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NOTES ON THE SICILIAN CAMPAIGN,
7TH ARMY
SEPT. 1943

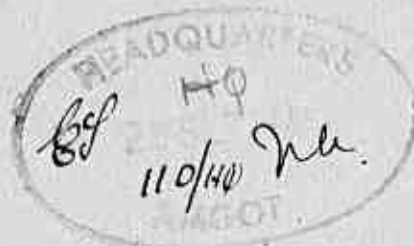
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HEADQUARTERS SEVENTH ARMY
APO 758
US ARMY



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S I C I L I A N C A M P A I G N

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HEADQUARTERS SEVENTH ARMY
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NOTES ON SICILIAN CAMPAIGNPART I - AMBIBIOUS OPERATIONSSECTION A: INITIAL PLANS AND PREPARATIONS1. General

From the standpoint of the ground troops, it is vital that before planning starts a definite agreement be secured from the Navy as to the number and type of ships available, and the depth of loading permissible in the smaller craft.

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2. The Selection of Objectives

The general area to be attacked is selected by the High Command. It then becomes the duty of the Force Commander, in conjunction with the Navy and with the Air Force, to determine the precise localities where the various landings will be attempted. The interest of the Navy in this is a determination of the beaches which, from a naval standpoint, are available. The interest of the Air is largely where and to what extent fighter cover can be provided. Time and argument will be saved if the Navy, Army, and Air planning staff, with their respective commanders, make this decision immediately after the amount and type of lift is determined. The reason that the lift must be determined first is that on the lift depends the amount of troops available, and on the amount of troops available depends the number of landings which may be attempted.

3. Extra Personnel

The Navy and Air Force through their senior officers must state their requirements for men and equipment. Since these requirements will invariably be excessive, the Ground Force Commander, the Navy, and the Air must thrash the matter out under the presidency of the senior officer from the office of the Commander-in-Chief who can make the final decision. Not only must this final decision state the number of men and amount of equipment but it must also specify in which convoy they will be carried. After these decisions have been reached, nothing except emergency action should in any way reduce the list of vessels or change the order of loading.

4. Combat Loaders

When combat loaders are used at night, it is most desirable that they have sufficient landing craft carried in davits to lift a complete assault unit without having to call on other ships to supply small craft.

SECRET5. Air Support

Another point which should be settled at the commencement of the planning is whether or not air support will be supplied during the landing and subsequent to the landing, and the nature of support in each case. If close air support is to be supplied, an effort must be made to utilize directional smoke. This directional smoke, produced either by shells or hand grenades, comes in three colors and is analogous to recognition lights.

For instance: On D Day, from zero to 2400 hours, yellow smoke means friendly troops; red smoke means enemy. Where the front line is uncertain, or if friendly air attacks our own troops through error, yellow smoke is put out by the use of hand grenades. When the front line is marked by yellow smoke, anything beyond it in the direction of the enemy may be attacked by close support airplanes. If, on the other hand, some particularly obnoxious enemy installation is beyond the power of the ground troops, e.g., a reverse slope position, and is in artillery range, it will be outlined in red smoke. From zero to 2400 D plus 1, red smoke will indicate friendly troops; blue smoke enemy, etc.

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It is felt that could our airplanes utilize some method of showing a recognition signal of the same color as that which has been designated for friendly troops on that day, it would reduce accidental firing at them.

6. Naval Gunfire Support.

Whether or not Navy gunfire support is to be used prior to H hour, must be definitely determined for the entire force. It is my personal opinion that Navy gunfire support should not be used sooner than H minus 1 hour and then only against enemy units which are firing, or against searchlights. In the daytime, Navy gunfire support is of immeasurable value, and the means now developed by the Navy for putting it on are extremely efficient.

7. Troop Lists

In making up the troop list for the assault convoy, it must always be remembered that while men and equipment to operate harbors, or beaches, or graves registration, or hospitals, or to restore and maintain airfields are necessary, they are utterly valueless until the fighting infantry, supported by artillery and tanks, has captured a beachhead.

From my experience I know that units not engaged in the initial fight at the beaches are always super-optimistic as to how long it takes to secure a beachhead. Non-killers must be held to an irreducible minimum in early echelons.

A great saving in non-fighting men and heavy equipment can be effected by providing hospital ships. The presence of these ships removes the initial necessity for hospitalization and provides much better care for

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the wounded men. However, steps must be taken to see that the Navy provides a list of wounded taken on board and turns this over to the Army prior to sailing, otherwise, men will be reported missing who are actually on the hospital ship or transports.

8. Safe-arrival cards

Safe-arrival cards should be mailed for all members of an expedition the day it disembarks and then exceptions mailed later. This saves time and alleviates much heart burning at home.

9. Feeding Prisoners

Arrangements must be made with the Navy for a definite responsibility for the feeding and guarding of prisoners of war. If this guarding cannot be done by the Navy, additional MP Battalions must be provided. However, to put such men in the assault convoy reduces the assault personnel. Food for prisoners of war while on board ships should be provided by the Navy. 1276

10. Command Ships

A combined Army, Navy, and Air Force command ship is necessary not only for the Task Force Commander but for the Sub-Task Force Commanders and even as far down as the Regimental Combat Team Commanders. The complexity of the installations diminishes with the size of the unit involved.

Command ships should be specially constructed and not improvised at the last moment. They should in no case be naval fighting ships since involvement in a fire fight results in immediate disruption of all radio communication channels.

A suitable office must be provided for each of the following: The Commanding General, Chief of Staff, G-3, G-2, and Air Support.

Each command ship should have three separate code rooms: One for the Army, one for the Navy, and one for the Air Force code sections. Each of these code rooms must be large enough to permit of efficient operation of British and American Code Teams. The message center room should be convenient to the code rooms, and of sufficient size to accommodate the three message center installations, namely, Army, Navy, and Air Corps. All three services, however, may use a common radio operation room.

In the two operations in which I have participated we lacked an adequate number of radio channels. It is desirable that a special channel be provided aboard the principal command ship, and later ashore, to handle press dispatches. The use of command channels for the transmission of press material is impractical, since such use causes interruptions in tactical traffic. It may however be necessary to modify Naval policy to permit of individual transmission of press reports.

The Task Force Commander's headquarters ship should be

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accompanied by alternate command ship carrying sufficient radio equipment to take over the channels if the principal headquarters ship is lost. Where possible all command ships should have alternates particularly when the unit in question equals or exceeds the size of a division.

11. Speedboats

There should be--and this need is vital--at least two speedboats solely for Army use which should lie close to the command ship. There are innumerable occasions when the possession of such speedboats to take messages would facilitate matters because, up to a distance of fifteen to twenty miles, a staff officer in a speedboat can deliver and receive messages far faster than they can be coded, sent, and decoded. When the headquarters goes ashore speedboats should still be available till land communication is assured.

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12. Amphibious Radios

It is essential that high powered radio channels be established ashore at the earliest possible moment. This was effectively accomplished by installing water-proofed sets, SCR-299, in 2½-ton amphibious trucks. Two such units should be provided for each Army, Corps, and Division Headquarters and loaded in such manner as to permit of unloading over the ramps of landing vessels while still some distance off shore.

13. Amphibious Training

Too much time is devoted to teaching soldiers to debark from large craft into small craft. This is a very simple operation and can be very readily accomplished. A great deal of time should be put on teaching soldiers to get out of small craft on the run and keep running across the beach.

More emphasis must be placed by the Navy on training coxswains to handle boats and to find the proper beaches. Also more training is necessary in the arrival at and the manipulation of vessels in the transport area.

14. Battle Practice

Some of the battle practice to which our troops have been subjected is more sensational than battle and as a consequence gives a false idea of the violence of war, with the result that some troops are unduly perturbed. It is certainly necessary that troops be fired over at very close heights by their own supporting weapons. They should also be habituated to following closely on artillery preparations, both percussion and air bursts. In doing so, they should have targets at which they fire so as to habituate them to fire while moving and to using their own arms in addition to the fire protection provided by the supporting arms. On the other hand, firing towards our troops close over their heads and bursting unduly large number of small mines amongst them as they move forward under circumstances which almost invariably inhibit their firing,

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have a bad effect. Troops must always fight back, not just take it.

15. Physical Condition

Too much emphasis cannot be placed on the physical condition of officers and men. Only by being extremely inured to terrific hardships can they produce successful results under the conditions of actual war.

16. Equipment

The equipment of troops engaged in landing operations must be reduced to the minimum. For the infantry rifleman, who has the hardest job, a hundred rounds of ammunition, one canteen, one or two grenades, and probably the light type of gas mask are sufficient. Supporting troops should, in addition to the grenades, or as an alternative to them, depending on the circumstances, carry one light trench mortar projectile a piece. 1274

For landing operations the use of A or B bags for the initial assault is expensive and valueless. All they need in the way of extra equipment is a toilet set, including shaving equipment, towel, and soap.

