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THE OPERATIONS OF THE 60TH INFANTRY  
(9TH INFANTRY DIVISION) IN THE HURTTGEN FOREST,  
GERMANY, SEPTEMBER - OCTOBER 1944  
(RHINELAND CAMPAIGN)  
(Personal Experience of a Battalion Executive Officer)

Type of operation described: REGIMENT IN THE ATTACK

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ADVANCED INFANTRY OFFICERS CLASS NO I

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(Note: References above are very general and seem to be the only data published concerning the operation. (December 28 1947). Major John W. Mac Indoe, Whose name appears as a reference throughout this writing, was the S-3, 1st Battalion, 60th Infantry from the Meuse River through the Hurtgen Forest. He is considered to be a reliable reference because of the fact that his statements are made as a result of careful consideration of his personal experiences. After the war, Major Mac Indoe revisited the Hurtgen Forest and, with his personal notes and maps, reconstructed the battles fought therein while standing on the actual ground).

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INTRODUCTION  
The Effect (General)

This monograph covers the operation of the 60th Infantry, 9th Division, First United States Army, during its combat in the Hurtgen Forest, Germany, September - October 1944. There is nothing singular about the effect on the 60th Infantry of problems which were brought about chiefly by the nature of the forest itself. Other units operating in the forest during different periods, encountered the same problems, and reacted in much the same way. I believe, however, that each unit had problems which were the result of its own individual set of circumstances. This was the case with the 60th, and the circumstances were such as to directly affect the outcome of the combat. These events will be discussed preparatory to, and in connection with the discussion of the operations.

On the 19th of September 1944, the 60th Infantry entered the Hurtgen Forest (1) with the mission of attacking through the forest and siezing the Schmidt-Steckenborn area, the final goal being control of the Roer Dams. (2) On the 27th of October the 60th Infantry left the Hurtgen Forest, (3) greatly reduced in strength, (4) mission unaccomplished, (5) and proceeded to Camp Elsenborn, Belgium for a rest. Concerning this operation, the Germans, in their publication by the 183d Volks Grenadier Division, delivered themselves of this comment: "In combat in wooded area the American showed himself completely unfit." (6) V Corps, under whom the 9th Division was operating at the time of their relief, explained their need for relief rather briefly as follows: "The 9th Division had been in the line for sometime and needed rest and rehabilitation." (7) Obviously there is more to the situation than can be gleaned from either of these statements,

(1) A-1, p. 66; (2) A-2, p. 81; (3) A-1, p. 166; (4) Personal knowledge;  
(5) A-1, p. 166; (6) A-1, p. 166; (7) A-3, p. 281.

however true they may be. They do, in some respect, summarize the effect. They offer nothing of the cause and none of the details of the effect. I plan, now, to present these in turn. To do this, it is necessary to go back into the history of the unit a short way, and follow it through its succession of circumstances about which I have already commented.

#### THE CAUSE

On June 16, with rather amazing speed in the face of determined and strong enemy resistance, the 9th Division completed the isolation of the Cherbourg peninsula by cutting through from Utah beach to the opposite coast.(8)The 2d Battalion of the 60th Infantry was awarded the Distinguished unit Citation for its part in this operation, the citation reading in part: " \* \* \* the major contributing factor to the complete success of the Cherbourg Campaign." (9) The combat efficiency of the 60th was, in my opinion, as high then as it ever was or ever would be. With the same speed and effectiveness they participated in the attack to Cherbourg and in the final reduction of all organized forces on the peninsula. Apparently just as effective, they entered a concentrated portion of the line west of St Lo and prepared to assist in making the eventful breakthrough which has become famous. It was here that they suffered their first blow, however, in that some of the bombs which were delivered by an armada of 1800 (10) planes on the enemy front line, fell short into the 3d Battalion area, and crippled this unit. (11) In spite of this event, the regiment participated in the attack which became successful only by dint of unrelenting effort and hard blows on the part of all concerned. Casualties were heavy during the first few days, but became noticeably lighter as the fighting got out of the hedgerow country and the armor began to roll across France. Ensuing days were featured by long moves by vehicle (12) punctuated by short rear guard actions wherein the enemy would detach minor forces to hold temporarily and gain time for their main forces to withdraw. Company strengths were at a low

(8) A-2, p. 51; (9) A-2, p. 52; (10) Personal knowledge; (11) Personal knowledge; (12) A-2, p. 64.

level as a result of casualties and the fact that the unit was moving too fast for its replacements to catch up with it. (13) This state of affairs existed up to the time the Germans crossed the Meuse River and made their first determined stand on the other side.

