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## Battalion Landing Teams in Amphibious Operations

By Lieutenant Colonel Robert E. Cushman, Jr.

*Long before the opening fire on D-day, the battalion commander is faced with many problems which must be solved if subsequent operations are to succeed. The invasion itself causes these problems to become increasingly greater and more complex. Writing from experience, Lt. Colonel R. E. Cushman presents in practical form what the commander of a battalion landing team should know about amphibious operations. Some of his points are not necessarily indicative of standard practice, but they are generally workable, having been evolved from a study of field manuals, applied as principles in maneuvers, and given a final test in combat against the enemy and very rough terrain. The article is presented in three parts—Supplying an Amphibious Operation, Movement from Ship to Shore, and Supporting Fires—Artillery, Naval, Air.*

### SUPPLYING AN AMPHIBIOUS OPERATION

**S**UPPLYING an amphibious operation is difficult mainly because there is always a lack of transportation to support adequately an attack which moves quickly. As battalion commander, you must put one of your best officers in the supply job, and then keep a continuous personal check on every aspect of this important function of command.

#### Supply to the Beachhead

Since all supplies which support the attack must be transported overseas in ships, the logistical problem actually begins with the loading of the ship, which must be done to conform with the tactical scheme. The equipment and supplies which are to be taken must first be decided. This decision normally comes from higher headquarters, and, upon its receipt, the planning starts. Each unit which is a member of the landing team must prepare a Unit Personnel and Tonnage Table, supported by an inventory of each item to be taken. These tables are consolidated.

The next step is the preparation of the loading and stowage diagram based upon the commander's decision as to priorities of unloading and the consolidated table. With vehicles, this priority must be established for each vehicle. For other equipment, it can best be established by type, the usual order being, 1) organizational combat equipment, 2) ammunition, 3) water, 4) rations, 5) engineer and medical equipment, 6) fuel, 7)

other types. It must be noted, however, that ammunition and rations are usually loaded in separate holds, and take as long to unload as all the other equipment. Hence, rations must be so mixed, and ammunition must be so mixed, that at any given time during unloading all types of rations and all types of ammunition will have arrived at the beach in quantities of the proper proportion to furnish a balanced ration and ammunition for all weapons.

Vehicles require detailed preparation prior to loading. On each vehicle, reserve gas, oil, and water must be secured. The fan belt must be disconnected, and, once in the hold, the battery terminals removed and taped and the clutches tied down. If landmines are expected on the beach, sand bags on the floor boards may save the driver's life. A shelter half should be tied across the radiator, the exhaust pipe should be lengthened and bent upward, so that its opening is above anticipated water level, and the spark plugs and distributor should be coated with rubber cement. The combat loading of each cart, trailer, jeep, and truck must be specified and adhered to by the units.

The personnel who are to execute the loading must be carefully instructed prior to the event, and responsible leaders should be given plans of the hold they are to load. Men who must unload the ship should always have the same job while loading the ship. This means, of course, that the



The main link between supply boats and trucks is furnished by hand laborers.

shore party must be detailed before the ship loads. They should be detailed by name to specific jobs, and rehearsed. The ship platoon and the boat platoon should then be used for ship loading, so that they will be familiar with their tasks on D-day.

In direct charge of ship loading must be placed an officer with sufficient rank to deal with the ship's officers, and with sufficient experience to take charge of the men and planning involved. This is the battalion executive officer. Directly under him, as his assistant, should be placed an officer who, on D-day, will become the Ship Unloading Officer. Different officers are used, because on the day of the landing the battalion executive must bring the rear echelon of the command post ashore, and be prepared to take over the battalion in case of casualty to the commander. Furthermore, once the ship is loaded, there are practically no decisions that can be made regarding the unloading, as the gear has to come out the way it was put in. Any changes are dictated either by a failure of naval equipment or by an order from the beach.

From the foregoing, it will be seen that supply from the ship to the beach is a matter of careful planning, assignment of personnel, and rehearsal before the ship is loaded. After this has been done, the actual supply to the beach becomes a mechanical matter of physically lifting the equipment out of the hold into whatever types of boats are used and carrying it in to the shore party.

### Operation At the Beachhead

Smooth functioning at the beach depends largely upon the performance of the shore party, which must be organized according to Fleet directives and drilled and rehearsed thoroughly before ever boarding ship. A shore platoon of pioneers supervises the work, and a labor platoon executes it. Their mission is: 1) to remove supplies and equipment from boats bringing them from the

ship, then 2) to move these supplies and equipment into dispersed inland dumps. First priority is always unloading of boats; then the beach is cleared. In the ideal situation, both jobs are carried on simultaneously, but if any conflict arises the boats take precedence.