As soon as the beaches are taken over by the army, additional clothing and equipment in appropriate sizes must be immediately made available for issue. In the Sicilian Campaign we carried in the assault convoy, but in a late priority to land, waterproof bags containing full field equipment, including pistol and pistol belts for 5 per cent of the assault infantry. The contents of these bags are for the purpose of immediately replacing equipment lost or destroyed during the landing. Experience indicates that the ratio could be reduced to 2½ per cent of the assault infantry.

17. Gadgets

In planning landing operations, there is an invariable tendency to put too many gadgets in the small boats and consequently to overcrowd them. The only accessories necessary are the following: One grapnel projectile for 61-mm mortars in the ratio of one per assault company. In the same ratio there should be a two section bangalore torpedo raised on skids to a height of four feet. These are used for opening lines through minefields. Every assault platoon should have two pairs of bolt cutters. One wire mat per small landing boat is useful for crossing entanglements and does not take up too much room. The above applies to assault waves only.

18. Antiaircraft Fire

The ground troops and the Navy, particularly in the case of Navy small boats and non-AA ground troops, must be trained never to fire on airplanes unless they are attacked or the planes are so close that there is not any possible doubt as to their nationality. If this is not done, we simply deprive ourselves of air support by shooting our own planes, or demand of our own aviators very high courage, which, to their

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credit, I have often seen them display in flying through our own AA fire. Our Air Force must be equally well trained not to attack friendly troops or craft.

19. Beach Parties

Combined Army and Navy beach parties are of great potential value but very seldom produce the results they should. This is due to the lack of force of character in the men of the Army and Navy commanding them.

They also have a tendency to develop unnecessarily complex forms of procedure. The best solution I know of is to have a senior Naval and Army officer on each beach who are known to possess sufficient force and drive to see that things work.

20. Balloons

Balloon barrages do not justify the amount of space and trouble they take in the assault wave. If it is necessary to put balloons on the beach, they should not be emplaced until the arrival of the reserve wave when space is not so important.

21. Mutual Recognition by the Air and Ground

It is very important that more instruction be given both ground troops and air troops in recognizing each other. I believe that the number of friendly planes shot down by ground troops in any operation is considerably less than the number of friendly vehicles destroyed by our air. This fact is not an argument against close air-ground support which is of sufficient value to warrant the casualties above mentioned, but it is regrettable that such casualties occur, and more thorough training would certainly reduce their number.

22. Supply

The initial supply for all classes must be decentralized to the Sub-Task Forces. The amount and character of supply will depend on circumstances, which are governed by the character of the terrain, the type of beach or port, and the distance from home. In any event the Force Commander should not attempt to intervene in the supply problem until the initial objectives of the landing have been attained. Then the G-4 of the Army and his assistants, with the aid of special beach engineer battalions, should take over the beaches. As the operation progresses, the G-4 of the Army should be relieved by units from the SOS who take over the harbor and other successive supply installations as the Army moves forward. To make this transition smooth, it is desirable that representatives of each section of the SOS accompany the G-4 of the Army. No T/O allows sufficient personnel for the G-4 section in a landing operation. A transportation section in G-4 is essential and should contain from ten to twelve officers and about twenty enlisted men. This is probably the most important section in G-4.

SECRET23. Build-Up

In the TORCH Operation, due to time and space, the earliest probable build-up was 60 days after landing, which meant that the initial landing lived or died on what it took with it. In the Sicilian Campaign, and in other possible operations, the second and third convoys can arrive sooner, and in fact, ships making the assault landing will return and bring up the successive increments. There is a tendency to arrange the sequence in which these increments will arrive. This is wrong. The best a Commander can do is to estimate what he would probably want, but the action of the enemy will determine the order in which he will want them. An officer of force and experience must remain behind to command these build-up increments and send whichever type is called for promptly and completely.

24. Engineers

The faster an Army intends to go and the more violent the blows it intends to strike, the larger must be the tail. Without tremendous supplies of gasoline, ammunition, and other stores, an Army cannot develop its elasticity or striking power. It cannot attain these supplies except through the use of a tremendous number of troops behind the front line. At one time in the Sicilian Operation, the Seventh Army had thirteen Infantry regiments and nine Engineer regiments, besides Ordnance, maintenance, and other non-fighting but vitally essential units. In fighting in bad country against an enemy who trusts to demolitions for delay, it is conceivable that the ratio of Engineer regiments to Infantry regiments should be fifty-fifty. Certainly every Infantry division actively engaged requires the services of one Engineer regiment in addition to its divisional Engineers. The Corps Artillery certainly requires an Engineer regiment, and others must be utilized to see that the supplies brought up by the Army reaches the Corps and Divisions. 1272

SECTION B: TACTICAL PLANS AND METHODS1. General

The plans for a landing operation must be simple, not only for the Force as a whole but also for the Sub-Task Forces. In order to insure coordinated effort, the Commanders of the Sub-Task Forces should be assembled and the general plan and objectives of the landing should be explained to them so that in the inevitable fog of war, in which they will find themselves, they can use their best efforts for the accomplishment of the general aim.

2. Terrain

The Sub-Task Force Commanders should be given a free hand in planning the details of their operation, but they should make their plans conform to the terrain. By the same token the training of their troops must conform to the type of terrain over which they will fight.

SECRET3. Speed over the Beach

The primary function of a landing operation is to secure a beachhead which means we must get ashore and proceed far enough inland to insure that we will not be evicted. The greatest importance must be placed on the rapid leaving of the landing craft and of the rapid and relentless advance across the beach. Troops must not stop on the beach!

4. Initial Assault Equipment

All boats which are capable of being beached from the LST on down should approach the beach with mortars or tank guns and machine guns emplaced to fire. The support battalions in the initial assault must be equipped with the antitank guns and tanks, also with self-propelled dual-purpose antitank, antiaircraft guns on half-tracks.

5. Surprise Element

If surprise can be insured until H minus 1 hour, the chances of landing successfully are greatly enhanced. Owing to the noise of the ships in the transport area, it is highly improbable that surprise later than H minus 1 hour will ever be secured. This being so, it is very desirable that the air assault the selected beaches between H minus 30 minutes and H minus 15 minutes. It must be definitely arranged that if for reasons of weather or other causes the air is unable to attack before H minus 15, the air attack must be dispensed with.

6. Initial Objective

The first objective for a sub-task force is to secure before dawn a well-marked terrestrial objective, far enough inland and so situated that its capture prevents the enemy from putting small arms and mortar fire on the beach. It is permissible to reorganize on this line. However, if the enemy is retiring, do not stop to reorganize but push on to what is called the artillery line; that is, a terrestrial objective which will prevent the enemy, either through distance or by depriving him of observation, from bringing effective artillery fire, except by very large pieces, on the beach or shipping.

7. Mental Attitude

The greatest importance must be placed on enthusiastic elan and self-confidence on the part of the troops making the initial assault. Battle is a violent and elemental occupation. Men to conquer in battle, particularly in a night landing, must be imbued with this elemental viciousness. A landing operation which does not continue its attack is bound to fail.

8. Confusion

In any landing operation confusion is bound to occur. This is due to the fact that in spite of the best intentions, landing craft do not land where they are supposed to and stores get ashore regardless of categories. The main thing is to get the men and the stores ashore. If they are there they can be used. It is a waste time trying to get them

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ashore in some preconceived order, they will not be available.

9. Closing in of Transports

As soon as the enemy shore batteries are put out of action, the transports should close on the beach. There are two reasons for this from the Army standpoint. First, it greatly facilitates the speed of unloading by shortening the turn-around. Second, the air cover, which is protecting the beach, is also available to protect the ships. This is not true if the ships are lying near the horizon.

10. Aircraft vs Counterattack

In any landing operation, the most critical period is from about noon on D Day to the night of D plus 1, because during that time we are probably inferior to the enemy in guns and possibly in infantry, and he has had time to make his reconnaissance and bring up reserves.

It is therefore essential that if the mastery of the air permits, we have suitable aircraft aloft to be used against hostile counterattacks. A solution is to have these aircraft wait on over-head for ten minutes in every hour. They can have a secondary bombing mission to which they can proceed and drop their bombs at the close of their ten minute wait. They should be replaced in fifty minutes by another similar group with a similar secondary target. These airplanes must be in radio communication with the air support unit on the ground. By such a method any counter-attack can be met from the air. 1270

11. Function of Force Commander

The Force Commander should interfere as little as possible until the artillery line has been reached by the Sub-Task Forces. This having been done, he can issue orders for the grouping of the units for the further operations which present themselves. However, the physical presence of the Force Commander on shore during the early and generally critical phases of the operation is very important.