The 60th Infantry reached the river south of Dinant (Map 1) late afternoon of 4 September 1944. Desiring to give the enemy as little time as possible in which to build up a defense, it crossed the night of 5-6 September, led by the 2d Battalion. All during the day of 6 September, fighting was severe. Communications were bad and information was slow coming in, making it difficult for the regimental commander to ascertain the situation. The 2d Battalion lost heavily and was able to maintain itself on the enemy side of the river only because the 1st and 3d Battalions on either flank were more successful in driving the enemy back. It wasn't until late morning of 7 September that the fog of battle had cleared away sufficiently for the regimental commander to take stock of his regiment. He found this situation: All battalions had lost heavily; the 1st Battalion was less than forty per cent full strength; (14) of the three rifle companies, two machine gun platoons, and part of the communication platoon which the 2d Battalion had used in the attack, only twenty five men total could be accounted for. (15) The 2d Battalion ceased temporarily to be an effective fighting force, having lost all its experienced leaders except one company commander and about four noncommissioned officers. It was deemed inadvisable at the time to further deplete the already dangerously weakened 1st and 3d Battalions by taking from them a framework of experienced leaders on which to build a new 2d Battalion. The 2d Battalion appointed leaders out of what they had left and of any likely material they found in the replacements

(13) Personal knowledge, Statement of Replacement Officer, 9th Division, Major John W. Mac Indoe, Dec 47, A-2, p. 65; (14) Statement of Major John W. Mac Indoe, former S-3 1st Bn, 60th Inf (Dec 47); (15) Personal knowledge, official oral report of CO 2d Bn to CO 60th Inf in presence of author (7 Sep 44), Statement of Captain Edwin J. Shuttleworth, former S-3, 2d Bn, 60th Inf (Aug 47).

which came to them. (16) The replacement stream for nearly the whole division was now temporarily diverted to this battalion. (17) Replacements came in bunches at irregular intervals and at odd places along the march which had now been resumed toward Germany. Most of the replacements received between the Meuse and the German border were converted from the anti aircraft artillery. (18) They all seemed to be good calibre men about whom there was nothing wrong except the fact that their training as infantry men did not seem to have been as extensive as other replacements the unit had received.

On the 9th of September, the Germans, after having fought bitterly at the Meuse, retired toward Germany, and the chase was on again. Now it was the 1st and 3d Battalions who were chasing, the 2d Battalion was only following. The key personnel of the 2d Battalion were frantically trying to form some sort of organization out of what appeared to be chaos. The 1st and 3d Battalions were now taking all the casualties and the 2d Battalion was taking all the replacements. The rapidity of the move made training out of the question except during a three day stay at Aywaille, Belgium, where the regiment waited for supplies to catch up. (Map 1) On the 13th of September the regiment broke up into task forces. The task force of which the 1st Battalion was the main element, proceeded via Spa, Sourbrodt, Elsenborn- Kalterherbourg to Hofen and Alzen where they were stopped short of the town. This battalion eventually took Hofen and Alzen by a flanking maneuver after the third had arrived there. The task force of which the 3d Battalion was the main element proceeded via Verviers, Eupen, Mutzenich, Monschau, finally capturing part of Hofen. The 2d Battalion followed the Third Battalion to Monschau (19) and took over the defense of the town

(16) Personal knowledge; (17) Statement of Major John W. Mac Indoe, former S-3, 1st Bn, 60th Inf (Dec 47), personal knowledge; (18) Personal knowledge; (19) Personal knowledge, Statement of Major John W. Mac Indoe, S-3, 1st Bn (Dec 47)

after the third had captured it on 15 September. The Second Battalion as part of an Infantry-Tank Destroyer task force remained at Monschau, in defensive positions until about the 4th of October. It was in actual contact with the enemy during this entire period. Training was in progress during this time but it could be only by units the size of a squad, and down, that could be taken out of the line without visibly weakening the defense. (20)

The regiment less the 2d Battalion moved on to the vicinity of Zweifall (Map 2) on the 19th of September, and from that point started its operations in the Hurtgen Forest. (21) The 2d Battalion turned over its defensive sector at Monschau to a cavalry unit and joined the rest of the regiment in the forest on 4 October. (22)

I have tried to bring out up to this point the fact that the 60th Infantry started on the invasion of the continent with a well trained unit, the result of its operations in the initial stages so proving; that it was in combat almost steadily from the time it started until the time it entered the forest; that the combat, for the most part, was exacting in its drain on energy and personnel. I now wish to point out further that very few of the personnel, including leaders, who started the campaign in Normandy with the regiment, were with it when it started to clear the Hurtgen Forest in Germany. So much for the cause.

