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INFANTRY IN THE DEFENSE

Translated at the Army War College
From a French Document

Exp. 1917

JULY, 1917

UNIVERSITY OF CALIFORNIA
AT LOS ANGELES

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WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

WAR DEPARTMENT,
Document No. 642.
Office of The Adjutant General.

WAR DEPARTMENT,
WASHINGTON, *August 1, 1917.*

The following pamphlet on Infantry in the Defense is published for the information of all concerned.

[062.1, A. G. O.]

BY ORDER OF THE SECRETARY OF WAR:

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The Adjutant General.

WAR DEPARTMENT,
THE ADJUTANT GENERAL'S OFFICE,
WASHINGTON, *June 19, 1917.*

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BY ORDER OF THE SECRETARY OF WAR:

H. P. McCAIN,
The Adjutant General.

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INFANTRY IN THE DEFENSE.

As we said in the last lecture, the principal duty of the infantry of a sector is to defend that part of the front which has been assigned to it.

In much the same way, in open warfare, we must stand ready to defend ourselves as soon as our advance ceases, whether it be voluntarily or at the instance of the enemy.

We shall study today, therefore, the conditions under which the infantry can and should defend itself.

Only an active defense brings results. We have already shown, in speaking of the method of action employed by the infantry, that *the defense must be active*, must be based not only upon the employment of fire but also upon the employment of action. This is the fundamental principle which dominates the whole question, and with which the infantry must be imbued.

Our former regulations are therefore to be modified so as to read:

“The infantry placed on the defensive will not make untimely or unjustifiable attacks which would run the risk of lessening its capacity for resistance and expose it to a check whose consequences might be serious.” (Art. 112 of the Field Service.)

Or again:

“Fire is the only means of strife for the units whose mission holds them momentarily at a given point.” (Art. 337, Manœver Regulations.)

The experience of war has clearly shown, as the note from General Headquarters December 5, 1915, stated, that “the only definite methods of procedure really practical are: Fire and counter offensive; passive defense having lost all its value.”

Before studying the defense in position warfare it is not without interest to examine what it might mean in open warfare.

I. THE DEFENSE IN OPEN WARFARE.

Our former regulations did not anticipate the form that war has taken since the immobilization of the fronts, but they contemplated certain units of the battle front being forced to assume, momentarily, a defensive attitude. We therefore find in them a certain number of principles that always hold and that are applicable to position warfare as well as to open warfare.

First. "A unit of infantry," says the Maneuver Regulations, whose mission is to hold a certain point *must never abandon it* without an order. It must resist to the very last; each man should be killed at his post rather than yield ground. If the enemy succeeds in driving the unit back, the latter must use every available resource to regain the ground lost."

Second. "The unit receives an *order of defense*, defining the task to be performed, the part of the terrain upon which the resistance is to be organized, the conditions of this organization, the probable time available, the material means put at the disposal of the unit, the location of the command post of the superior, and the communications to be established, whether with this post or with the neighboring units and the artillery."

Third. Preparation for the defensive. It consists of—

- (a) The reconnaissances of positions.
- (b) The defensive organization of these positions.
- (c) The distribution of troops.
- (d) The measures of security to be taken.

These are, in fact, the same operations as those of which we spoke with regard to the outposts, but more developed, because there is generally more time.

(a) *The reconnaissances* have a bearing, not only upon the terrain which the infantry is to occupy, but also upon that which the adversary is obliged to pass through in order to attack the position to be occupied.

The defensive position is chosen in such a way that the artillery can support its infantry efficiently, and that the numbers necessary to occupy it may be as low as possible.

The reconnaissance of a position is made to determine the accidents of the ground to be occupied and the measures to be taken to flank the intervals, to investigate the approaches which might cover the enemy's advance and the necessary passages, to determine what part of the terrain must be occupied to check the attack effectively by fire, and finally, to prepare the counter

attacks and even the resumption of the offensive in accordance with the facilities which the terrain offers.