The major problem to be solved is presented in these terms: Boats are the fastest means of getting supplies from the ship to the beach or reef. Trucks are the fastest means of getting supplies from near the beach, and sometimes the reef edge, to the inland dumps. The link between the two is mainly hand labor, with the aid of some cherry picker cranes. Amphibious vehicles are limited by considerations of wear and tear, slow speed, and numbers available from making a complete ship to dump movement of all the supplies. What we seek is speed of supply from ship to dump.

At present a compromise has proven best: Use of boats from ship to reef or beach, use of cranes and hand labor at the boat unloading, and the use of amphibious vehicles and trucks from the boat unloading points to the dumps. This has the advantage of allowing boats, with their high speed and large cargo capacity, to constitute all the waterborne traffic, and of concentrating the greatest number of vehicles at the vulnerable point—the point where the boats are unloaded. The ideal solution would be to have the entire cargo aboard ship preloaded on 1) all vehicles carried in the ship, and 2) amphibious trailers. Boats would carry the vehicles to the beach, where they could proceed to the dumps. Amphibious trailers would be lowered into the water and picked up in tandem groups by DUKWS and Amphibious Tractors, which would have been carried by Landing Ship Tanks (LSTs) and launched in the vicinity of the Transport Area. Then, in two or three days, after the beach is clear of mortar and artillery fire, LSTs and Landing Craft Tanks (LCTs) can be brought directly to the beach with second echelon supplies. It is felt that on D-day, and the succeeding few days, they would present too large and immobile a target to ground on the beach. Other considerations influence the above solution. One is that landing on beaches with coral reefs is just about over at this stage of the war, and that amphibious vehicles may now revert to their more proper use as cargo carriers. Assault troops will then be carried in APAs exclusively as the fastest, safest way to get troops on a hostile beach; in Higgins boats launched from transports. LSTs can then be used to transport amphibious vehicles and cargo rather than amphibtracs and assault troops.

And now a word or two about inland dumps: They should be selected and manned by Bn-4 and his section. Dumps for the various classes of



A compromise has proved best: Use of boats from ship to beach; use of cranes and hand labor at boat unloading; use of amphibians and trucks to the dumps.

supply should be under cover, behind the unloading point and beach exit for that particular type of supply as selected by the shore party commander, and should be several hundred yards inland, with a good turn around for trucks. These dumps perform a double function, that of dispersing supplies inland from the beach, where they are less vulnerable to air attack, and that of functioning as battalion dumps for supply of the front lines. This is a point often misunderstood by shore party commanders, Bn-4s and others who talk about responsibility "from the high water mark," and so on. This talk obscures the fundamental issue, which is that the commander is wholly responsible for the supply of his troops; hence, when a battalion landing team lands on a beach and presses forward to the first phase line, the entire area from the phase line to the water constitutes the battalion beachhead, and all troops working therein come under the battalion commander and are laboring to a common end. The placing of supplies in the dumps within that beachhead is the task of his shore party. Their segregation and movement forward to the troops is the task of Bn-4.

Now, perhaps late in the day, or the next day, battalions will have gained contact and moved forward to a regimental objective, and the beachhead will become greatly enlarged. At this point, when regimental agencies and transportation can safely and efficiently be placed in this larger area, R-4 may well take over the inland dumps. At this point, they become regimental, battalion, and

inland dumps. Notice, however, that operation remains almost the same. There are a few additional checkers and segregators to help, and, of course, some of the supplies from the Reserve Battalion may be unloaded over what was your beach. At the same time, regiment will combine the shore parties into a regimental shore party encompassing all the beaches that regiment landed upon. In effect, the regimental commander is saying: "We are well enough established ashore now so that I can take over my command function of supplying the regiment." At that moment, the responsibility of the battalion commander for the ship to dump movement of supplies ceases. He is then only concerned with the third phase of supply—from the dumps to his troops.

### Combat Supply From the Beach Inland

The principles which should be followed are clearly outlined in FM 100-10 and in Marine Corps Schools. However, certain modifications are necessary, because supply depends upon transport, which, in turn, is affected by the terrain, the road net and the number of vehicles brought along for the assault.

First, it was found that where no road net existed, and swamp and jungle had to be traversed, amphibious tractors and Athey trailers pulled by caterpillar tractors were the only answer to getting supplies within reach of the troops; that is, to a point where carrying parties could get them to the front lines. This is an exhausting method of supply, and greatly curtails the

speed of advance in the attack. Under such conditions, roads must be pushed through with all possible speed.