#### THE EFFECT (DETAILED)

The Hurtgen Forest was considered by the enemy to be an obstacle. It covers an area about fifty square miles and stretches from the vicinity of Aachen on the north to Monschau on the south, to Duren on the east. (Map 1) It is not a virgin forest. Patches were planted at different times. The newer patches were planted irregularly and were thick with trees averaging from ten to fifty feet in height. Trees in the older patches

(20) Personal knowledge; (21) Statement of Major John W. Mac Indoe, S-3, 1st Bn, 60th Inf (10 Dec 47); (22) Personal knowledge.

were for the most part planted in regular rows and averaged in height from seventy five to one hundred feet. Visibility within the forest at mid day was not good; at night it was impossible due to the utter darkness. The troops were untrained in special measures of control, so, no night operations were attempted. The Germans made free use of anti personnel mines which were very difficult to pick up because the ground was covered with pine needles. (23) Anti tank mines were unnecessary except on the roads or the fire breaks which were interspersed throughout the forest at about two hundred yard intervals. The intervals between the trees were such that armor could not operate through them, but was confined to the passable fire breaks or the roads, both of which were few and far between. Conditions in the interior were such as to cause opposing forces to come within fifty yards of each other before either could discern a target at which to shoot. Main defenses of the Siegfried line ran through here and consisted for the most part of twelve to fourteen man pillboxes placed at strategic avenues of approach. Initially the Germans defended in strongly manned pillboxes. Later most of the defending forces defended from positions outside the boxes. The weather in September was cold, requiring that heavy clothing be worn at all times, especially at night. (24)

On September 19 the 3d Battalion set up a defensive screen commanding all the important road junctions to the north of Zweifall. (Map 2) The 1st Battalion arrived in darkness on the same date at a position three miles east of Zweifall and some five thousand yards removed from the third. From this position the 1st Battalion was to attack along the road toward Jagerhaus, swing around to the left and eventually capture Germeter thereby gaining possession of the road net work which was vital to the enemy as a means of supply. (25) The attack began on the 20th but was only moderately successful in that it gained about seven hundred yards. It appeared from the

(23) A-1, p.165; (24) Personal knowledge; (25) Statement of Major John W. Mac Indoe, former S-3, 1st Bn, 60th Inf (Dec 47)

action this day and from other attacks that the enemy line through the forest was spread thin, but that when a threat came enemy strength built up quickly in front of the attackers. It further appeared that, once in the forest, a separate force, as the 1st Battalion, could meet resistance by moving in nearly any direction. At any rate, on the 21st of September the attack was less successful, gaining only about five hundred yards, and on the 22d, after a very short gain, the battalion was hit by a strong counterattack which split the battalion in half, isolated Company A on the right, and was finally stopped by elements of Headquarters Company. (26) It is believed that the enemy was unaware of the tactical situation they had effected because they allowed time for the battalion to recover Company A and reorganize. In a somewhat surprised condition, the battalion attacked again on the 23d, regained the ground lost, and captured three pillboxes, but on the night of the 23d the enemy counterattacked using tanks up the fire breaks, and recaptured the pillboxes. It became evident at this time that the 1st Battalion was not going to clean out the forest by itself. Because of the difficulty or impossibility of getting armor to the desired place it could not be used. A battalion of Field Artillery was available for support but could only be fired three hundred yards ahead of friendly troops because of tree bursts, whereas the enemy was usually only fifty yards away. A reorganization of the battalion on the 24th showed that the average strength of the rifle companies was less than fifty. After turning over its sector to a combat Engineer Battalion, the 3d Battalion was brought down from the north, it being prudent to judge from the information on hand that there was no further need for them there. Its mission, however, was still a defensive one. It was to hold the left flank of the 1st Battalion (Map 2) who then could direct more of its effort to the enemy in front. With this safe guard and an added stimulus of twelve officer replacements, which had now started