Reconnaissance thus permits the coordination of preparations for defense of the front by the creation or improvement of the *strong points* chosen judiciously and grouped as *centers of resistance*. The trace of these elements ought to permit them to flank each other, to escape the notice of the enemy's artillery, to furnish powerful fire up to 800 and 1,000 meters, "a distance which corresponds to the actually effective range of the rifle." If the field of fire is more restricted, it is necessary to multiply the obstacles, the auxiliary defenses, the flanking defenses. The infantry must, by its fire, force the enemy to remain as long as possible upon those parts of the terrain which the artillery can most effectively sweep.

"The lines occupied in front of the main position and the advanced positions are, on general principles, to be avoided. They lead to the scattering of the forces and to partial repulses of such a nature as to weaken the morale of the troops maintained upon the line of resistance.

(b) "*The defensive organization* (the preparation for the defense) of the positions chosen is confided to the infantry whose duty it is to occupy them, reinforced in case of necessity by detachments of the engineers.

"This preparation for the defense ought to be pursued in accordance with a *general plan*, carried out progressively and advanced as far as the time and means at their disposal will permit.

"A methodical putting into a state of defense includes the organization of the trenches where the troops will be placed, of the protected lines of communications, of the telephonic communications, and, in case of necessity, of the successive lines which permit the arresting of a first success and the preparation of the counter attacks. * * * The best works are the most simple, those which make use of the accidents of the terrain, which escape the view of the enemy or are difficult to locate. They should permit the occupants to have extended view, shelter them from fire and afford them means of taking positions suited to the execution of fire. The trenches ought to be deep and narrow, the excavated earth being hidden from sight. Trenches can be simulated to attract the enemy's fire upon the terrain not occupied by the troops of the defense." (Arts. 343 and 344 of the Maneuver Regulations.)

The infantry ought, therefore, to clear the field of fire and mark the ranges carefully.

The machine guns are placed in such a way as to sweep the parts of the terrain which the enemy is forced to pass. They are likewise used to flank the important parts of the front.

Finally, searchlights are established for the night.

(e) *The distribution of the troops* follows from the organization of the terrain. "A solid and judicious organization permits the reduction of the numbers necessary to be employed upon the front and the maintenance of more men in the rear for the counter attacks."

The troops held in the rear constitute the *reinforcements* (platoons, company) and the *troops available for service* (battalion and superior units). Only the battalions and stronger units are able to combine the defense and the counter attack. The rôle assigned to the company remains simply defensive or offensive.

(d) *The measures of security* to be taken consist of sending forward (in advance of the position) either *observing elements* to give warning of the approach of the enemy, or security detachments of all arms, whose duty it is to become informed concerning the direction of the enemy's march and to delay him by a first resistance.

Fourth. *Method of carrying out the defense.*—When the attack is planned the units whose duty it is to defend the front occupy their combat or firing positions in order to be ready to open fire.

Fire is opened at the captain's command and is directed by the platoon leaders. It is opened as soon as it can be effective, and from the very beginning must be violent enough to force the enemy to halt, or at least to advance only very slowly.

"Sheltered from fire, hidden from view, and thoroughly familiar with the range, the defensive troops, even when stationed a great distance away, can inflict serious losses upon the enemy.

"Under certain circumstances it may be to their interest to open sudden fire at such a distance as to produce the maximum effect.

"It is generally suspended while the enemy's infantry is halted and sheltered; it is resumed as soon as they advance again."

The artillery may intervene by long-range fire, but it should first and foremost reserve for itself the possibility of firing upon

the attacking infantry when the latter offers vulnerable objectives. "In case of necessity batteries or portions of batteries are hidden until the last moment to surprise the assaulting columns by flanking fire." (Art. 114 of the Field Service.)

As to the *reinforcements* and *troops available*, their duty is either to support the elements engaged at the front or to make the counter attack.

In the first case, they mingle with these elements or establish themselves in their intervals to increase the intensity of the fire.