Second, although Operations Orders always prescribed battalion dumps and levels to be kept therein, it is my experience that a battalion dump is neither possible nor necessary while in the attack. There are several reasons for this: 1) Troops cannot efficiently carry enough high ex-

plosive on their backs to adequately supply mortars, bazookas, demolition teams, and grenadiers; hence the three jeeps allowed to an assault battalion by present loading plans must be used (as indeed they were furnished to be used) for quick follow up ammunition carriers close behind the assault. 2) With all battalion transportation being used in this manner, regimental transportation must bring the supplies within reach of the

## CHECK LIST OF ANNEXES

- Intelligence annex—
  - Does it contain all enemy information?
  - Does it contain *your* essential elements of enemy information (not simply copied from the regimental order but the things you personally want your company commanders to tell you)?
  - Does it have appended a clear overlay showing all known enemy installations?
- Operation overlay—
  - Does it show clearly the boundaries, objectives, and scheme of maneuver of your own and adjacent units?
- Boat assignment table—
  - Does it include boat spaces for every man and his equipment?
  - Does it provide for the second trip of the boats?
- Debarkation schedule—
  - Does it tell every man where to go to get into his boat?
  - Does it include an alternate plan in case of rough weather when only the lee side of the ship may be used?
  - Does it include complete instructions for davit loading?
- Signal annex—
  - Does it include all special signals for controlling boat movements?
  - Any special distribution of signal equipment for the boat ride in?
  - Special signals and pyrotechnics for communicating with tanks, aircraft, supporting naval vessels and higher command echelons?
  - Does it include the air raid warning system?
- Chemical annex—
  - Does it include definite missions for decontamination squads and equipment which such squads will carry by hand as distinct from that in the battalion dump?
  - Does it definitely state upon whose authority individual protective equipment may be dropped by the individual and placed in dumps?
- Shore party annex—
  - Does it include a complete roster of all working parties showing where each man is to work, and who will be in charge of him?
  - Does it include an overlay showing dump sites, shore party CP, beach exits and turn arounds?
  - Does it contain instructions to the shore party in case of air raids?
  - Does it include orders for the defense of the beach with a definite commander for such beach defenses?
- Administrative order—
  - Check it carefully against the Staff Officers' Field Manual for completeness.
- Additional points to be noted—
  - Have you put out complete instructions on the use of the password?
  - Have definite instructions on the use of smoke been included?
  - If you are on a flank, have definite orders been given for the protection of that flank of the beachhead?

using troops, which means within reach of carrying parties, since the battalion has no trucks. 3) Troops can carry two days' rations and one day's water, but they can fight a lot better if the load is lightened to one day's rations. This means daily supply of water and rations, and, of course, expended ammunition. 4) In a fast moving attack, a battalion dump would have to be displaced forward at least every three days. It must be moved whenever the time and effort of moving become less than the time and effort of using it as a distributing point. With hand-carry, this means the dump must be kept within a thousand yards of the troops, while with jeeps five miles is about the limit.

Of course, it must be realized that this discussion concerns supplies and not equipment, which is generally left in regimental or battalion rear dump until needed and called for. Neither does it apply to the defense when levels are built up both on position and in dumps.

Under the conditions outlined above, it is found necessary to gather all the battalion supply sections together under R-4 into a regimental train, which then supplies the battalions by the unit distribution method rather than the dump method. A regimental train has the advantage of pooled

and efficient use of the slim transportation available, and can also set up kitchens and cook doughnuts and coffee, if not full meals. However, if the regiment has to move rapidly over an extended period, and tries to displace a dump with even low levels, so much time will be spent moving the dump that no supplies will reach the troops, since the regiment has all the transportation tied up. Only an R-4 of excellent caliber can alleviate or handle the situation. It should be done by leaving the dump in position, and moving the train direct between division distributing points and battalions.

In conclusion on this subject, I would say that, from a battalion point of view, the use of a well-run regimental train is the best. Paragraph 197, of the Field Manual, states: "Normally, supplies are not transferred from truck to truck or placed in dumps from the time they are received from the army (corresponds to our division beachhead) supply points until they are delivered to using troops." To apply this principle, a regimental train is the answer, but, if it is not run by an alert, aggressive R-4, then it is best to release a proportionate share of the transportation to the battalion and let Bn-4 try it.

## MOVEMENT FROM SHIP TO SHORE

Assault landings, as well as battles, are won long weary months before the enemy is engaged. Victory comes from tough, strenuous training under close supervision of the battalion commander. As the great day approaches, victory is insured by the painstaking preparation of orders which enable every private to know exactly as much concerning the landing as does the commanding officer. Nothing requires so much attention to detail, such meticulous planning, as an assault against hostile shores, and the landing team commander may well consider that each and every overlooked detail is going to cost some Marine his life.

