pretty good showing in favor of the mortar."

As the restriction limiting the size of guns of the outfit is most important, a table of the comparative weights of guns, howitzers and mortars in use in our service is here appended.

Type	Cal:	WEIGHTS.		Total	LBS.				
		Gun	Car'ge Limber		Projec- tile.	Charge	Range yds.	Elev	Rem Vel. F.S.
Na.50c	6"	18748			105	46			
Na.50c	5"	9856			60	27			
Na.F'ld	3"	400		1830	13.2				
Na.50c.	3"	1950	6050	8000	13	5			
A.F'ld.									
Htz.	3.8"	391	3509	3900	30	1.2	6300	45°	707
A. F'ld.									
Mtr.	3.6"	245	300	545	20	0.38	3360	45°	515
A.Siege									
Htz.	6"	1660	6240	7900	120	4	7000	45°	764

Regarding the accuracy of fire of the howitzers and mortars

the following data taken from<sup>2</sup> publication by Clarke, Fortification 1907 is included

	: Shell :	M. V. :	Range :	Rectangle :	Angle of descent.
8" Hwtz.:	276 lb.:	781 f.s:	3000	:21' by 2.4'	: 17° 52'
:	:	:	4000	:27' by 3.1'	: 25° 30'
:	:	:	5000	:35' by 3.8	: 37°30'
:	:	:	:	:	:
-----					
6" Hwtz.:	100lb. :	931 f.s:	3000	:19.4'by 5.2'	: 12° 3'
:	:	:	4000	:26.6'by 7.6'	: 17°25'
:	:	:	5000	:34.6'by10.5'	: 23:30'
:	:	:	:	:	:

The rectangle indicates the area in yards in which 50% of the shots may be expected to fall.

At the target practice held at Fort McKinley in connection with the Army and Navy Maneuvers, 1903, out of 29 consecutive shots fired by 12" mortars at a target moving at the rate of 7 miles an hour, at ranges varying from 8,200 to 9,600 yards, 9 hits were made on a target, the superficial area of which was that of an ordinary battleship. The actual target was, of course, much smaller. An average of 31% of hits. This was record firing and hardly a criterion of what might be expected under ordinary conditions. At a later practice the Artillery Inspector of the Atlantic Division stated that the mortar fire was as accurate as that of the 12" gun and infinitely more effective.

It is not the intention of this paper to advocate the substitution of high angle ~~indirect~~ fire guns entirely for the direct fire ones now thought best for use in the Advance Base Outfit, but



it is thought that the number of direct fire guns should be very materially reduced, and that the lighter gun with its all around arc of fire should be substituted for it. A sufficient number of direct firing 50 calibre 5" guns are included in the outfit for long range firing. These should be mounted on high ground with a view to concealment and increased accuracy of fire. Contrary to the belief of many this elevation gives little protection from ship fire at battle ranges - nor does it increase the angle of descent of projectiles sufficiently to enable the ships deck to be attacked.

By this general scheme of gun defence, augmented by a proper use of mines, torpedoes and submarines of a small portable type for the sea, and by a properly organized mobile force equipped with machine and field guns as a land defence, it is believed that in a short space of time an Advance Base could be made sufficiently secure for the duty it is intended to perform.

To meet all requirements it is estimated that 4 - 50 calibre 5" and 6 - 50 calibre 3", 12- 6" Army Siege Howitzers, 12 3.6" Army field mortars, 4 3" field or mountain guns, 40 30 calibre Bennet Mercie machine guns, 1 submarine, 200 naval defense mines together with ammunition, range finders, search lights, and material for transporting and construction purposes generally will be necessary.

~~It would of course be preferable to have the howitzers,  
mortars and guns alike in calibre where possible.~~

PERSONNEL.

There should be sufficient personnel:-

(1) To man the fortifications and accessories intended to resist attack from sea.

(2) To form a mobile force sufficient for the protection from attack by land. This force will, where possible, repulse any attempts by the enemy to land and if this be impossible endeavor to make the landing as costly in time and men as possible.

To meet these requirements a fleet should be provided with two A. B. outfits, one to reinforce the other when necessary or for the purpose of acquiring an addition of base.