In the second case, they furnish *counter attacks*, usually conforming to a preconceived plan, independent of the incidents of the fight, and resulting from the necessity of the utilization of the terrain which lends itself best to their action. The order for the counter attack should fix the line to be attained and not to be exceeded. The most favorable moment is that one in which the enemy, having come to within a short distance, is obliged to discontinue his artillery fire or to increase its range.

"Held ready under cover, usually behind the intervals of the line of resistance, the counter attack attempts to debouch *suddenly* and to advance resolutely, combining fire and movement under the conditions prearranged for the attack."

The counter attacks are the work of the local commanding officer or of the superior officer; they are organized with a view to assuring the infantry that executes them of the cooperation of the other arms.

If the enemy succeeds in taking possession of a part of the line, the mission of all should be to prepare a strong counter-offensive to drive them from the territory already conquered. This is executed as soon as the units have been reorganized and strengthened by the available troops that are in the vicinity.

The greater part of the principles incorporated in the Field Service and the Maneuver Regulations are, evidently, perfectly applicable to the present time. They have been verified by the experience of this war, and bear in embryo the majority of the modern ideas. If the infantry had known them well and applied them well from the beginning, it would have adapted itself very easily to trench warfare; but it must be confessed that it had scarcely found its bearings in this respect.

To bring these regulations absolutely up to date, insistence upon two points would suffice:

The necessity for the cooperation of artillery with infantry and the means of accomplishing this.

The previous preparation for counter attacks, in such a manner that they may be as immediate as possible.

II. DEFENSE IN TRENCH WARFARE.

The main differences, for troops on the defensive, between open warfare and trench warfare are that in the latter—

(a) The assailant is at hand; he can attack from near by, a feature which does away with the difficulties of the approach march and facilitates a sudden attack.

(b) The two adversaries are provided with much more powerful means; offensive means, characterized by an artillery of large caliber, which could not intervene in open warfare; defensive means created by the semipermanent fortification.

Under these conditions, the problem that is offered for the defense is much more delicate than that offered in open warfare. To consider it more closely, we must first of all analyze the general methods employed by the attack.

(A) *Methods employed by the attack.*—Experience acquired up to the present time enables us to distinguish two entirely different methods of attack:

Surprise attack;

Attack preceded by a longer or shorter artillery preparation.

The sudden or surprise attack is generally possible only upon a limited front, and with relatively weak numbers. It presupposes that the auxiliary defenses are destroyed, which is the exceptional case.

As to the methodical attack, preceded by abundant preparations on the part of the artillery and sometimes accompanied by explosions of mines, by jets of burning liquids, or by hurling of asphyxiating gas, it can not escape the vigilance of the defense. This is the method that has hitherto been employed for the important attacks, on the part of both the Germans and the French.

Now, what takes place during this preparation for the attack? The bombardment, executed by considerable artillery, often extends to a depth of several kilometers. Its purpose is to tear up all the terrain on which the projectiles actually fall, to destroy the auxiliary defenses and everything else not in bomb-proofs. The material defenses of the terrain are thus more or less destroyed.

As to the personnel which is able to escape destruction, they become the object of attacks by clouds of gas or by special shells.

The defensive artillery is likewise the target for destructive fire, which is sometimes very effective.

Cantonments, bivouacs, camps, and roads are rendered untenable or impracticable, by night as well as by day.

Finally, the telephone lines, both those in the air and those insufficiently protected by earth, are invariably broken.

Although the probable zone of attack chosen by the énémy can be anticipated, one does not usually succeed in opposing him with artillery in like quantity.

Hence, it results that the attack of the infantry, if it has been well prepared, finds at the moment of attack only a terrain demolished and almost emptied of the enemy; it succeeds almost always in taking possession of the first lines. It is a matter of course.

The defensive infantry situated in the first lines is then in a very critical situation if it has not previously made preparations with a view to resisting this bombardment and the following assault.