(26) Statement of Major John W. Mac Indoe, former S-3, 1st Bn, 60th Inf  
(Dec 47)

coming again, and eighty enlisted men, (27) the 1st Battalion renewed the attack on the 24th but enemy armor and automatic small arms weapons stopped it after a gain of two hundred yards. The stimulus and the safe guard together were not enough to push this battalion through, and it again became obvious that something else had to be done. By way of trying something new, the 1st Battalion of the 39th Infantry (another regiment of the 9th Division) was brought in on the 25th on the right of the first (Map 2 ) and on the 26th this battalion and the 3d Battalion of the 60th attacked south. (Map 2 ) This operation cut the 1st Battalion, 60th Infantry out of the action and continued on to finally reach Jagerhaus, whereafter the 1st Battalion of the 39th returned to its unit. The 1st Battalion then withdrew a short distance and took up a defensive position facing east. On the 26th the 3d Battalion took up where the 1st left off, and got about the same results. Two attempts at gaining ground to the south east netted very minor success and it began to look like any further piecemeal attempts would only produce a repetition of what had gone before. The next attack was to be in stronger force, supported by Artillery, Armor and Air. From the 27th of September to the 5th of October the Hurtgen Forest front was stabilized except for extensive patrolling on both sides. During this period, however, the 1st Battalion was not allowed to grow stagnant. On the 1st of October it was dispatched north to the original site of the 3d Battalion to help the 298th Engineer Combat Battalion which had been occupying a widely spread defensive position, and which, as a result of a sudden enemy attack, had lost some ground. On the 2d this battalion retook the lost ground, reestablished the original positions, and returned to its reserve position in the forest. The 3d and 4th of October were used in preparing for an attack on the 5th. The 2d Battalion arrived in position shown on map on the night of the 4th. (28)

(27) Statement of Major John W. Mac Indoe, former S-3, 1st Bn, 60th Inf (Dec 47); (28)

Now, for the first time since 19 September the entire regiment was assembled as one unit in the forest which had become very distasteful for most of the organization. None the less it seemed heartening to all to see the 2d Battalion returned. It was now the strongest battalion, being about seventy five per cent full strength. (29) It was almost completely new and devoid of combat experience except for what very little it had gained in its passive defense of Monschau. The other two battalions were considerably reduced in size being only about fifty per cent of full strength. The second, being the strongest, was to be the spearhead of the attack which was planned for 5 October. The battalions lined up for battle as shown on Map 3. The second was to lead, attacking south east, objective; control of the road network 3500 yards SW of Genaster. (Map 3) The first was to follow to the right rear, mopping up: The third was to temporarily protect the right of the regiment from its positions around Jagerhaus. The whole attack was to be preceded by an air strike on the enemy positions by fighter bombers. The strike was originally scheduled to begin at 0800 5 October but inclement weather caused a postponement so the attack was postponed also. On 6 October at 1000 hours the strike materialized, and right on its heels the 2d Battalion jumped off with Company G on the right, F on the left, and E disposed to the left rear to protect the left flank, there being some two thousand yards distance between the left flank of the battalion and the nearest friendly unit. Despite the fact that the personnel of the battalion were surprised at the peculiarities of the forest, amazed at the actions of the enemy, and confused by combat in general, they managed to advance as a unit five hundred yards against resistance on the first day changing direction slightly so that they were facing south at days end. Artillery, which was active on both sides, was very effective because of the fact that it was nearly all tree bursts. It was very seldom that a shell burst on the ground. Three tanks were available for use by the assault battalion but (29) Personal knowledge.

were not used because there was no way to get them up to where they could be employed. There was a passable road which formed the left boundary, after the first day (Map 3) but before it could be used it had to be cleared of booby trap tank obstacles which were defended by small arms from the other side of the road. The advance of the battalion had put in its possession a passable fire break (Map 3) which ran parallel to the front. The only possible effective use of the tanks was to get them up this avenue from which they could poke into the trees far enough to get a shot at the enemy positions.