Every effort should be made never to issue orders below the next echelon of command. The higher an officer is, the greater temptation he seems to undergo to by-pass his juniors by telling them the size and type of unit with which they are to execute instructions.

PART II - COMBAT1. General

Much has been written on war but little on fighting. In what follows I have attempted to give a cross-section of the actual combat procedure from the infantry regiment down. To obtain this data I personally visited each division and made a short talk on what they had done, explained to them what they were fighting for, and gave them a picture of their future operations as I visualized them. At the close of each of

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these talks, the most outstanding officer in each grade in the infantry and the artillery liaison officers of the particular division were questioned by me. What follows is a cross section of the opinions thus gathered.

It is of interest to note that nothing hereinafter presented varies materially with what we teach; however, the emphasis is somewhat different.

2. Infantry Regiment in Open Country

The infantry regiment in open country normally attacks with two battalions in line, the cannon company in close support in the center, and the third battalion back. When the regiment is acting alone, the artillery of the combat team supports it. When two regiments are attacking abreast, the support is generally from the massed artillery of the division.

The advantage of attacking with two battalions abreast is: In the first place you have more artillery observers and can therefore place fire more accurately; in the second place you hit harder from the beginning and thereby give the enemy less chance of building up. You still retain flexibility of maneuver through your third battalion.

Except in particularly difficult country, it is usually possible through the use of engineers to maintain two battalions abreast. These engineers, working at night behind an infantry screen, make expedient roads up which the necessary vehicles can move in support of the battalions. As the fight moves on the engineers must extend the roads. 1269

3. The Infantry Regiment in Close Country

In very close country the regiment attacks in column of battalions with the cannon company in rear of the second battalion. The chief disadvantage of this formation is that the regiment will frequently extend to a depth of 5,000 yards and it will require considerable time to deploy its full power.

The advantage is however that in fighting against an enemy who utilizes delaying action, we usually have one fresh battalion for the next day's advance. This rotation of battalions permits a regiment to fight at its maximum efficiency for quite a while.

In deep penetrations against an active enemy, particularly if he is provided with tanks, it has been found expedient to leap-frog battalions. The leading battalion advances and occupies or captures a limited objective on a commanding site. The second battalion passes through the first battalion which immediately begins to organize a defensive position. When the new leading battalion has reached a suitable limited objective further to the front, it will halt and the third or rear battalion will pass through it. The second battalion then begins to organize. In this way the danger of a counterattack is materially reduced, since, if the deployed leading battalion is over-run, the enemy comes up against a partially prepared position, and if this is broken through, he finally

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strikes a fully prepared position. As a matter of fact, the enemy never got to the third or fully prepared position in Sicily.

In following the above-mentioned method, care must be taken not to become defensively minded. If everything is going well, the battalion which first halted should quit its defensive position and move up so as to be available to support the leading battalion or the second battalion with a counterattack, the direction and nature of which must be planned and reconnoitered.

4. The Infantry Battalion in Open Country

The infantry battalion in open country normally advances with two companies up followed by the heavy weapons company, with the third rifle company back. All companies advance in column of platoons, the platoons being in a line of squad wedges. In cases where the terrain necessitates excessive intervals between the leading companies, the heavy weapons company is split three ways, a portion going to each company. This has two disadvantages. First, it lessens the possibility of battalion control and volume of fire; and second, there is a tendency on the part of rifle companies to outstrip the heavy weapons attached. It is our experience that the rate of progression of the heavy weapons company must and should determine the rate of progression of the battalion. However, the tendency of all heavy weapons, whether they be artillery, mortar, or machine guns, to squat in a good position must be prevented. The heavy weapons company must push forward. So must the guns. 1268

5. The Infantry Battalion in Close Country

In close country the battalion advances in column of companies with two rifle companies up followed by the heavy weapons company and then the third rifle company.

In one division which has been very successful, there is a tendency to create special task forces of varying strength by a mixture of rifle companies, artillery, tanks and heavy weapons companies, and sometimes 4.2 mortars. While this system has certain advantages, it is not recommended. The force is not homogeneous, and it is felt that in most cases one of our infantry battalions has sufficient power to accomplish any mission which a force of that size can be expected to carry out. My personal observation is that a battalion is the smallest unit which should ever be given a detached mission. We have tried using companies but this practice has almost invariably resulted in costly failures.

Note:-In the case of regiments and battalions the formations above described are equally applicable by day or night.

6. The Rifle Company in Open Country

In open country the leading rifle company or companies deploy with one platoon up and two rifle platoons echeloned back, the automatic weapons platoon less detachments following on the axis in the rear of the two flank platoons. The platoons are in column of squad wedges. One section of antitanks usually follows the leading platoon; the other section

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is with the leading element of the automatic weapons platoon. Usually one section of 60-mm mortars and occasionally a section of machine guns accompanies the leading platoon. At night, in operations through open woods or orchards, the leading platoon deploys as skirmishers and covers the whole front of the company. Distances are very much reduced.

7. The Rifle Company in Close Country

In close country the company moves in column of platoons with the automatic weapons behind the second platoon and one section of anti-tanks behind the first platoon. In any type of country, open or close, when the fire fight starts the leading rifle platoon, aided by such automatic weapons as are with it, becomes the base of fire. The other rifle platoons are used to build up the firing line in the case of a regimental attack. In case the battalion is alone or where it is the flank battalion of a line, the second and third platoons are used for outflanking operations on the open flank.

At night the advance is made in column of platoons, one squad of the leading platoon acting as point. In this case a squad from the second platoon is split to provide a close-in right and left flank protection.

8. The Cannon Company

In utilizing the cannon company of the infantry regiment, it is highly desirable that it be as far forward as possible. However, due to the lack of cover in Sicily, this could only be accomplished by night movements which were not always possible. It is necessary that the cannon company know the artillery plan so that it may specialize on targets other than those which are probably to be engaged by the artillery. An observer from the cannon company accompanies the leading battalion or battalions. Note:-It is my personal opinion that if a suitable carriage were available the cannon company would be considerably strengthened by the inclusion of a platoon of at least four 4.2 mortars.

9. Heavy Weapons Company

The best practice, as has been previously stated, is for the heavy weapons company to work as a unit under the battalion, to support one or both leading companies, and to provide covering fire for the third rifle company when the latter is used to maneuver. It has been found that in very difficult country the heavy machine gun section of two guns produces better results if one gun is left with the transportation and all members of that gun squad act as relief carriers and bring up ammunition. In countries such as Sicily it is almost necessary to have pack animals. The largest number of rounds fired by a heavy machine gun in one day was between 5,000 to 6,000. The high average for 81-mm mortar was 800 a day, normally many less. Our men prefer the light shell to the heavy for the 81-mm. There is one case on record where two 60-mm mortars fired 1,000 rounds in one day. To provide ample ammunition for starting a fight, all members of the rifle company carry one or sometimes two 60-mm mortar shells with them and deposit them near the mortars as they go into the fire fight.

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The heavy machine guns come into action between 500 and 1,000 yards and provide overhead supporting fire at ranges as close as 1,000 yards. In this dry country it is possible to pick up the splash of machine guns by using field glasses at 1500 yards. The guns go into action at an estimated range short of the target and creep up by bursts of from 5 to 10 rounds.

In the daytime the mortars are all directed at point targets or used to attack enemy mortars on reverse slopes. At night they are used for demoralizing fire, which has considerable effect.

It is felt that as in the case of rifle fire we do not use sufficient fire from the heavy weapons on infested localities, either by day or by night.

10. The Rifle Platoon in Open or Close Country

The leading squad of the leading platoon acts as a point with an advance element of two men as scouts preceding it. The squad less the two men moves in wedge formation. In open forests or in orchards, particularly in night operations, the leading squad does not send two scouts forward but deploys a line of skirmishers across the whole platoon front. The two remaining squads of the platoon act as support and follow the point either in column of two's or in wedge according to the terrain. One section of 37's is immediately behind the point if it can possibly be kept there. This gun is especially desirable where the intervention of enemy tanks is expected.

It is frequently the practice to attach one section of 60-mm mortars and one section of light machine guns to the leading squad. The platoon leader of the leading platoon, with a runner, moves directly in rear of the leading squad. When the enemy is encountered, the leading squad automatically becomes the base of fire. The lieutenant then calls upon the automatic weapons platoon through the runner for whatever fire support is indicated. He also immediately directs, by voice, his remaining squads to execute an enveloping attack. Normally, this attack is executed by the second squad moving to the uphill side of the base of fire and the third squad extending the line beyond the second squad.