(B) *Principles of the defense.*—The attack, as we have said, has the advantage of being able to unite means superior to those of the defense, and, as we shall see immediately, to produce a certain effect of surprise.

On the other hand, the defense has the advantage over the attack of being perfectly familiar with the terrain over which the assailant intends to rush, and of being able to organize at leisure and employ strategem at will. It has, therefore, trump cards in its play, too; it is only a question of knowing how to employ them.

These trump cards are, as in open warfare:

Fortification;

Fire effect;

Movement;

which must be exploited in a more complete fashion and to a degree still more intense.

The problem for the defense is the following: To succeed, after a bombardment which has destroyed the superficial arrangements, in opposing the enemy with a serious resistance at the very moment when he is making his attacks.

The fortification.—What remains of the defensive arrangements after they have been subjected to a powerful preparation

by artillery? The shelters, when they are buried sufficiently deep; the wire entanglements, at least in part, when the wire is thick enough; some flanking defenses, when they are sufficiently powerful or hidden; some telephone lines, when they are buried deep enough. All the rest is almost leveled, and no longer presents anything but a series of shell craters, with here and there some ends of trenches.

One can imagine, then, that the garrison that is well protected can support the bombardment without too much damage and be prepared, at the moment of assault, to man the shell craters or what remains of the trenches and to drive back the enemy by fire.

One condition is, however, still indispensable to make this result certain; that is, that the garrison in its dugouts can be warned in time of the moment of the assault. Without this warning it is surprised, destroyed, or made prisoner.

It is an actual fact that the attack neglects nothing to obtain a *sûrprise*. The artillery preparation for the infantry attack is to a large extent included therein. After executing several false attacks in succession, the artillery, at the moment of the attack, extends its fire only at the last minute, in such a way as to permit the infantry to reach the enemy's position without being seen and to arrive at the dugout before the arrangements for the fight have been made by the enemy.

From this arises the necessity of the lookouts to anticipate the launching of the attack, or an emission of gas not only in the trench or its vicinity but also at the dugout itself, playing for the garrison the same rôle that a patrolman does for the police.

Under these conditions the semipermanent fortification must have the means of foiling the artillery preparations—that is to say, the vital parts of the defense, of which I spoke to you apropos of the plan of the trench works, must be capable of resisting the bombardment. These means are:

First. Good shelters, sufficiently deep to be really bombproof, and provided with two and even three outlets.

Second. Wire entanglements, as wide as possible, especially in the rear of the first trench, and made up of rows of from 8 to 10 meters wide, separated by passages of equal width.

Third. Armored shelters for lookouts, permitting watch of the enemy's infantry and warning of the garrison in the dugouts at any time desired.

Fourth. Flanking defenses, first of all perfectly hidden, and, secondly, as powerful as possible.

Fifth. Finally, telephonic communications, buried 2 meters deep.

If one succeeds in endowing the defense with this essential organization, it will happen, if all works as is desired, that the attack, a little after it is launched, will be received by the fire of the flanking defenses and by that of the garrisons that have emerged from their dugouts; perhaps they will even throw themselves on certain points of the auxiliary defenses that have not been destroyed; finally, the commander will be warned and informed in time.

There will be found in the note from General Headquarters, under date of August 26, 1916, some excellent indications on the subject of improvements to be made in our defensive organizations.

Fire effect.—The defense, having succeeded in preserving at least a part of its forces from destruction, tries at once to check the attack by fire; barrage fire of the artillery, oblique or enfilade fire of the flanking defenses, fire at will on the part of the light infantrymen, uninterrupted fire on the part of the automatic rifles, barrage fire with hand grenades or rifles.

If the infantry has not time to arrive at the trenches before the enemy, it lies in ambush by groups in the shell holes, rapidly establishes barrages in the trenches around its shelters, and operates again by fire.