### Preparation of Orders

Of primary importance in the assault of a hostile shore is the timely issuance of complete and clear orders. This is one time when the mimeograph is invaluable. Actually, these orders may be compared to a textbook, and one which every private in the landing team must be taught thoroughly if an efficient, successful landing is to be made.

The operation order must be clear and rather more detailed than the usual attack order. Missions must be very clear, concise, and detailed. It is the annexes, however, which supply the bulk of the explanatory details. A check list covering these annexes is presented with this article, and

should be studied carefully. None of the points covered are suitable for inclusion in SOP, for they change with each operation. They must, therefore, be carefully reviewed to make certain they are included in the orders.

### Individual Equipment

Items of individual equipment should be made the subject of memoranda prior to embarkation, and of inspections while aboard, to insure compliance.

Decisions must be made by the battalion commander, with the advice and recommendations of his unit leaders, as to the exact amount and type of ammunition to be carried by each man. The following may be used as a check list: Ball and tracer small arms; mortar ammunition by hand, by cart, by jeep and trailer; pyrotechnics (smoke grenades of various colors and signal projector ammunition); TNT and bangalore torpedoes; grenades, to include fragmentation, white smoke, incendiary, AT, and antipersonnel with discharger,, as well as adapters for hand grenades if used.

Definite operators, assistants, boat spaces and ammunition resupply must be designated for all special weapons, such as flame throwers, bazookas, mines and pole charges.

Decontamination squads must be practised in

their duties, and their equipment and supplies must be enumerated for quick decontamination of an area or of a weapon. Sanitation squads must have the proper equipment for the sanitation of enemy dead.

Many signs are prescribed for a landing—boat signs, assault platoon signs to leave on the beach, signs to mark the end of the telephone wire dropped on the beach, signs with the code designation of the CP, beach marking signs to show the flanks and the unloading points for various types of equipment. Be sure you make or draw the flags, and have specific individuals detailed to carry, plant, and display these various signals.

Flame throwers, bazookas, and radios are subject to immediate ruin from salt spray. Make certain that extra gas capes have been drawn to waterproof these items during the boat ride. Two gas capes per item have been found effective. Vehicles should be waterproofed as described in the first part of this article.

Check with your companies to see that each item of equipment which must be lowered into a boat has a complete lowering line. Try to get the ship to provide a large canvas bag at each debarkation net to facilitate the lowering of machinegun ammunition chests and other small items. Make certain that each vehicle has the proper type of sling and spreader for ship loading and unloading. These may be supplied by the Marine Corps or the Navy.

The contents of the pack must be specified, as well as the arrangements for unloading the bottom half of the pack on D-day. The best solution is "fire group sea bags." Draw a sea bag for each four men and place their knapsacks and rolls inside. Each knapsack should be lined with a rubber jungle pack liner. This sea bag is then suitably marked, stowed in a central unloading area on the ship just before D-day, and placed

in the battalion dump after unloading on the beach until such time as the troops can use them. The top half of the pack is worn ashore.

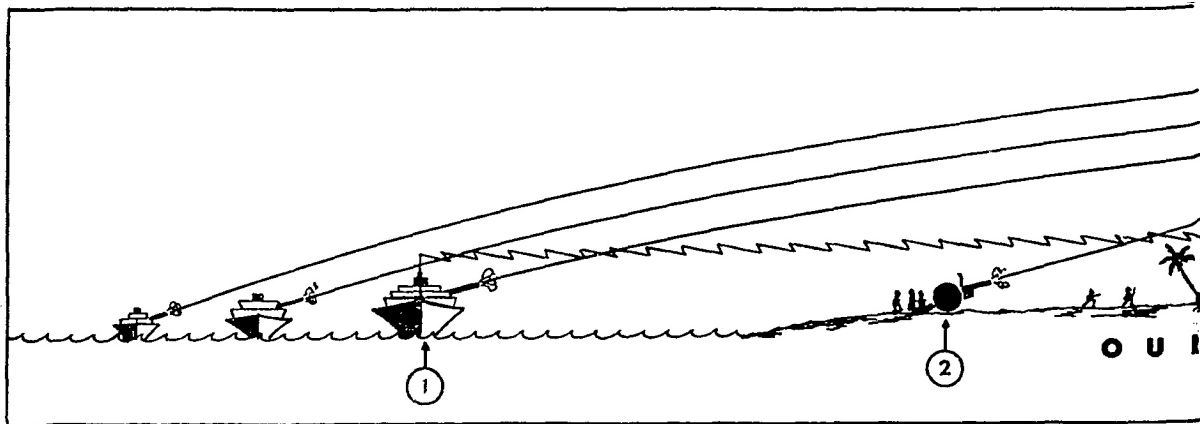
When you have taken care of all these details, you can truthfully say that your men are ready to go ashore as far as uniform and equipment are concerned.