In hilly country it is nearly always desirable to envelop from the uphill side so as to work downhill. In open flat country the lieutenant decides on which flank to execute the envelopment, depending on enemy resistance and the availability of whatever cover exists. The leading squad informs the others of the appropriate location of the enemy through connecting files which carry the information by voice to their respective squads.

The 60-mm mortar with the leading squad generally gets on the target in 4 rounds. Its chief mission is to deal with automatic weapons or mortars rather than with the immediate small arms resistance. It is very effective up to from 1200-1500 yards.

The German does not engage in a fire fight at what we would

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call medium ranges. He either opens fire at grenade range with his rifle elements, followed almost immediately by his automatic weapons and mortars at longer range, or else he uses machine guns and rifle fire at excessive ranges. This latter form of fire, while demoralizing, has little actual effect, and it is found where our men have any cover they move forward readily in face of it. In open country where there is a lack of cover, it is necessary for the platoon and squad leader to insure the progression through personal leadership. In such cases our men must be made to fire, example often gets results.

It is the custom of our men to fix bayonets when the shooting starts, and there have been numerous cases in which the enemy while still fighting has been killed with the bayonet. This is particularly true at night. The German, on the other hand, seldom if ever fixes bayonets except at night, and even at night he is more prone to shoot than to close.

It is the general consensus of opinion of all the officers who have actually participated in battle that our men do not shoot enough. This is because we have for years been taught not to shoot unless the target was seen and was a profitable one. This is a mistake, and it is highly desirable that controlled but continuous fire be directed on any infested locality from which enemy fire is emanating whether or not the individual doing the shooting can be actually seen. This statement applies to all types of fire available to the infantry regiment.

Fire reduces fire, that is firing on the enemy reduces his ability to fire at you. If men halt and lie down, without firing, they are immediately subjected to intense fire, whereas if they keep moving forward, or if they open fire on the enemy or on the locality from which he is firing, his fire is immediately reduced. This point must be emphasized in training and in battle, too much stress cannot be put on it.

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Intimately connected with the foregoing is the question of fire distribution. Our men have a deplorable tendency to shoot at obvious portions of a target rather than to fire straight to the front at less visible targets. This results in those portions of the enemy who are visible receiving all the fire while our men receive the undistributed fire of those portions of the enemy who are not so clearly visible. Ground once captured must never be given up.

11. Night attacks

There is considerable feeling in favor of night attacks. When these are used, and to be successful one must attack both day and night continuously. They should be executed by taking advantage of the moon, or they should be put on about 2 1/2 hours before dawn if there is no moon, in either case on a limited objective. The heavy weapons and artillery should be put into position and registered the night before. They can then cover the attack until the flashes of the leading infantry show they are coming close to the objective.

A night attack, whether executed by moonlight or just prior to dawn, must be confined to limited objectives and these objectives must

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be carefully reconnoitered the previous day, and the men who made the reconnaissance must lead the units to the objectives. In making this reconnaissance it is sometimes necessary for patrols to expose themselves in order to draw fire.

Night attacks against unreconnoitered positions, particularly in hilly country, are very apt to fail because viewed against the stars or moonlight, one hill looks like another and troops misjudge their locality by as much as a thousand yards.

12. Counterattack

The German will invariably counterattack immediately after dawn and is very adept in supporting this with artillery and mortar fire. After he believes the position has been softened by supporting fire, he advances on it from the front with a small number of infantry and seeks to envelop one or both flanks with the majority of his infantry. This infantry starts to attack between 800--1000 yards and comes forward at a continuous fast walk using marching fire or firing from the halt, or from the kneel.

In no case where our infantry utilized the full power of their rifle did an attack get home. In fact, our troops looked forward to the German counterattack as the surest and most effective way of killing Germans. Nevertheless, the certainty of receiving such an attack makes it very evident that the position gained at night must be ready for an attack by daylight.

If the observers from the batteries are in contact, it frequently is possible to stop the counterattack by a combination of percussion and air bursts. I only know of one case where the Germans, stopped by artillery fire, resumed his attack. Normally, he moves forward until human nature can stand no more then quits. While going forward he shoots a great deal and makes all the noise he can. However, his small arms fire is of little value.

1264

13. Artillery Liaison Officers

It was our experience that 65 per cent of the artillery fire put down by the 105's was through forward artillery observers and liaison officers; 17 per cent was harassing and preparatory fire; and 18 per cent was observed from liaison planes or battery positions.

The liaison officer with an infantry battalion must and should control the forward observers who accompany the assault companies. These observers should report to the liaison officer to get instructions from him and be made conversant with the infantry plan. They should then join the infantry companies to which assigned. Both the liaison officers and the forward observers must remain with the infantry for the duration of the fighting and must not attempt to return to their artillery organizations during the night.

The forward observers should remain in contact by voice or

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runner with the nearest infantry platoon because it is our experience that more than one-half of the targets fired on by our artillery were picked up by the infantry and reported to the forward observers. Similarly, much of the tactical information received by the High Command came through the artillery channels.

As soon as a position has been captured, the forward observer must report to the liaison officer what probable channels of hostile counterattack he is in a position to cover with observer fire. This information is transmitted by the liaison officer to the infantry battalion commander.

It is noteworthy that the T/O does not provide adequately-- if at all--for the parties who must accompany the forward observers. Practically the same party as accompanies a liaison officer is needed for the observer. It is best practice for the forward observer's vehicular transport not to advance in front of the reserve platoon of the company he is operating with.

Many forward observers and some liaison officers have the erroneous opinion that in a war of movement, fire cannot be put out at night. This is wrong. Also, observers can point out the location of objectives for night attacks by snoking them. It is believed that if each forward observer were provided with two infantry radio sets, SCR-536, it would greatly facilitate his work and double the chance of getting his information through.

There is also a belief that the larger the gun the farther to the rear the observer should be. This is wrong; any gun should engage any target it can bring under effective fire.

PART IIIGENERAL NOTES (TACTICAL)1. "Dig or Die"

The expression, "dig or die" is not only untrue but harmful. Troops must not be permitted to dig until they have reached the final objective.

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2. Keep Moving!

It is necessary that officers and non-commissioned officers prevent the men from remaining prone and passive after they have been induced to lie down by enemy fire. Men in such positions offer ideal targets and the enemy fire will increase. Therefore, they must be required to move forward or, if that is impossible, to at least open fire. During the forward movement the troops should fire not rapidly but continuously. The act of firing produces self-confidence on the part of the firers and reduces the self-confidence on the part of the recipients of the fire.

SECRET3. Replacements

All officers are unanimous in their belief that infantry rifle battalions should enter combat with 15 per cent overstrength in basic privates and lieutenants, and that in calling for replacements this ratio should be maintained. If this is not done, the whole theory of squad and platoon performance breaks down through lack of manpower. It is futile to say that casualties do not occur sufficient to justify the above demand. Whether the casualties occur or not, the men are not present. They are sick, they are on detached service, they are lost. We are not dealing with suppositions but with facts.

When active operations are in progress, divisions do not and cannot provide even educated guesses as to the number of replacements necessary, therefore, during active operations, calls for replacements should be based on experience tables. When a lull occurs, accurate check ups can be made and inequalities then corrected. However, we will always be short. In providing replacements it is the experience of Morocco, Tunisia, and Sicily that at least 75 per cent of casualties occur in the riflemen of the rifle companies, therefore, in training replacements, this consideration should be borne in mind.

4. Geneva Convention

In training troops for battle, it is highly desirable that pertinent facts of the Geneva Convention be brought to the attention of all concerned.

5. Night Practice

Night combat has such an important place in war and is so disliked by the Germans that we should specialize in it. Great improvement in night operations, particularly with regards to eyesight, are produced by practice.

6. Reconnaissance

From the highest units down there is a notable lack of understanding of the value of reconnaissance and how to execute it. Unquestionably, the reconnaissance troop in the infantry division is not adequate in size. It should certainly be doubled. Further, all infantry rifle soldiers must be taught how to scrutinize the country for concealed or camouflaged gun emplacements and pillboxes.

7. Air Support

Air support divides itself into three phases. The first one is the removal or control of hostile air activities in the air. This is solely a function of the air. The next one is bombing ahead of the ground forces. This has been in the past satisfactorily accomplished by the ground stating those targets on which an attack would apparently facilitate the movements of the ground troops or hamper those of the enemy, and by the establishment of a bomb line. The bomb line should err on the side of

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- being too far in front of our own troops, and it should be picked out after consultation with air officers so that it will be delineated by terrain features easily discernible from the air. To draw a line between map coordinates is quite dangerous because people passing over the ground several hundred miles an hour have difficulty in picking out hypothetical land marks.