It is estimated that the personnel of the outfit should consist of 2093 officers and men divided in proper proportion: 1st, to the 50 cal. 5" and the 6" howitzers; 2nd, to the 50 cal. 3", the mines and torpedoes; 3rd, to the mobile forces which includes details for the machine and field guns; 4th, to search lights, signals, communications, etc; 5<sup>th</sup> staff, medical department, etc.

Approximately 600 men to each of the first three divisions and 150 to the fourth would give the proper proportion.

The organization of this force should be such of course that the Advance Base commander commands the whole - that is, both



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~~Each outfit should consist of a regiment of 2,093 officers and men. These should be apportioned; a battalion of 600 to the cal. 5" and the 6" howitzers; a battalion of 600 to mines, 50 cal. 3" and the torpedoes; and a battalion of 600 to the mobile force which includes the details for field guns, machine guns, and field mortars.~~

~~A company of 150 to search lights, signals, communications, etc., and the remainder to the medical department staff, etc.~~

The organization of this force should be such of course that the Advance Base commander commands the whole - that is, both

sea and land defence.

One officer should have command of all the sea defences; not only the guns, mines, etc., but also the signal troops operating with these, and nay infantry which may be attached from time to time.

Battalion and company organization should be maintained intact in so far as is possible, for purposes of discipline, administration and general efficiency.

The Artillery of the sea defence as shown by the assignment of battalions, should be divided; 1st, the heavy guns and howitzers; and 2nd, the light, quick-fire guns and mortars.

The artillery of the land defence consisting of field, machine guns and mortars are all handled by the mobile force under one commander.

The targets for the heavy guns and howitzers will be the enemy's ships, which must, if possible, be kept at a distance, not necessarily by disabling them, but by the injury it is possible to inflict or threaten.

The firing of these guns will usually be in daylight, and under the personal supervision of officers.

The 50 cal. 3" will ordinarily be operated at night, aided by searchlights and with the object of preventing the enemy from landing, sweeping for mine fields, or of entering the harbors



with destroyers. Their fire may have to be directed at several targets simultaneously. It may have to be delivered with great rapidity and possibly with several changes of target; therefore the responsibility of accurate shooting must rest entirely upon the gun pointers who will have accurate knowledge of surrounding ranges and will be charged with the protection of certain arcs. for these reasons the gun pointers of this type of gun require most careful training and constant practice.

Howitzers and mortars require highly trained men for their operation, as indeed <sup>must</sup> be the personnel using indirect fire <sup>with</sup> any type of gun.

The personnel of the field or mountain and machine guns should have a thorough knowledge of the surrounding country; 1st, to permit of the best use being made of the terrain tactically; and 2nd, to insure ease of transport when shifting to different positions.

The organization once having been determined upon should be rigidly enforced and where the nature of the country is such that little defence is necessary from the sea and much from the land, one sub-division should re-inforce the other and become part of it for the time being.

Whatever the organization; it should be such that it can be made to meet the different tactical requirements of the various

positions which may be selected as bases; should give to every officer and man a distinct duty suited to his capacity, and should insure undivided responsibility.

#### ON PREPARING DEFENCE OF A BASE.

The assumption is made that a base properly defended, can not be successfully attacked from the sea alone and that all such attacks will therefore be supported by, or be in conjunction with one on land. If the land attack is unsuccessful the combined attack must be a failure. The assumption is also made that the attack will be in the nature of a raid and will therefore consist of a force somewhere between 5,000 and 10,000 men.

Upon disembarking at a position selected, the Commander of the Outfit must, in general terms;- prepare the position so that with the available force he can repulse the most powerful raid that need be apprehended, and prepare the camp with a view to health, instruction and most efficient concentration.

#### DEFENCE AGAINST SEA ATTACK.

As stated before this consists of guns, torpedoes, mines and submarines. The 50 cal. 5" guns and 6" howitzers are to prevent ships of the enemy from entering zones within bombarding range of the harbor protected; there is little danger under modern conditions of ships attempting to run past the batteries as they must have room to maneuver once inside the harbor, but should this be



attempted it becomes the duty of this battery to frustrate it if possible. Whereas, under such circumstances they might not be able to sink a heavily armored ship they could destroy all the funnels, etc. and with the mines and torpedoes probably repulse the attempt.