### Organizational Equipment

I have covered earlier in this article most of the points of ship loading as they affect a battalion commander. Let it suffice here to make a final check of your loading plans, first, to see that what you want first on the beach will get there first, particularly as to vehicles for the shore party, for evacuation, and for air liaison; and, secondly, to see that your ammunition and rations are so loaded that at any point in the unloading you will find representative items of each of these two classes of supply on the beach.

Do not forget while loading that you must set aside several things so that you can get at them while still aboard. For instance, rations to be consumed during rehearsal and rations to be issued to take ashore on D-day; ammunition which cannot be kept in the troop compartments, but must be used in training or on D-day, such as pyrotechnics and high explosives; gasoline to refuel the vehicles used on the rehearsal; gas masks which deteriorate rapidly in the hands of the troops but must be carried ashore; certain heavy equipment, such as artillery, beach marking signs, decontamination equipment, and certain CP equipment, which can be manhandled on land but cannot be lowered into the boats by hand.

Don't forget that in loading you must have unloading details on the ship performing the same tasks that they will have when they unload for keeps, and that careful planning is necessary to get all the units' gear to the beach and dock and



1: Ships to fire minimum of 500 yds. ahead of troops. 2: Artillery to fire minimum of 100 yds. ahead of troops. 3: Mortars to fire up to 50 yds. ahead of troops.

segregated properly as to class and ship's hold. Signs, guides, and joint conferences are necessary to insure success.

### Embarkation

It would seem that embarkation has little to do with ship to shore movement, but such is not the case. A careful billeting plan must be made, bearing in mind that those who go over the side first must live closest to the topside, and that those who go over the side forward must live forward. In other words, billeting must be done so as to dovetail with the boat assignment table and the debarkation schedule.

Training orders should be promulgated to provide for physical training for the troops while aboard ship, lectures on every phase of the operation, and inspections. You will, of course, already have rehearsed everything possible on dry land, and, after your "dress rehearsal" from the ship, will have adjusted your orders to take care of any changes found necessary.

And, finally, just to make life smoother and easier prior to embarkation, all police, mess, and guard details, with appropriate officers in charge, should be detailed by name.

## SUPPORTING FIRES—ARTILLERY, NAVAL, AIR

Mortar fire, artillery fire, and naval gunfire can be delivered simultaneously within a very few minutes in close support of a battalion using each type of fire against the targets for which it is best suited, and at the most suitable ranges in front of the troops.

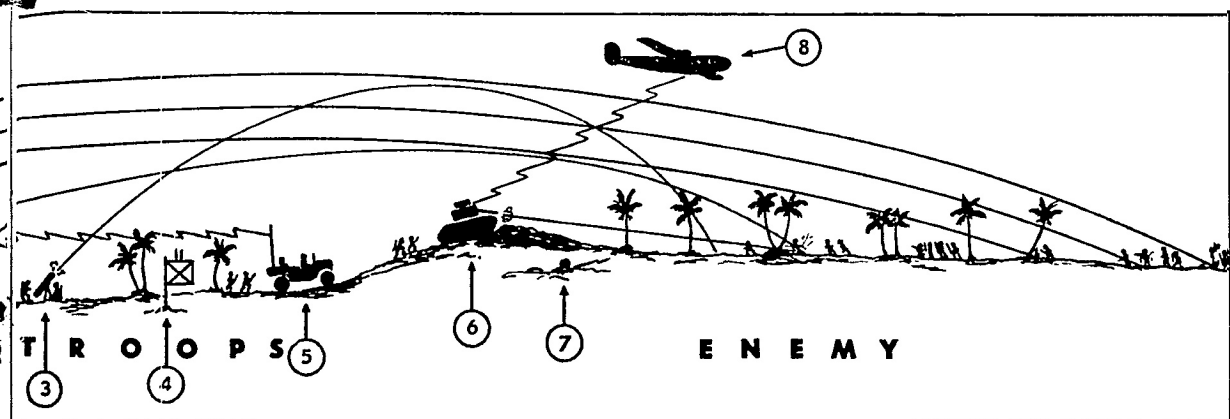
### Artillery

Artillery is still the primary and most effective close support weapon for the infantry, and the coordination of the two arms has been so well worked out that I will only touch on it lightly here. Our present methods of employment are believed sound—the massing of fires under the control of forward observers in the front lines of the infantry. However, a few points of the technique will not be amiss.