On the night of 6 October the 2d Battalion reported that they heard much tree chopping within the enemy positions. The morning of the 7th, when they reinstated the attack they discovered that the enemy had dug in deeply and covered their fox holes with logs. Artillery tree bursts failed to be effective against this type of emplacement, and artillery advantage now swung over to the enemy. After two successive attempts to move forward on the 7th the battalion commander employed E Company in a flanking move around the left flank. The maneuver succeeded in completely uncovering F Company (Map 3) but, further movement was definitely stopped, and positions remained as shown on map for the rest of the day. On the 8th, F Company moved from its uncovered position, around the line to the right flank to make an attack. This attack failed to gain any ground. To eject the enemy from its log covered fighting positions a large calibre direct fire weapon was needed. The battalion commander realized this and on the 6th took measures to get his three tanks into position where they could bring effective fire on the emplacements. He dispatched the three tanks accompanied by a platoon of engineers and a platoon of infantrymen down the left flank road with the mission of deploying in the front line fire break and assisting the attack by fire. This party had to capture the two road blocks, dismantle them, and generally fight every inch of the way. They arrived in the fire break late morning of the 8th. The 2d Battalion then reorganized and made fresh plans for the attack. (30)

(30) All above information from foot note (29) to (30) - personal experience and knowledge of the author.

When the 2d Battalion had reached the limit of its advance on the 6th of October the 1st Battalion attempted to move forward believing that such a move would relieve some of the pressure so that the second could continue its advance. Several such attempts were made but no ground whatsoever was gained. The night of 6-7 October the 1st Battalion swung around behind the second and at daylight on the 7th attacked in a new direction toward Germeter. (Map 4 ) A combination of surprise and tremendous drive netted the battalion one thousand yards on the first day of the attack. Having gained this momentum, it continued on the 8th and 9th cutting the road S from Germeter. On the 10th, the 1st Battalion did a complete right face, and again, catching the enemy unprepared, made another blasting drive in the new direction for 2500 yards finally capturing the road junction shown on map 4 .

On the 11th the 2d Battalion, supported by armor, began its drive. Since artillery was not effective on the enemy prepared positions, the battalion commander had it lifted so that it covered the enemy line of retreat some five hundred yards to the rear. The attack was successful in dislodging the enemy who then suffered heavy casualties passing through the artillery concentrations. This attack was finally stopped at the original objective on the 14th. (Map 4 ) (31)

Throughout all this action the 3d Battalion defended the vital road network which emanated from Jagerhaus. This network was important to the enemy as a route of communication and supply. Its importance was impressed on all concerned by the fact that orders pertaining to it came from First Army.

The road junction twenty five hundred yards south west of Germeter now held by the 1st Battalion was also important to the enemy for the same reasons. The viciousness with which the enemy tried to get it back attested to (31) Statement of Major Quentin Hardage, former CO 2d Bn, 60th Inf (Oct 44)

the fact that it hurt them to have it in our hands. In order to secure this road junction more definitely the 1st Battalion was ordered to advance about two hundred yards into the clearing, (Map 4 ) the near side of which formed the front line, and take a series of four pillboxes which commanded the roads. On the 11th, the battalion, supported by three tank destroyers and three tanks advanced into the clearing. The plan was for the tanks and Infantry to gain fire superiority over the enemy while the tank destroyers drove up to the enemy embrasures and at point blank range fired into them. When the troops moved out into the open, enemy automatic small arms fire became very heavy and the men were pinned down until dark. The first tank which advanced into the clearing was hit, knocked out, later captured and taken off by the enemy. The attack failed to gain any ground. The captured tank was later seen in running order firing back at our lines. (32)

On October 13 another attack was launched on the same positions. At this time there was one tank destroyer and two tanks available to make the attack, the other vehicles having been made inoperative by enemy action. At the time the attack was to begin it was discovered that one of the tanks would not start. This tank blocked the only opening into the clearing through which the tracked vehicles could enter, so the attack went on without the armor. Surprisingly enough this attack came nearer success than the previous one. The company commander of C Company with two of his men got up to and on one of the pillboxes and was trying in every way he could think of to gain entrance or to make the occupants surrender. The box remained completely buttoned up while fire from enemy outside continued unabated. The battalion had to withdraw to its original positions after suffering severe losses. (33)

On the 14th and 15th of October there was no action. In fact, except for minor skirmishes, there was no further offensive action for the 60th

(32) Statement of Major John W. Mac Indoe, former S-3, 1st Bn, 60th Inf (Dec 47); (33) Personal knowledge and experience.

Infantry in the Hurtgen Forest. On the 16th of October the 3d Battalion took over the 1st Battalion's sector and the first moved into reserve. This state of affairs existed until the 21st when the 1st Battalion was made part of a task force which occupied the original 3d Battalion screening sites to the north. (Map 2 ) On the 27th, the 60th Infantry was relieved by elements of the 28th Division. "The 9th Division had been in the line for some time and needed rest and rehabilitation."