It is not at all necessary that the range of the infantry fire be extensive. "The employment of an obstacle (auxiliary defenses)," say the instructions of the 8th of January, "which holds the enemy under direct and, especially, enfilading fire, makes it possible to get along with a reduced range. The infantry can then occupy positions near the enemy which at first appeared unfavorable."

Experience has actually proved that a range of 200 meters is absolutely sufficient from a defensive point of view.

Movement.—Finally the defense makes use of one more means—movement—that is, the *counter attack*.

It is now clearly demonstrated that in order to be effective the counter attack must be *immediate*. It is absolutely necessary, if the enemy succeeds in putting foot in our trenches, that he be met with a counter attack before he can get firmly established there, a fact that presupposes that the force charged with this mission is already in position and ready.

In fact, we must not imagine that we can bring up from the rear of any particular time a reserve force through the very dense barrages put down by the enemy; we waste precious time and suffer very serious losses.

It is therefore necessary to have the troops intended to make the counter attack be placed in advance in the immediate vicinity of the zone where it is expected that they will have to operate.

We are thus induced to establish *numerous partial reserve forces*, apportioned along the front, at the disposal of the battalion chiefs and of the colonels, lessening the strength of the reserves of the brigade and of the division which always arrive too late and in their moving sustain considerable losses.

The trenches for these troops will be chosen in the terrain lending itself best to the play of the counter attacks, according to a *plan previously established*, from which there will result the organization necessary to facilitate their action.

If it is desired that the counter attack be immediate, it is necessary then that the force that has this in charge—

First, be placed in advance near at hand;

Second, be established according to a preconceived plan.

In case these local counter attacks should not succeed in stemming the attack and in carrying it out of our trenches, it will be necessary to call on the reserves of the division, of the army corps, of the army, situated farther back in the rear, to offer offensive returns or even a counter offensive.

These operations should be executed without delay, and at least on the day following the one on which the terrain was lost; they are conducted in the manner of a regular attack—that is to say, prepared and assisted by the artillery.

(C) *The plan of defense.*—These principles, sanctioned by experience and by several instructions from General Headquarters, should serve as a basis for the arrangements to be made in every defensive sector; that is, in the establishment of the plan of defense of each division.

The plan, as we stated in the preceding lecture, is established in accordance with the orders in the note from General Headquarters based on the experiences at Verdun.

Its object is to fix—

The distribution and the rôle of the troops occupying the sector.

The necessary organization of the terrain.

The plan to adopt in case of attack.

The extracts from this plan communicated to the troops are made under the form of *orders in case of alarm*, established in advance, and they should be perfectly familiar to the men who are to carry them out.

Thanks to this document, each new unit is immediately and easily informed of the sector that it occupies, of the rôle that it is to play therein, and of the means that it is to employ.

To permit the division to establish this plan, the commander of the army corps should fix—

First. *The mission of the division*, the extent in depth of the positions that it is to maintain at any price, and, if necessary, the important points of the positions in the rear that it must hold to facilitate the counter offensive.

Second. *The strength of the troops of the reinforcement* (infantry and artillery) which might eventually be placed at the disposal of the division with a view to the counter offensive, with an indication of the zones where they will be stationed.

The preparation of the counter offensives is the duty of the army corps by virtue of the importance of the troops put into action (one or several divisions).

Third. *The zones of the counter attack* to be established, as well as the troops to be devoted to it.

The plan of defense established by the division can be divided into four parts:

First part: General outline of the establishment of the division sector.

Second part: Plan of defense, properly speaking.

Third part: Plan of action of the artillery (as a reminder).

Fourth part: Additional maps.

In order to have a clear understanding of the mechanism of the infantry in the defense, it is necessary to study in some detail the first two parts of this plan.

GENERAL OUTLINE OF THE ESTABLISHMENT OF THE DIVISION SECTOR.

There will be special lectures on the method of conceiving and realizing a defensive establishment. I shall therefore merely sum up the conclusions.