In ship to shore operations, the first vital step is the establishing of communications so that fire may be promptly delivered when the battery is set up. A forward observer team consisting of officer, radio, and wire team should be boated with the company commander of each assault rifle

company. If amphibious tractors are used, there may not be sufficient room. In this case, the F. O. team may be placed in a tractor which comes in immediately behind the rifle company commander's tractor, such as one which brings in his light mortars. The artillery liaison officer should be with the battalion commander, if in a boat, or with the battalion executive in the rear echelon of the CP if in tractors. These artillery personnel, immediately upon landing, establish radio and wire communication with their battery. If possible, they establish a wire net entirely their own; if not, they use portions of the battalion wire net. Should the battery land on some distant beach, as is often the case, the artillery battalion or regiment should set up a forward switching central which may be used by the F. O.'s to tie into with their wire. If things are done properly, the battery will be able to fire in your support within a few hours, and the battalion a short time after that.

And now you wish to use this powerful weapon to support an offensive. Do not forget two con-



4: Naval gunfire liaison and CP. 5: TCS jeep radio with TBX standby. 6: Tanks.  
7: Forward artillery, naval gunfire observers. 8: Plane radios enemy positions to tanks.

siderations: First, coordinate your artillery fires carefully with those of your mortars, using the latter to strike defiladed targets and targets within fifty yards of your own troops. There will be plenty of targets out beyond one hundred yards from your own troops for the artillery. Second, request that the artillery fire be broken in the middle for several minutes. Otherwise, you are liable to find that the Japs open up with mortars and artillery of their own just as your troops cross the line of departure, whereas, if you habitually use pauses in your fire, they will never know when the barrage is over.

A technique which we fumbled, and which should be improved, is the use of the spotting plane during a fast moving attack. During this type of attack, characterized by battalion columns spearheaded by tanks, it is impossible to keep up with wire, and the SCR 300s of the F. O.'s soon get out of range of the artillery battery. A spotting plane then becomes invaluable—if communications can be established. However, it is the regimental artillery liaison officer who is in touch with the plane, and he is too far behind the head of the column to know the situation. Often it is impossible to get in communication with him because of the same difficulties which precluded getting in touch directly with the artillery batteries. It is, therefore, recommended that radio communication be set up between the tanks and the spotting plane, using the organic tank radio if possible. This set-up would have real value not only as a fire control net but as an intelligence agency of first importance.

And just one final point before we leave artillery fires—don't forget to register your defensive concentrations before dark.

### Naval Gunfire

Naval gunfire is characterized by flat trajectory and very small deflection error. As a close support weapon it, therefore, lends itself to enfilade fire to within five hundred yards of the front lines, perhaps closer in emergency. Its great value to the battalion commander lies in the fact that it is waterborne, and can be used during that critical period during the landing before the artillery is emplaced and ready to fire. I would never regard it as other than an emergency substitute for artillery because of the limitation just stated. From a regimental and division standpoint, however, it is valuable for taking over some of the burden of deep supporting fires from the shoulders of the 105s and 155s as the campaign progresses. I found the main use for it to be the bombardment of ravines open to the sea, but defiladed from artillery fire and too far away from mortar fire.

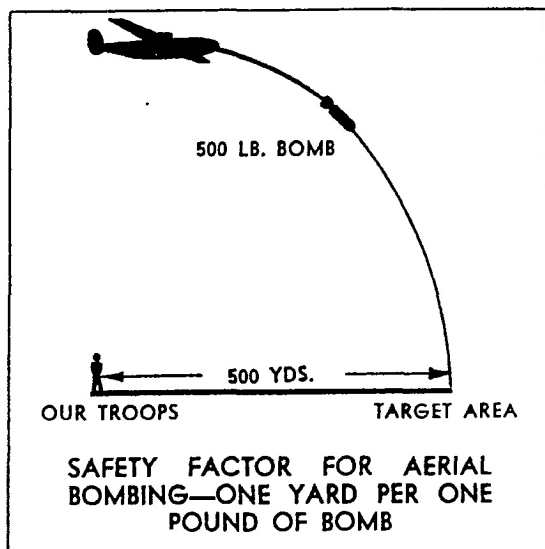
Control of naval gunfire is relatively simple, and depends entirely upon the radio used to reach the ship. A TCS jeep radio is used with a TBX

as a standby. A wire is run from the defiladed position of the jeep up to the spotting position at the OP. The spotting officer is at the OP and the liaison officer remains at the jeep relaying spots. The first round is usually smoke—and is usually way off. As soon as spotted on, however, naval gunfire is remarkably accurate. It is a great help if the liaison officer can do some temporary duty aboard the destroyer whose fire he will control in battle, and, of course, the entire naval gunfire party should go on as many "shoots" as possible with the ship it will later fire in combat.