Finally, we come to what is known as close air support; that is, utilizing airplanes to attack in conjunction with and close to an attack put on from the ground. However, until definite air units can be provided to train with ground troops and to have as a primary mission the duty of attacking targets which are adversely affecting the progress of the ground troops at the time called for by the ground, it is illusory to count on a very great effect. On the other hand, the ground troops have a tendency to expect more prompt assistance from the above form of attack than is always possible. They must be taught that it requires quite a while to mount an attack with the appropriate bombs, etc.

The tendency to credit air attacks on roads and railways with the capacity of destroying such arteries is also illusory. In the first place the chances of getting a direct hit with a bomb on a vulnerable place are very small, certainly no better than the chances of getting a point hit with long range artillery, but this is not the primary defect. We all know that a demolition to be effective must be defended or else it will be readily removed. This fact is equally true whether the demolition is caused by a mine planted in the ground or by a bomb dropped from the air.

8. Amphibious Attacks

When a parallel flank command by the Navy exists, it is very important to use amphibious attacks in rear of the enemy's position. These amphibious attacks should be in a strength at least equivalent to a reinforced combat team, because such a force can land further in rear of the enemy and can be self-sustaining for a period of days. Navy gun-fire support is vital.

1261

9. Amphibious Supply

Under the conditions just mentioned, amphibious supply is of tremendous value both in saving time and vehicles, and also in bypassing blown-out bridges.

10. Defensive Works

It is believed that the construction of numerous powerful defensive works has a very bad effect on the morale of the troops constructing them, because, not trusting to their own weapons and courage, they begin to place confidence in wire and concrete. Wire and concrete are valueless against any enemy who will not be fooled into frontal attacks, or who, in the case of a landing operation, passes through the obstacles prior to dawn.

SECRET11. Air Photos

The impossibility of securing air photos from the Air Force in time makes it necessary that photographic planes of suitable type with suitable equipment and developing laboratories be attached to each corps.

12. Retrograde Movements

Nothing is more subversive of morale than retrograde movements during combat, even when these movements are for the purpose of reforming troops. When the movements take place at night, they are doubly disadvantageous. Generals and staff officers must consider this danger whenever issuing orders for movement.

GENERAL NOTES (TECHNICAL)13. Mortar Sights

None of the mortars provided American troops have any means of illuminating the sight for night firing. This is a grave defect. The Germans have a small flashlight strapped around the forehead under the helmet which throws a pencil of light on the elevating and traversing mechanism of the mortar. Some such device for all our mortars should be developed.

14. Illuminated Sights

The tank 75, the 57, and 37, as well as all larger calibers, should all be provided with illuminated sights for night firing. The tank is particularly valuable in firing at point targets at night, provided these targets have been picked out in the daytime. The direct fire from the tanks in turret defilade can be kept up, especially while firing uphill, until the infantry attack is within 50 yards of the target.

1260

15. Ammunition

In Sicily we had nothing but armor-piercing ammunition for the 57. It is believed that 10 per cent of the rounds for a 57 should be armor-piercing, and the rest should be 20 per cent white phosphorus and 70 per cent high explosive.

If a projectile can be developed for the 37 with more penetrating effect, it is superior to the 57 as an offensive antitank weapon for two reasons: First, it can be pulled by the low-relief $\frac{1}{4}$ -ton truck. The 57 cannot and must be pulled either by a half-track or a high-relief $\frac{3}{4}$ ton truck. Second, with the limited crews available, the 57 cannot be manhandled any distance over bad country while the 37 can. Even with present ammunition the 37 is deadly against tanks up to 100 yards.

16. Bazooka

On four specific occasions the Bazooka accounted for Mark-4

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tanks. It is believed that if the Bazooka were provided with a personnel shell with an "all-way" fuze in addition to its armor-piercing shell, its effectiveness would be materially improved. Most of the officers I have talked with prefer the rifle grenade to the Bazooka as a close range antitank weapon.

17. Hand Grenades

The majority of opinion favors the percussion grenade over the fragmentation grenade. This is based on the fact that at the close ranges, at which grenade fights take place, the shocking effect of the percussion grenade is sufficient to let troops in with bayonets, whereas if they use fragmentation grenades, they have to take cover and lose time getting close. The troops in Sicily were not provided with any means of carrying grenades. This is an error and should be corrected. Thermite and white phosphorus grenades in the ratio of 5 per cent each should be available in a trench.

18. 4.2 Mortars

The 4.2 mortar firing a white phosphorus or high explosive shell is a terrifically destructive weapon, but as its present mount is almost wholly immobile it can only be used in the first phase of an attack. If it could be provided with a tractor-drawn mount from which it could fire, it would be tremendously valuable. The range should be increased to 4,000 yards.

19. Plastic Mines

In Sicily we met only one plastic mine, however, it is certain that this type will become more and more prevalent. I feel confident that the inventive genius of America can devise some device for locating such mines. Certainly an intensive study for the creating of such a device should have a very high priority.

In training, the detection of mines by all types of troops must be stressed and each infantry rifle company should be provided with ten mine detectors.

Owing to the fact that mine explosions are usually fatal, and we do not classify the cause of death, it is impossible to say what per cent of our losses were due to mines. My personal opinion is that not over ten per cent of our losses were due to mines. Mines are mental hazards and must not be over-emphasized in training.

PART IV - NOTES ON CORPS AND ARMY1. Composition of an Army

While an Army is a nebulous organization, it is felt that as a datum plane a minimum Army should consist of two infantry corps of three divisions each. Each corps should be reinforced by a corps artillery

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brigade. The necessity for three divisions is that by using them it is possible to maintain the pressure. Very rarely do situations arise where a two division corps can rest one of its divisions.

In addition to the two infantry corps, such an army should have two armored divisions. Offensively these armored divisions are for the purpose of exploiting a break through or enveloping a flank when the door has been opened by the Infantry. Defensively, the armored divisions are the most powerful and readily available means of stopping major hostile counterattacks. In addition to the two armored divisions above specified, there should be one GHQ medium tank battalion, including a complete reconnaissance company, in the ratio of one for each infantry corps. The purpose of these tank battalions is to maintain the integrity of the armored divisions. Many occasions arise when largely for morale purposes it is desirable to shove tanks up behind the Infantry or to make a defensive flank with tanks. If elements of the armored divisions are used for these piecemeal operations, the armored divisions are dissipated. On the other hand, the presence of the GHQ tank battalions with adequate reconnaissance (at the present moment the GHQ tank battalions are deficient in reconnaissance) provides a means of augmenting the tank strength of the armored divisions should circumstances demand it.

In almost any conceivable theater of operations, situations arise where the presence of Horse Cavalry in a ratio of a division to an army will be of vital moment. Had we possessed Horse Cavalry in Tunisia or Sicily, not a German would have escaped.

2. Artillery

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The corps artillery brigade should consist of one regiment of 155 guns, one regiment of 8-inch howitzers, and one regiment of 4.5 inch guns, also one observation battalion. All corps artillery should be provided with M-4 tractors as now used by the G. I. Note--where the maps are bad, the position of the front line can be determined by having front line units fire "very" light pistols at a specified hour. The observation battalion picks these up and the front line is accurately located.

For an army of two to three corps, one duplicate corps artillery brigade as above specified should be provided and in addition two battalions of pack artillery, four battalions of 155 howitzers, two battalions of 105's towed, and two battalions of 105 self-propelled. These additional weapons will be utilized by attachment to corps artillery brigades or to divisions, depending on circumstances. An army of four corps needs double this amount.

The proportion of white phosphorus in corps and army reserve artillery should be at least 20 per cent. All other projectiles should be high explosive.

There has been considerable comment about the fact that in Tunisia and Sicily the American artillery fired at extreme ranges most of the time. This is accounted for by the fact that since front lines do not exist, guns cannot be pushed up as they were in World War I.

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It is the consensus of opinion that a 6-gun battery is better than a 4-gun battery in the case of the 105 and 155 howitzers. In the case of longer range weapons, the necessity for accurate control at the batteries, coupled with the need of dispersion, makes a 4-gun battery preferable to a 6-gun battery.

3. The Men

Since the capture of Messina, I have had the opportunity of examining many of the battlefields from the side of the enemy. As a result of this, I am more than ever impressed with the self-sacrificing valor, endurance, and resourcefulness of the American soldier. He is a peerless fighting man.