A base with its harbor exposed to direct fire from sea is an unfortunate selection for the range of the guns of the defence is much less than that of the guns of a big gun ship which under the above conditions could lie out of range and bombard. This may be offset in part where the harbor is deep and the guns of the defence can be placed well in advance of the anchorage they hope to protect.

It is unnecessary to provide against bombardment by indirect fire from ships (i.e. where they can not see the target) due to the difficulties already mentioned.

Effective bombarding range varies with the size of the target and with the size of the gun used. The most vulnerable and extensive target at an Advance Base will probably be the train which it shelters.

The guns used in the bombardment most probably will be those of cruisers and unarmored ships.

Now when it is remembered that the howitzers well placed can not be silenced by ships' fire, and that it will be difficult to silence the direct fire guns if properly concealed, it does not

seem possible that even heavily armored ships would remain under a fire which if it did not disable would certainly do much damage to the upper works, funnels, etc., and which might materially affect the speed for instance and cause the loss of the ship later should it encounter an enemy before repairs could be effected.

Much less could an unarmored ship withstand this fire.

In order to obtain the greatest advantage from the 5" guns, and in a measure what follows applies equally to the 6" howitzers: they should be emplaced, 1st, to support each other and prevent individual guns from being attacked and silenced, singly and in succession. 2nd., to take advantage of good sites which could not be utilized because of accompanying dead zones, unless covered by supporting guns. 3rd. In concealed positions, to lessen the liability to injury, lessen the cost and time of construction. 4th. At height above sea level to aid in concealment; in fire control, and accuracy of gunnery. 5th. With guns dispersed to prevent concentration on the part of the ships and to gain it for the batteries. 6th. In positions unfavorable to attack by small landing parties, otherwise large infantry guards would be necessary. 7th. In position affording facilities for the construction of emplacements, magazines, communications, barracks, etc.

The 3" 50 cal. quick-fire guns are charged with the duty of repelling torpedo craft and the protection of the mine fields. As



they will be used principally at night the selection of the emplacements may be materially affected by considerations governing the location of the search lights.

Such lights must be mounted to effectually sweep the whole area through which the destroyers in making an attack must pass and in positions low enough to prevent them from creeping under the beams. Low positions for the lights are also a necessity as the torpedo defence guns which in themselves require low positions should be mounted above the search lights.

In order to determine the amount of illumination necessary to prevent a night attack by torpedo craft, Captain A. E. C. Myers, R. G. A. (Duncan Gold Medal Essay 1905) examined the results of peace practice, considered the effect of war conditions on the same and came to the conclusion that a 12 pdr. could make 4 hits on a boat in 1,000 yards of illuminated area, and that 2 hits would be sufficient to knock out any one boat. But for a single gun to take care of two boats would require a shift of target, and as a destroyer could cover the 1000 yards in 75 sec., General Johnson estimated that an allowance of one gun for one boat in an illuminated area of 600 yards would be a safer plan to work upon. The number of guns required then would depend upon the width of the approach and channel defended, and upon the number of torpedo craft likely to participate in an attack.

If the channel defended were narrow, fewer guns are necessary and that in itself would indicate the proper fire tactics to be used for in this case the disablement of the leader would impede and throw into confusion the followers giving greater time to complete the destruction of all, if on the other the channel is of such width as to permit of the attack being made in line formation guns must be available to stop all within the illuminated area.

As three, four or five seem to be the number of destroyers which usually act together offensively and as ease of defence is one of the desired qualities of a position selected as an Advance Base it is thought that 6 50 cal. 3" guns will be sufficient for torpedo boat defence and for the covering of the mine fields.

Sites for these guns should be selected: -

1st. To obtain the best results at short range - this, because they will be used principally at night or in misty weather when 1600 to 1000 yards will be the maximum firing range.

2nd. At a height of at least 40 feet to permit the search lights being mounted lower down without interference from the spray.

3rd. In positions not visible to the attackers to whom the fire will come as a surprise and further because if visible they might act as land marks and aid in navigation.

4th. Close to the shore to prevent dead angles.

5th. Concentrated to aid in their superintendence and management



In general the two most important requirements are a clear field of fire and facilities for unlimited supply of ammunition.