The main point to be remembered in connection with naval gunfire is that you must use it to bridge the gap between landing and setting up of the artillery. This requires careful planning; the naval gunfire liaison party should be with the battalion commander in his boat or tractor with the TBX, and the TCS jeep should come in with the highest priority, so that it may be used immediately. Just as soon as the CP is occupied, you should set up and test communications with the firing ship; then you are ready to support your attack as required.

Two supplementary uses of naval gunfire which should not be overlooked are smoke and night illumination. The latter should only be used if you can control it. If some other ship than your own uses it, a ship you are not in communication with, you will find that it merely illuminates your own lines for the benefit of the enemy. Careful control and spotting are necessary. In fact, 60-mm. mortar illumination is generally better. In some isolated instances, searchlight illumination is useful, but it must never be used if the enemy still has batteries that can bear on the illuminating ship.

Rocket gunboats are often useful along the





shore in close support. It should be noted that when using them front lines must be marked and the target area should be designated by mortar smoke for safety's sake. Fire is controlled by radio, which must be arranged beforehand and is usually 'TBX'.

In conclusion, it may be stated that naval gunfire is an extremely useful tool in the hands of the battalion commander during the initial stages of the landing, but that it grows less useful to the battalion and more useful to the division as the campaign progresses. With proper communications, it can usually be called down as quickly as artillery, but cannot cover as many targets in a given area as can the artillery.

### Close Air Support

The technique of close air support is not difficult and becomes quite easy with practice. I always made it a practice never to have a battalion problem without air support. A TCS jeep radio in defilade and connected by phone to a spotter is used to request air support and to control it. The support air commander okays the request and turns it over to the air coordinator for execution. The air liaison party gives him the target designation and arranges to have the front lines marked by smoke or panel. The target may be marked by mortar smoke. The planes bomb the target, and any corrections necessary are made over the radio to the air coordinator or to the planes direct if they have been released to the air liaison party by the air coordinator. A safety factor on one yard per pound of bomb is used; that is, a 500-pound bomb should land no closer to own troops than 500 yards, and so on. Such is the technique of a battalion using close air support, and it is not difficult. But, getting the proper bomb on the target at the proper time and without killing any of your own men is something else again, as we shall see.

At the risk of being called a reactionary dodo, I am here going to state that I don't consider aircraft a suitable close support weapon for a battalion. I don't believe that anyone below a division should have anything to do with supporting aviation. And it is not because I haven't tried, for I have used air support within seventy-five yards of my own troops successfully. Experience leads me to believe that the pendulum has swung too far, and that we are attempting to use aviation for something beyond its capabilities. The greatest help that aviation can be to a battalion is to first knock out the enemy air. It can then knock out such targets as enemy tank and troop concentrations, bridges, supply installations, and the like, all of which are a considerable distance in the enemy's rear and are the proper concern of division or higher headquarters. A battalion should have nothing to do with all of this—it would

simply benefit immensely from such activity but would not control it.

The reasons for my conclusion are several. First, in an amphibious operation, the support air commander is waterborne, the air coordinator is airborne, while the targets are on the ground. This means a monumental difficulty in target designation. Second, when a battalion attacks, it has limited objectives, five hundred to a thousand yards apart. Speed of attack is essential. Yet, when the battalion is held up, to call for air support and get the planes started dropping bombs may take up to two hours. Artillery would do the job in ten minutes. Sometimes you can get air support in ten minutes, but not always, and you can't wait to see. This might be one of those times it takes two hours. Third, in a matter of minutes, you can spot artillery and mortar fire on the type of small, obscure target which holds up infantry nine times out of ten—targets which are difficult to see from the ground and impossible from the air, such as caves, machinegun nests, and so on. On the other hand, spotting the dropping of bombs from aircraft is difficult, because they are inaccurate and because all air coordinators have an extreme reluctance to turn over control of the planes to the air liaison party down on the ground. Fourth, bombs and rockets do not destroy the target, and have relatively little effect on the pinpoint type target which holds up the advances of foot troops, unless a direct hit is obtained. Fifth, the infantry is usually right on top of these targets when they get held up, and bombing is too inaccurate to employ against a target which often has infantry on three sides of it. This means you have to withdraw, a process extremely distasteful to me and often costly. Sixth, the great majority of aviators have gone direct from college to aviation cadet training at Pensacola, then to active duty as aviators. Consequently, they know absolutely nothing of ground warfare or of the infantry's problem. As a matter of fact, most of them dislike intensely being assigned to support ground troops. Seventh, close air support is extremely dangerous to friendly troops. A front line is never a straight line; it has salients and reentracts all along its length, depending on the progress of the fighting at different points.