G S Patton Jr.
G. S. PATTON, JR.
Lieut. General U. S. Army
Commanding. 1257

1 Incl - Annex

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HEADQUARTERS SEVENTH ARMY
APO 756
US Army

A N N E X

N O T E S O N T H E

1256

S I C I L I A N C A M P A I G N

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1. G-1 SECTION
2. G-2 SECTION
3. G-3 SECTION
4. G-4 SECTION
5. PROVOST MARSHAL
6. MEDICAL SECTION
7. ORDNANCE SECTION
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10. SIGNAL SECTION
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12. FIELD ARTILLERY SECTION
13. ANTI-AIRCRAFT SECTION

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HEADQUARTERS SEVENTH ARMY
APO 753
US Army

NOTES ON SICILIAN CAMPAIGNANNEX

The following is a summary of the comments of the respective General and Special Staff Sections, Headquarters Seventh Army, on lessons learned in operation HUSKY.

1. G-1 Section.

a. Overstrength Allowance.

In order to maintain effective strength in combat, it was found to be essential to have fifteen per cent overstrength in enlisted men and company grade officers assigned to all assault units well before the start of operations.

b. Replacements.

Replacement battalions should be assigned to the task force to provide a replacement reserve and to re-equip and redistribute all casualties. Each replacement battalion should be operated by and work in close coordination with the task force to which it is assigned.

Units should be allowed to requisition replacements during initial stage of combat against anticipated losses due to the lag between the time when a verified requisition can be submitted and the time when the actual replacements can arrive. Requisitioning on the basis of battle casualties will not work.

c. Graves Registration.

There should be an increase in the number of graves registration personnel and also military police to make available, in the case of the latter, a sufficient number of personnel for prisoner of war processing and escort guard.

All graves registration and military police personnel should be available on D Day.

Graves registration was immeasurably facilitated in the Third Division by requiring the identity of every officer and enlisted man of the division to be marked on the inside of each legging. It is recommended that this be made standard practice.

d. G-1 Reports

The twice a day G-1 reports based on estimates proved

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accurate and invaluable supplement. Verified reports got in too late to be of much value. G-1 strength figures should be effective, and not roster strength as was required during the HUSKY operation.

2. G-2 Section.

a. Administration.

The table of basic allowances for army headquarters should include a multilith unit, including operation personnel, and a HENR-O-GRAPH (a device which projects vertical planes from a horizontal plane, as tracing contours on a map to get reliefs of the terrain).

Experiments should be conducted to provide built-up vans or trucks as mobile field offices.

b. Combat intelligence.

It is recommended that the personnel of this section be increased to a minimum of four officers.

Enemy battle order should be emphasized and stressed in peace time training. 1254

Photo intelligence personnel should be selected according to their qualifications. They should receive a higher degree of training. In this connection it is recommended that combat officers, incapacitated for field work, be considered for such an assignment.

Photo interpretation detachments should become an integral part of all headquarters down to include divisions.

An officer of each G-2 Section should be trained as a photo intelligence officer.

It is recommended that photos for front line units be sent direct to these units and that higher headquarters be sent copies when they are available.

c. Air tactical reconnaissance.

Officers of the G-2 Section should be trained in the capabilities and uses of the aircraft serving their section.

d. Maps.

Detailed road maps should be issued to each vehicle driver and to each military policeman. Accompanying these maps should be booklets of town plans, indicating the changes of direction of main roads passing through the towns.

e. Counter-Intelligence and Security.

Tactical Counter-Intelligence Corps personnel is inadequate

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to take over management of occupied territory. Additional personnel trained in civil government should follow more closely behind combat units.

f. Prisoner of War Interrogation.

It is recommended that prisoners of war be separated according to age and, if possible, according to political affiliations and military organizations.

g. Intercept Services.

In order that "Y" Service be of maximum benefit to an operation, it should follow closely in rear of combat elements. A decision must be made as to degree of security necessary for the proper functioning of this service.

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h. Miscellaneous.

It is recommended that a representative of the psychological warfare section and all other special intelligence agencies, be on the planning and operational staff. Such representatives should be directly responsible to G-2 for the proper placing and activities of the personnel they represent.

3. G-3 Section.

a. Organization.

Each staff section should be brought to full strength when the initial directive is received and planning begins. The volume of work is usually greater during the planning and preparations phase than it is during the actual operation. Augmenting the staff after planning has been started is unsatisfactory. Officers who are assigned to the staff late in the planning stage have little opportunity to become oriented and consequently lack the necessary working knowledge of the detailed plans and troops involved to be of material assistance during this phase. They do not develop a background of familiarity with the operation which enables them to be helpful until the campaign is well under way.

b. Joint Planning.

The naval and air arms participating must plan in conjunction with the ground force. In HUSKY as in TORCH the Army and Navy staffs were widely separated during the critical period of planning. In both operations this resulted in needless misunderstandings and the loss of valuable time. The plan for a combined operation must be developed in close cooperation by all participating arms. This requires that ground, naval and air force staffs be immediately and continuously available to each other so that all the details of training, rehearsals, movement to staging areas, loading of convoys and embarkation may be effectively coordinated. It is essential that the air service command be represented on the air planning staff. Representatives of air tactical units are not sufficiently familiar with air service units to indicate with the required exactness

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service command requirements for shipping space.

c. Special Amphibious Operations.

The same degree of coordination and planning required for the initial landing phase between ground, naval and air forces involved, is demanded for amphibious attacks executed subsequent thereto. It is essential therefore that a well qualified naval officer, in direct communication with naval headquarters, be available to cooperate with the ground and air staff. To provide naval gunfire support for such operations it is essential that shore fire control parties be reorganized and that the Navy direct naval gunfire liaison officers to join promptly the headquarters of the force which is to make the attack.

1252

d. Air Support.

The following recommendations are offered to further improve the technique of ground-air support:

(1) A staff officer for air should be assigned to the G-3 Section of all divisions and higher units. He should be from the Air Force, preferably of field grade and thoroughly trained in ground-air support.

(2) The radio communication of air support parties should be improved by more intensive training of operators.

(3) Air support parties, supervised by the G-3 for air, should regularly participate in joint exercises with the ground units with which they are to work during combat. Pilots who are to fly missions in the operation would benefit immeasurably by participating in such training.

4. G-4 Section.

a. Transportation Section.

A transportation section as an additional special staff section is essential to the successful operation of the supply function of a modern field army or an amphibious task force.

b. Base Area Group.

A base area group, or a similar organization, must be provided early in the planning stages of any contemplated overseas operation and must operate directly under the command of army or task force commander.

c. Pack Animals.

The pack animal still has a definite role to play in modern warfare. Pack transportation is essential to the infantry soldier for the forward movement of supplies through difficult terrain, such as mountains, where the employment of motor elements is limited or often impossible.

SECRETd. Rear Headquarters.

Establishing a rear headquarters facilitated to a great extent the operation of supply, troop movements and forwarding of replacements.

5. Provost Marshal.a. Civil Affairs Personnel.

Civil Affairs police personnel should be assigned to Army headquarters at the beginning of the planning phase, to permit their participating in the preparation of joint police plans for the operation.

b. Military police.

There should be an increase in the number of trained military police personnel. Attachment of additional personnel to military police organizations should be accomplished in time to allow for their training. 1251

The military police personnel for an Army should be of sufficient number to provide the following:

(1) One military police battalion for the protection of vital army installations, to include guards for line of communications, traffic control and protection of all towns within the Army area.

(2) One military police battalion to be divided in such a manner as to provide support for individual task forces.

(3) An escort guard unit and prisoner of war processing unit to provide an escort guard company and a prisoner of war processing platoon with each task force.

c. Provost Marshal Staff.

The Provost Marshal should have his staff increased to a total of six officers to supervise and control Provost Marshal activities. There should be additional officers to provide for one liaison officer with each sub-task force.

d. Prisoners of War.

Transportation allowances for prisoners of war should be increased as follows: A minimum of four two and one-half ton trucks with trailers and two one-quarter ton reconnaissance trucks for each military police escort guard company, and two two and one-half ton trucks with trailers for each prisoner of war processing platoon.

There should be one army prisoner of war stockade within the Army area and convenient to transportation facilities. Any additional cages necessary to operate as transfer cages to be located at army supply points.

SECRETc. Personnel Released from Hospital.

When it is necessary to return released hospital patients through the medium of straggler control posts, all medical installations should be directed to return such personnel direct to the nearest straggler collecting point, together with a list of the names of personnel delivered. Transportation should be made available at each collecting point to transport the personnel so received to their units.

6. Medical Section.a. Planning.

The medical plan as prepared and approved should be issued in the form of a directive, to prevent alterations of the plan which might seriously handicap medical service rendered to the operation as a whole.

b. Equipment.

Planes with slow landing speed, or helicopters, should be available at all times to the Army Surgeon for maintaining constant liaison with widely scattered medical units. 1250

c. Medical Units.

The Corps type medical battalion should be reorganized into a battalion headquarters and three collecting-clearing companies.

Field hospitals must be augmented by surgical teams.