Every defensive organization has as its object:

(a) Resisting, at least in its important parts, the strongest bombardments in such a way as to permit the defender to repel the attack of the enemy.

(b) Economizing the forces employed in the first line for the advantage of the reserves.

(c) Facilitating the offensive employment of the reserves.

A defensive organization is usually composed of several positions, each of them being far enough distant from the preceding one to avoid the bombardment by the artillery directed upon this latter.

Each of these positions should be echeloned in depth in such a manner as to give full play to the reserves, and to utilize the terrain and the resources of the fortification in such a way as to force the enemy to fight in a zone which is favorable to us.

We need not discuss the necessity for continuous lines of trenches. Isolated supporting points, easily located, are only easily destroyed shell traps, and the absence of continuous trenches favors infiltration. The supporting point is not, however, suppressed by the continuous line, but it should be integral with the network of the trenches and communication trenches instead of being isolated.

The material organization of a sector should therefore take account, above all—

First, of the importance of giving to the organizations necessary for the defense shelters, wire entanglements, shelters for the lookouts, observation stations, flanking defenses, and buried telephone communications.

Second, of making necessary arrangements with a view to counter attacks and counter offensive—shelters, communication trenches or approaches, passages in the wire entanglements, observation stations for the commanders, groups of machine guns flanking each other, etc.

Third, of the necessity for flanking defenses by machine guns and automatic rifles, echeloned in depth and placed either in isolated posts or in well-hidden positions outside of the trench line.¹

Fourth, of defenses on the reverse slopes, especially for the second and third lines of each position.

¹ There can be found in the instructions of the General Headquarters, Nov. 24, 1915, upon the tactical use of the machine guns, and of those of 13th of February, 1916, upon the employment of the automatic rifle, all the details relative to the use of these arms, which would be too long to give here.

PLAN OF DEFENSE.

The second part of the plan consists essentially of the apportionment of troops, the rôle of the troops, and their conduct in case of attack.

It is based upon the follow general principles, mentioned in the note on the experiences of Verdun :

(a) The defense is made in depth, upon the successive positions, which admit of several lines.

(b) No force charged with the defense of a portion of a terrain ever abandons it, no matter what happens.

(c) All terrain lost is retaken by a counter attack executed by troops reserved for this purpose.

(d) Everything should be planned in order that the counter attack may be immediate—that is, may be at hand and launched immediately after the success of the enemy's attack.

As far as the rôle of the defense troops is concerned, it has long been the idea that no "single inch of ground" was to be "lost" at any price. This action elsewhere imposed by the commander has induced those carrying it out to accumulate the greater portion of their forces in the first line at the least sign of an attack, with the purpose of preventing the enemy from getting a footing there.

That was an error. The more troops placed in the first-line trenches before the attack, the more destructive does the bombardment become, and the lower the morale of the troops, so that at the moment of the assault the enemy has nothing to do but take prisoners; moreover, there is no one, or almost no one, to defend the second and third lines.

We have said, in effect, and we reiterate, that an infantry attack, well prepared by the artillery, almost always succeeds in gaining possession of the first lines.

We must therefore find a means of losing the fewest men possible during the bombardment and of driving the enemy from our first line as soon as possible, if he has succeeded in penetrating to that point.

The conclusion is: In the first place, we must leave in the first line only the minimum effective force—lookouts, machine gunners, automatic riflemen—whose duty it is to get information and to furnish a first resistance in case of a surprise attack. This

means replacing, as far as possible, the man by the machine. In the second place, we must echelon the reserve forces in the rear.

The *disposition* of the troops should, therefore, be made *in depth* and be based upon the offensive use of the reserves.

If it has proved impossible to break the attack, it must be repelled by movement. Thus the fundamental principle of the attack is respected—"not to lose a single inch of ground"—but by counter attack, a means quite different from merely reinforcing the first line.