Now, bombing is accurate in deflection but *extremely* inaccurate in range; that is, along the line of flight. Therefore, bombing is usually carried out parallel to your front lines. However, when a battalion calls for air support, it gets its own front lines marked but not those of the next one, two, or even three battalions over. And, believe me, those are the people who get hurt, the troops some six hundred yards away who don't even know there is an air support mission going on over in that next regiment until

they get blasted out of the nice salient they just punched into the Japs an hour before.

Let me emphasize that I have only praise for aviation in general, and for the multitude of really important tasks it performs. What I take issue with is the new idea of handing a battalion a squadron of planes and assuming its problems are over—it can now take any objective. It has even become the practice of the higher command echelons to call up battalion commanders and tell them they aren't using their air support enough, to start sending in missions. I claim that the battalion cannot even see proper objectives for aviation, because they are too far beyond the immediate battleground where the battalion is fighting it out with the Japs at that moment.

I believe that close support aviation should be handled by division. It should be employed against targets it can best cope with because of its mo-

bility, range, and ability to see far behind the enemy's lines. The division can best assess the importance of such targets in the scheme of things, and can balance their importance against the limited bomb load and air alert period of aircraft.

For safety's sake, a division bomb release line should never be established closer to own troops than 1,500 yards, beyond which all bombs must be dropped. Artillery and mortars can be used against all targets within that line. An exception may be made to these rules when aviation is used as preparatory fire for a general attack carried out on a time schedule. In this case, it may often be advantageous to use bombers to thicken the artillery preparatory fires against certain key targets. Lines may be marked, times set, bombers controlled by front line liaison parties, and all arrangements made by orders the night before.

## Training Sea-Going Marines

Aboard every capital ship, cruiser, carrier, or large transport in our Navy can be found a detachment of Marines, each of whom has volunteered, worked, and trained for the privilege of becoming a "Sea-Going Marine." These men, who serve aboard ship as gun crews on antiaircraft weapons, as orderlies for the ship's captain or other high ranking Naval officers, and as security guards while at sea or in port, are Marines carefully chosen from applicants who volunteer for this duty from every branch of the Corps. Those accepted are picked according to their intelligence, ability, physical appearance, physical stamina, and aptitude.

Volunteers accepted for sea duty attend the Sea School at the San Diego Marine Corps Base for five weeks of intensive training, which actually is comparable to six months duty aboard ship. The schedule of training at this school is one that has been evolved through years of experience and is constantly being improved as new subjects are added to keep abreast of current changes or as new conceptions of old established principles are developed. Instructors who have had combat experience and sea duty train new men in preparation for their new duties so that they may be qualified to wear the proud shoulder patch of the sea-going Marine—the distinctive golden sea dragon.

At the first week of Sea School, the volunteer takes courses pointed toward a grasp of his new duties at sea. This week ends with a thorough examination and the second week includes the

addition of other courses, such as Orderly Duty, True and Relative Bearing, Antiaircraft and Surface Lookouts. An examination ends the second week and the course is intensified as the student's ability to grasp intricate details and training aids increases. Most of the third week of training is taken up with instructions in gunnery to prepare the student for actual firing later of the various weapons studied. Each student receives a thorough and complete working knowledge of the duties of a gun crew; instructions on 5.38 caliber loading machine; 5.38 caliber antiaircraft gun; 40-mm loading machine; 40-mm antiaircraft single mount gun; and the 20-mm gun and mount. In addition, training is given on the Panoramic Gunnery Trainer, Mark 2; Browning Automatic Rifle; .45 caliber automatic pistol; and the Mark 14 gun sight.

The entire fourth week of training is devoted to further gunnery study and to actual firing at the Naval Antiaircraft Training Center, Pacific Beach. The fifth and final week of training consists of advanced work in the theory and technique of gunnery concerning the weapons previously studied and fired, together with a two-day course at the Navy Fire Fighting School at San Diego.

With this five weeks training behind them, the students are available for transfer to Sea Duty and usually are dispatched to a port of embarkation to await assignment to some ship of the fleet.—CAPTAIN JOSEPH F. LA BONTE, Commanding Officer, Sea School, Marine Corps Base, San Diego.