Medical personnel, their equipment and vehicles, should be loaded, insofar as possible, on the same ship. Under no circumstances should the personnel and equipment be shipped on separate convoys.

Medical units which are to be landed with assault troops should be combat loaded.

The semi-mobile evacuation hospitals (400 bed) should arrive complete with personnel and equipment by D plus 3 or D plus 4, and in the proportion of one hospital to each division. The larger evacuation hospitals (750 bed) should land not later than D plus 1; in the proportion of one to each two semi-mobile evacuation hospitals (400 bed).

Medical supply personnel should land on early priority to assure that medical supplies landed on the beaches are quickly collected, stored and made ready for issue.

d. Evacuation.

Hospital ships and hospital carriers should be under the direct control of the Army Surgeon. The exact time of arrival of these ships should be determined prior to D Day so that the Surgeon can make definite plans for their utilization.

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All hospital ships should be equipped with water ambulances similar to those on the hospital carriers, if they are to be utilized to evacuate from beaches.

Air evacuation is the most desirable method and should be utilized to the maximum.

Every effort should be made to establish landing fields for air evacuation as close to the combat troops as the tactical situation permits.

7. Ordnance Section.

a. Section Organization.

An Army ordnance staff for an operation similar to HUSKY should consist of eighteen officers, three warrant officers and thirty enlisted men. This group should be assembled prior to the start of planning.

1249

b. Supply.

Ammunition supply should be required to function at all times along normal ordnance supply lines.

New weapons develop new supply and maintenance problems. These problems must be anticipated by careful study and prior planning. The nature of the terrain to be operated over must be carefully considered with respect to its effect on maintenance.

c. Organization of Units.

The organization of ordnance units is in general satisfactory and no changes are recommended at this time. In this campaign circumstances required that they operate at reduced strength.

Maintenance sections were successful in meeting their mission of "pushing maintenance service to forward echelons at all times under all conditions".

Bomb disposal units proved fully equal to their tasks of removing and destroying unexploded bombs and unserviceable enemy ammunition.

8. Quartermaster Section.

a. Supply.

Plans for re-supply for the entire operation should be made at the same time as plans for the initial phase.

A large proportion of B-5-1 rations should be included in the plan for supply of any similar operations.

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The hospital supplement as packed for this operation and marked with a red cross should be adopted as standard for issue at any time the straight B ration is not issued.

b. Personnel and Equipment.

Graves registration personnel assigned to units must accompany elements on the assault convey in sufficient proportion to adequately take care of the needs of the assault elements.

The organization and equipment of quartermaster units is in general satisfactory. Extra personnel should be assigned all units in appropriate proportions to provide relief drivers. Additional vehicles with trailers to transport the dead are required by graves registration units.

9. Chemical Warfare Section.

a. 4.2 inch Chemical Mortar.

1248

The employment of the 4.2 inch mortar in the Sicilian Campaign indicated that infantry regimental and battalion commanders and staffs should be given instruction and demonstrations in the use of this weapon to thoroughly familiarize them with the value of the fire support it can give their organizations.

The organic transportation of 4.2 inch mortar battalion needs to be changed by the substitution of one-quarter ton trucks and trailers for the two and one-half ton trucks and trailers.

The range of the weapon should be increased to 1500 yards.

A more suitable mortar sight is needed.

Base plates and elevating screws need to be strengthened.

A traverse of 1,000 mils is needed.

A water-proof shipping container for the mortar shell is needed.

b. Miscellaneous Equipment.

The flame thrower is not of sufficient tactical value to warrant its retention as standard equipment for engineer troops.

Grenades, smoke, HC, HB (burning type) are of little tactical value.

Incendiary grenades HB were required in only limited quantities.

Colored smoke is an effective method for ground to air

SECRET

identification, but a larger cloud of smoke is needed than is obtained from the present smoke grenade.

A larger, longer burning smoke pot with a flash-hider is needed.

Grenade, frangible, M1 (FS) proved to have little tactical value and is very difficult to handle under field conditions.

c. Personnel.

This operation disclosed that the administrative personnel of separate companies was not adequate, that the chemical maintenance company should have more organic transportation to make it more mobile, that a chemical laboratory section should be available to the army chemical officer, for on-the-spot analysis of captured enemy material and that a chemical smoke battalion headquarters is needed, due to the fact that two or more smoke generator companies were required in all ports and their work must be coordinated.

1247

10. Signal Section.

a. Message Center.

The importance of efficient message center operation must be further impressed on all military personnel.

It is recommended that the message center officer of an army message center be of field grade in order to provide adequate supervision and direction of the message center. He must be an experienced officer, thoroughly trained and well versed in message center procedure. There is a definite need for a higher degree of training for all message center personnel.

All outgoing operational messages should be cleared through the Chief of Staff or through a central agency designated by him. This procedure is necessary to properly coordinate operational instructions, prevent repetition, eliminate errors, and to control the volume of messages in order to stay within the normal capacity of our communication facilities.

Many messages are over classified, both as to priority and security.

Messages to be relayed to another station should have the complete address in the proper place on the message.

b. Communications.

The chief signal officer should coordinate all codes and ciphers used within the army by subordinate units. Local codes, used by subordinate units, are a means of identification by which the enemy can discover movements and the relief of those subordinate units.

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The link-sign procedure should be used from division down only. The CCRP-1 and CCRP-2 should be used from division upwards.

Maintenance specialists for code device M-134 (SIGABA) should be included in T/O for army and corps and some equivalent to the British multi-airline M4L should be provided for rapid construction.

When several agencies require wire channels, it is necessary to establish priorities.

When moving forward, it is better to lay new wire lines than to repair existing enemy lines.

Spiral - 4 cable does not furnish reliable wire communication for active field use.

Rehabilitated civilian or commercial circuits are unreliable for carrier equipment. 1240

Tactical radio channels should not be used for administrative traffic during assault landings.

Signal operations personnel should always load, unload, and accompany signal equipment.

Radios, SCR-299, mounted in DUKWS provided satisfactory and reliable high-powered channels of radio communication during landing operations. However, these radios should be so constructed that they may be later removed intact, and mounted in two and one-half ton trucks, thus releasing DUKWS for unloading operations. Power units, PE-95, for SCR-299 sets must be shipped in on first follow-up convoy, to permit the modified Power Units, PE-75, used in DUKWS to be returned to signal depot for stock or other use. The larger power units PE-95 will be lost or damaged if brought over earlier. Smaller power units PE-75 are only adequate to operate SCR-200 radios for limited periods.

c. Training.

More emphasis should be placed on the training of Signal Corps personnel in army supply problems.

More training is required in mine detection and removal.

d. Division Signal Section.

It is recommended that the division signal officer have an assistant in the grade of major, that the T/O of the division signal company be changed to provide for an increase in personnel and that the radio intercept platoon of this company be named "monitoring platoon". The information picked up by this platoon should be sent to division G-2 and thence to Corps and Army headquarters.

SECRETe. Photographic Personnel with Combat Units.

One unit of the photographic company should accompany each front line division. The company, less these units, should be in a general army pool under the direction of the signal officer.

f. Equipment.

The Army and Corps signal sections require equipment for reproducing line route maps, traffic diagrams, and SOI's.

Twelve SIGABA are required for each Army headquarters and four for each Corps headquarters.

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There is definite need for Converter, M-131, or Converter, M-230.

One extra SIGIVI basket should be provided for each two SIGABA machines issued.

Speech plus simplex and speech plus duplex, or other similar repeater equipment capable of furnishing long range transmission over poor lines is needed.

The principal Army wire axis should be constructed of number 12 gauge, Brown and Sharpe, .104 copper wire.

Piper cub or equivalent light planes, with operation and maintenance personnel must be provided the signal corps for Army and Corps messenger or courier service on the basis of six for Army headquarters and three per Corps headquarters.

Proper focal length lenses on all types and makes of camera must be provided for in the combat area.

Old or used cameras must not be issued to combat photographers.

Sound recording equipment should be made available for the recording of historic and important news reel events.

During the initial landing phase some type of speed boat should be provided for messenger service between Task Force headquarters ship and the headquarters ships of Sub-Task Forces.

Direction finding equipment has no place in the infantry division. Division signal companies should not be provided with this equipment. It was not used and should be withdrawn from circulation. The converter, M-209, has completely replaced it.

g. Modification of Equipment.

Telephone switchboards must be re-designed to permit supervision of inter-trunking between the various types of switchboards,

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and between switchboards and dial systems.

The number of dial trunks on BD-89A and BD-80A switchboards should be increased to ten.

The switchboard BD-96 must be equipped with a pilot light.

Existing carrier equipment does not provide sufficient channels considering the amount of equipment and weight of equipment involved.