#### SEARCH LIGHTS.

The search lights for use with these guns should be mounted:-

1st. To make certain the early discovery and identification of an enemy.

2nd. To illuminate a number of targets simultaneously and in different parts of the field of fire.

3rd. To illuminate adjacent beaches or other favorable landing places for an enemy.

4th. To cover mine fields and channels leading to harbor.

5th. To the right or left, above or below (preferably below) the guns which they serve as both gun and projector at certain angles of train are in the same vertical plane.

Search lights intended for long range must be mounted at least 40 feet above high water to allow for the curvature of the earth.

#### DEFENCE AGAINST LAND ATTACK.

(General considerations)

The most successful and therefore most frequently used mode of attack is to mislead by a series of feints and at the proper moment strike home at some weakened point with all available force. This mode is particularly easy where the attackers are on ships and can move rapidly from one point to another forcing the defenders to move troops and guns to meet each expected landing which if not accomplished in

time offers the opportunity and advantage desired by the attack.

If the harbor defended is on the mainland it would be impossible of course to deny a landing some where to the attackers, and the effort would in this case be only to prevent a landing within the radius of action of the mobile defence which ultimately must depend upon a previously prepared and fortified line to keep the attacker outside bombarding range of the harbor. Island positions capable of being held by an Advance Base Outfit so as to deny any landing to the enemy would of course be the best and are likewise the hardest to obtain.

Under no circumstance should the main line of defence include positions which can not be held, for undue extension might result in the entire loss of the harbor, which otherwise would only suffer bombardment. Given a certain force the line of resistance selected must depend very materially on the tactical features of the ground; if, for instance, the terrain is such that the attackers must approach along a certain defined route - a defile for instance, then of course the line can be extended much farther than if the country were open and an attack possible from all directions. Again, if the principal points of defence in the line are separated by creeks, rivers, etc., making communication difficult the line must be less extended

The most, and perhaps only efficient protection of a position against <sup>the</sup> high explosive shells which are now in general use in modern armies, is the almost solid concrete fort which was used during the



siege of Port Arthur, but this type is of too permanent a nature and too costly in time and money for use with the Outfit. Improvised redoubts however should be prepared in important exposed positions as rallying points in the line of defence; from which well protected guns and lights can sweep the fronts and intervals, which intervals will be well internched and ready to be occupied if necessary..

All intrenchments should be prepared with material close at hand for head protection, though this need not be used until it is certain to be necessary. Gun emplacements should be selected with a view to obtaining the greatest arc of fire, they should be concealed by trees, hedges, etc., and depend upon indirect fire at all times except when repulsing assaults at which time they must run into previously prepared positions and use direct fire.

All guns of position used in the land defence should be in concealed positions and use indirect fire. Additional emplacements should be constructed for these guns at points of particular advantage as it may become necessary to shift their positions either through necessity or desirability. Above all, a complete system of communications must be pushed with all rapidity. This system should be carefully planned and provide for good roads, screened by trees, etc., to conceal all movements in rear of the line of defence from the attackers. On one occasion in the late Russo-Japanese War, the Japanese moved artillery and infantry parallel to and within easy range

of some Russian guns, while were in position just across a river, by the simple device of planting at night a matted screen, made to resemble a natural growth, along the exposed portion of the road.

Having prepared a line of defence only enough of the mobile forces should be employed in its protection to hold out, in case of attack, until reinforcements could arrive. The remainder should be held as a reserve for the purpose of reinforcing threatened positions for counter assault, and for offensive operations.

If necessity or haste compelled the attackers to advance along the coast line in such a manner as to expose his flank, it should most surely be taken advantage of, by an energetic attack on the part of the mobile force of the Base rather than to keep the same force couped up in some previously prepared position, anxiously awaiting to be attacked.

Whether this force is employed offensively or defensively, to be properly handled, its commander should have a thorough understanding of the influence of terrain upon the tactics of field and machine guns and infantry.