#### ANALYSIS and CRITICISM

The combat efficiency of a unit depends on, among other things, the rate of loss of experienced soldiers coupled with the rate of assimilation of new ones. If this rate is fairly constant, the combat efficiency will also be fairly constant. The degree of efficiency will be determined, to a large extent, by the numbers involved. That is to say, an equilibrium will be established between the combat efficiency, and the losses and replacements involved. The equilibrium was destroyed for the 60th Infantry by the almost complete annihilation of the 2d Battalion at the Meuse River. The replacement system alone was inadequate to repair the damage done. Any measures taken to correct deficiencies caused by inordinate losses must include as a minimum: (1) Withdrawal from action. (2) Replacement of losses. (3) Thorough retraining.

Combat in wooded areas is generally recognized as a special operation just as is amphibious operation, or fighting in towns. No special training was conducted for the 60th Infantry as a whole, whereas the need for it was definitely indicated. For instance; the extreme darkness encountered at night was a handicap to the attacker because of the ease with which men could get lost both in location and direction. With training in special means of control, it could have been made to be an aide. A night attack might have prevented the enemy from covering their emplacements in front of the 2d Battalion. The enemy recognized and took advantage of our ignorance by conducting night operations against us, these usually netting

them ground or pillboxes they had just lost. Witness this statement of our adversaries: "In combat in wooded areas the American showed himself completely unfit."

Having proved quickly and unmistakably that piecemeal efforts at clearing the forest, or even pushing through it, were unprofitable, these efforts should have been abandoned in favor of coordinated attacks supported at least by normal arms, if not by special ones. The enemy counterattack of 22 September clearly showed, I think, that stronger resistance than had been anticipated was definitely an enemy potentiality.

The use of surprise and maneuver bore amazing results and should have been resorted to sooner. The success gained by the 1st Battalion every time it made a sudden change in direction more or less bore out the contention that originally this ground was lightly posted, but that once a threat appeared in the form of a commitment in a certain direction, the enemy gathered in front of it, and resistance stiffened.

When the enemy recaptured pillboxes, the take in prisoners was usually substantial. This fact tends to show that many of the attackers succumbed to the temptation to get in out of the cold, where they tended to become drowsy and otherwise unalert. Effective defense of these installations cannot be conducted from the inside because the embrasures face the wrong way. While we have them they are detriments which are comparatively easily recaptured. When the enemy gets them back, they become strong points which are just as effective as they were before they were originally captured.

#### LESSONS LEARNED

1. Captured enemy pillboxes should be demolished or otherwise disposed of so that they can never again be used by the enemy as strong points even if the ground is recaptured.
2. Troops about to undergo combat in wooded areas should receive special training so that they may overcome the peculiarities of such combat, which

will otherwise prove to be detriments.

3. All units should receive special training in night operations. Among other things, if you know how to operate in the dark yourself, you can better estimate the capabilities of the enemy with respect to darkness, and this may serve to avoid being surprised.

4. Combat in forests favors the defender. The woods limit the use of tanks and other large calibre direct fire weapons. The defenders have all the material at hand for individual, effective cover.

5. Artillery in wooded area combat favors the defender especially in thick woods. Artillery shells are nearly always tree burst missiles against which log covered emplacements are effective. The attackers, on the other hand, must move out of their shelters to attack, and not only enemy, but sometimes friendly artillery takes a terrific toll.

6. While not strictly a lesson learned in this operation, it was confirmed and reemphasized that surprise is a deadly weapon no matter on whose side it lies.

7. Sudden changes in maneuver are possible because of the strictly limited observation of the enemy. Such changes increase the probability of surprise.

8. A coordinated effort is nearly always better than a piecemeal one, especially if the element of surprise has been lost.

9. Pillboxes are comparatively blind and need additional observation and defense from the outside whether they face in the right direction or not.

10. Tanks, if they can be gotten into firing positions, are very effective in overcoming wooded shelter positions.

11. When combat efficiency of a unit is too low to make it effective as a fighting force, the correction is not replacements alone, but replacements and surcease from combat for training purposes until such time as the efficiency is raised.

12. Artillery concentrations along a line of retreat of a displaced enemy, especially in wooded areas, cause numerous casualties.