The SCR-299, originally installed in the panel trucks, is not satisfactory. There is insufficient room for the operating personnel and the peculiar outline of the vehicle renders it particularly susceptible to recognition by enemy aviation. 1244

The half-track or scout car are not suitable vehicles for mounting the SCR-193 or SCR-299 radio sets.

Signal corps units should use standard rather than special types of trucks.

The RL-31 should be mounted on all one-quarter ton trucks issued to signal units.

The internal mechanism of the mine detector must be shock-mounted and the leads made flexible.

There is great need for standard type test board.

11. Engineer Section

a. Water.

Maximum use of halazone tablets and hypochloride capsules for purifying local water sources is to be insisted on. Small detachments in isolated areas frequently called on engineers to establish water points when an abundant local supply needing only chlorination to make it potable was available.

b. Maps.

While photomaps are not regarded with favor by many combat elements, their use when interpreted by a trained officer was of great value in planning combat engineer work in forward echelons. Fresh information on demolitions, mine fields and defensive installations which greatly assisted engineer planning was regularly received.

All ranks must be indoctrinated with the necessity for economy in the use of maps. The initial issue of maps for this operation was generous. This may have been responsible for their wasteful use and for subsequent unreasonable requisitions.

In any event there is a definite need for a mobile map

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/ depot company or similar organization. The supply of maps was a vital function of the engineers during this campaign. The volume was large and additional personnel was required to assist the small map depot detachments in sorting, packing and issuing. It is also self evident that in any fast moving situation the map supply must be mobile.

c. Organization.

The organization of engineer units in general proved satisfactory. No changes are recommended at this time.

Key personnel of the Base Area Group who are to take over the administration of the area should be available early in the planning stage to facilitate continuity of policy and a smooth transfer of responsibilities.

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d. Equipment

In general, equipment was found to be satisfactory. R-4 angle-dozer proved to be inadequate for the type of terrain encountered. D-7 angle-dozer in the amount of one per combat engineer battalion and three per combat engineer regiment are absolutely necessary to permit these organizations to keep lines of communication open.

The specialized equipment of engineers, particularly angle-dozers, trailers and prime movers, must accompany units on their initial landing or immediately thereafter, otherwise they are incapable of performing their mission. Bailey bridges must be available from the start of the operation if the progress of the advance is not to be delayed. Additional end pieces for Bailey bridges should be provided in this type of terrain. The greater number of bridges erected were in lengths of less than the bridge unit of 120 feet.

e. Mines.

The need for more thorough training in mine recognition and removal by all personnel, particularly engineers, cannot be over-emphasized. This is a matter of grave importance, and should particularly be stressed in the training of replacements.

In landing operations, engineer personnel with mine detectors or personnel trained in prodding (a ramrod is good in the sand) must precede vehicles coming ashore.

In the latter stages of the campaign a considerable number of wooden mines were used by the Germans. This was a new but anticipated development. These mines are in all respects as effective as the metal mine and are not picked up by the mine detector. The only known method of discovering the wooden mine is by prodding.

f. Loading of Supplies.

Control of loading operations should not be too greatly decentralized. It is admitted that sub-task force commanders must be permitted wide latitude in the making of decisions as to the loading of

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- personnel and supplies, but since higher headquarters will eventually assume control, loading plans must provide for the arrival of all troops and supplies based on the overall picture.

Loading of items of a technical nature should be supervised by trained personnel, e.g., a Bailey Bridge lacking an essential part may better remain on the dock.

Trailers and their prime movers must be loaded on the same craft.

1242

g. Beach Markers.

Some confusion is inevitable in the landing of large numbers of vehicles and quantities of supplies on an unfamiliar beach. Confusion can be reduced and mines avoided only by proper sign-posting and traffic control. Therefore, adequate traffic control personnel and a large quantity of signs are to be landed early. Beach markers must be simple. Flank markers to define the limits of the beach, landing point markers and road exit markers for vehicle and DUKW drivers are all that are required.

12. Field Artillery Section.

a. General.

When the 105mm Howitzer M7 is employed, heavy supply and maintenance requirements must be planned for, since frequent repairs and parts are needed.

It is again emphasized that integrity of Field Artillery units should be maintained in order to secure the most effective fire support. When decentralization is necessary, units should revert to centralized control at the earliest possible time.

Survey must always be instituted in every position, even when good maps are available.

Fixed lot numbers on projectiles, powder charges and fuses were furnished to the artillery in this campaign. It is recommended that care be exercised to issue ammunition with the same lot numbers.

White phosphorous smoke shell which is to be replaced as a screening agent by the new HC-base ejection smoke shell should not be completely withdrawn, since it has proved to have excellent casualty and incendiary effects, and has a very strong morale effect on the enemy. This last was testified to repeatedly by prisoners. It is therefore recommended that both HC - BE and WP continue to be provided for artillery units. Recommended percentages (of total smoke) are: HC - BE - 80%, WP - 20%.

Extensive enemy use of land mines in defensive and delaying operations has made it essential that Field Artillery units be equipped

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with mine detectors to avoid heavy personnel and materiel losses when occupying positions. Engineer personnel is normally not available for this purpose, since road clearance and other missions have a higher priority than clearing artillery position areas. Authority has been secured from SOS NATOUSA for the issue of mine detectors to field artillery units in this theater on the basis of one per headquarters battery and three per firing battery. It is recommended that Tables of Equipment be modified to allow these mine detectors for all field artillery units, especially those in the US, to permit necessary training of artillery personnel in their use.

It is believed that we need longer range guns for counter-battery action against enemy medium and heavy artillery.

The artillery air OP has fully proven its effectiveness. Communication difficulties were encountered due to the short range of the SCR-610. A longer range set is needed.

It is essential that the time shell furnished for the 155mm Howitzer be fused with the M67 fuze.

Steps must be taken to reduce the shine of the fore part of the barrel of the 155mm Howitzer M1, since positions are revealed by the reflected light.

Better machining and finishing of the parts of the breech-block and firing mechanism of the 155mm Howitzer M1 is needed to prevent jamming and malfunctioning.

Both the four and six ton trucks have proved inadequate as prime movers for the 155mm Howitzer M1.

A stronger limber-lifting screw must be provided for the 155mm Gun M1. 1241

Elimination by rigid ordnance inspection of all artillery weapons which do not have an expectancy and serviceability beyond the immediate campaign in prospect should be accomplished from both units and replacement stocks prior to shipment from staging areas.

The training of more highly-specialized air photograph interpreters in division and higher photo interpretation units is essential to provide artillery units with proper photo interpretation.

The 105mm Howitzer M7 can be fired with fair accuracy from the deck of an LCT prior to the grounding of the craft on the beach.

b. Landing Field Artillery on the Beach.

It was found to be entirely feasible to land light, medium and heavy artillery early during the initial phase of the assault, directly on the beach from modern landing craft.

The 105mm Howitzer M7 (SP) proved to be one of the best

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non-amphibian landing vehicles of any arm. This vehicle was debarked in as much as six feet of water but came ashore under its own power without difficulty.

13. Antiaircraft Artillery.

a. Planning.

During the planning phase of an operation the antiaircraft officer should coordinate with the air planning staff in order to insure that adequate antiaircraft defense will be provided for all airdromes and landing fields that are to be used by our air force during the operations.

b. Training.

Antiaircraft units which are to be attached to a division for an operation should join the division in time to get adequate training with the division prior to the operation.

Radar officers should receive frequent refresher training. All antiaircraft gun battalions must be proficient in radar firing methods in order to do effective night firing.

c. Amphibious Operations.

Automatic weapons, on LST's, must be placed on the upper deck in a firing position that will give a maximum field of fire.

The 90mm guns must be landed as early in the operation as possible. The two-bogie gun with M-4 tractors should be available for these early landings.

Radars must be landed with the other fire control equipment for 90mm guns especially for night operations.

d. Equipment.

The 37mm gun on a M-15 mount cannot traverse fast enough for close-in, high speed courses. Change in gear ratio or electric traversing is essential.

The auto-runner on the 90mm gun does not operate in a satisfactory manner, also its mechanism is too delicate. Parts for it were not available in this operation.

The semi-trailer which carries the SCR-547 is too weak in the center. The one and one-half ton tractor with this trailer is underpowered for this use.

e. Amount of Antiaircraft Artillery.

It is recommended that in order to provide adequate protection antiaircraft units be employed as follows:

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For a division, a group of one gun and two automatic weapons battalions, one of which should be self-propelled.

For a corps, a brigade headquarters with one group of two or three gun battalions and one group of three automatic weapon battalions.

For an army, as many battalions as will be required for the defense of ports, airports, railheads, and landing beaches, with necessary group and brigade headquarters.

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1410