Finally the defence must provide a series of positions to which the garrison can retire step by step if forced back, for it must be borne in mind that until the attackers are in undisputed control of the harbor defended they have not accomplished their object. By retaining one small part of the original defensive position the problem of retaking the whole when reinforcements arrive is simplified a hundredfold



Imagine for a moment that a force defending Guam has been surrounded and driven in until they are entrenched across the neck of the Orate Peninsular. From the charts available of that region it would appear that this force would be able to make a most stubborn resistance, and if supplies of ammunition and food were sufficient might hold out for several months until reinforcements for them could arrive. In the meanwhile the harbor of San Luis D'Apra could not be used as a refuge for the enemy's ships. Should reinforcements for the defenders finally arrive, how much easier would be the recapture now <sup>than</sup> if there were no foothold on shore.

#### TRAINING OF PERSONNEL.

A brief outline of the course of instruction which should be pursued by the personnel of the Outfit follows. It has been fortunate for the Marine Corps that in the past decade it has participated in so many oversea expeditions, for the training thus received is the most valuable along certain lines that can possibly be obtained. It develops mobility and resourcefulness, promotes discipline, and gives experience to the officers as well as men, the lack of which is so apparent in troops which for the first time are confronted with the difficulties of an oversea expedition.

This, heretofore, more or less compulsory system of training, enlarged and systematized, should be adopted for the Personnel of

the Advance Base Outfit. The greatest efficiency can only be obtained by keeping the entire force intact and training them as a whole. Without this the higher ranking officers and their staffs receive none of the training and experience essential to them until called to command on active service, at which time they should be prepared and not just starting to prepare for the position.

When it is realized that an Advance Base Outfit includes in its organization the element of field and coast artillery, signal and mine companies, and infantry, all of which must be trained in each others duties and so as to coordinate with each other, the necessity for the above will not be questioned.

In general terms, officers should be trained to make the most valuable use of terrain, that is, to be capable of determining the most advantageous positions for guns, magazines, entrenchments, etc.; they should accustom themselves to the difficulties of transporting the heavier material to almost inaccessible positions, and in doing so develop easier and simpler methods than exist today.

This study must be developed both in theory and in practice, while at the home station of the Advance Base Outfit, and, at regular intervals, be supplemented by embarking on transports for some suitable locality there to land and prepare a base.

Thus the training for the outfit, like that of the fleet, would in times of peace simulate the conditions of war.



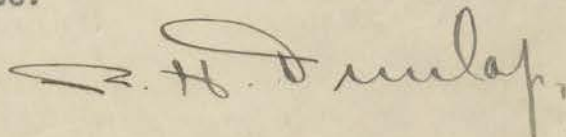
Colonel G. F. R. Henderson in his "Science of War" says: "That few Anglo-Saxons are not secretly convinced that with some knowledge of drill they would be most formidable rivals to the officers of the German General Staff. They believe that they possess the military virtues, that they are fearless, cool and resolute, and they flatter themselves that they are fitted with sufficient common sense to enable them to decide wisely and promptly in critical moments. They forget, however, that common sense to be a really useful guide to the judgement, must be trained common sense, fortified by knowledge and increased by practice.

In conclusion, it is thought that a brief resume of the more important points will aid in the understanding of this paper.

No one can question the necessity at times for an Advance Base; few believe that a hastily improvised force suddenly confronted with the task of holding such a base would be as efficient as one trained to the work, and no one doubts the necessity for making the Outfit as small as is compatible with the requirements of the work desired, in order to lighten the Fleet Train, therefore further comment on these points is unnecessary. However it may be well to recall to mind that sites selected for Advance Bases should fulfill certain requirements and that these requirements vary widely according to the size of the force available to defend the position. An Army might easily occupy and hold a position in which an outfit would be lost

and likewise a position suitable to the Outfit would be impossible for the Army.

Regarding the defence of a base it should be borne in mind that any attack to be successful must include combined attacks from both sea and land, and that the condition governing the occupation of a base; i.e., the existence of the Fleet nearby would prevent its subjugation by blockade. Therefore any attack to be apprehended will be in the nature of a raid, depending upon surprise, ~~and~~ the rapidity and energy of attack, for success. The defence determined upon must utilize to the greatest advantage all circumstances which would increase the power of the personnel and material of the outfit. Should the defence fail and the Fleet's Train be destroyed, the effect might easily be as far reaching as the destruction of the Fleet itself. Therefore the force which is to perform this important duty must be constantly preparing, and constantly simulating the conditions which will be encountered in active service.

 H. D. Mulap,