It is to be noted, however, that the different conditions of trench warfare lead us to the same conclusions as those based on open warfare. It is a fact that we here touch principles which are always true, no matter what may be the form assumed by the war. Recall what we said concerning the relative importance of fire and action; the one is a powerful and indispensable element of preparation, but one having only a material action; the other, an element of execution having a moral action, and so important that it can not be left out of the conflict. This is the proof.

But, to continue, the resemblance between open warfare and trench warfare will be still more striking.

A note from General Headquarters, following our offensive at Champagne in September, 1915, says, in effect: "A defensive situation ought to be treated according to the method which has been accepted in our army up to the beginning of the war, and which consists in checking the attack by the most appropriate means but with a minimum of force, then to combat it by a counteroffensive executed with the maximum of means. It is a question—

"First, of rendering the front safe by forces reduced to the minimum; these forces constitute in reality the security of the armies stationed in position.

"Second, of echeloning in the rear in depth the reserves of the army corps, the army, the group of the armies, distributed in such a manner as to be able to be directed rapidly upon the points that are threatened, and maintained in the best military and instructive condition, to be ready at any time for offensive action."

As to the troops of the first line, whose special duty is the security of the line, they are to detach some fractions of the service of the advance posts, in the advanced trenches, or

"*trenches of the advance posts*," in immediate contact with the enemy, to insure the security of the main body of the forces of the first line and to shield them from a sudden attack. This main body of forces will itself be placed in depth ready to furnish counter attacks and counter offensives.

"To obtain a judicious application of these orders," adds the same note, "it is necessary to inspire the echelons anew with the idea of security that a very close contact with the enemy for several months has caused them to lose sight of."

And thus we return to the orders of the Field Service concerning the advance posts, here troops of the first line.

First. *The elements of observation* represented by the fractions that occupy the first line of trenches—small garrisons, sections furnishing lookouts, machine gunners, automatic riflemen—are charged not only with giving information, but also with offering resistance by fire, for we must always fear sudden attack (by assault or gas).

Second. *The elements of resistance* or reinforcements represented by the main body of the first-line companies and a certain number of machine guns are charged with offering resistance by fire, either in the first-line trenches, if they can reach them, or in the second line.

Third. *The reserves* of the battalion, or of the regiment, must be near enough to the front to be able to make immediate counterattacks (one company, two companies, one battalion at most).

As to the reserves of the brigade or division, they are more distant, and are intended for counteroffensive; that is, for real attacks, which should be carefully prepared by the artillery.

Thus we find in the organization of a position:

The line of observation, or first line;

The line of resistance, or line of support;

The line of redoubts, or points of assembly, called also the line of counterattacks. (Note of General Headquarters under date of Aug. 26, 1916.)

The following are the principles which should regulate the division and rôle of the troops:

Disposition in depth;

The smallest number of men possible in the first line for observation and a first resistance;

As great a number of men as possible in reserve, either to reinforce the resistance or especially to make counter attacks and counter offensives.

In so far as the manner of holding a position by the troops of the first line is concerned, we must distinguish two cases:

First case: Surprise attack. It can be made day or night when the wires are destroyed at certain points, without preliminary bombardment or after a short bombardment.

If the lookouts' service is well performed and if the flanking defenses are in good working order, the attack should be repulsed by fire, without any need of cooperation on the part of the artillery.

The flanking machine gunners and automatic riflemen being intact, should actually do their work normally, and be reinforced by the fire of the main part of the companies of the first line charged with resistance.

Second case: An attack preceded by a preparation by artillery. If we could prevent the attack from penetrating into our trenches, this would be the best solution, as it is always easier and less costly to guard than to retake a line. With this in view, the artillery should respond to the preparatory fire by a fire of counter preparation (with heavy howitzers, if possible) upon the first line of the enemy's trenches which we know to be full at the moment of an attack.

It will certainly inflict perceptible losses upon the enemy, but still will not prevent them, when the time arrives, from rushing forward to the assault. It will then try to stop them by barrages, while the machine guns and automatic rifles will enter into action, soon supported by the fire of the companies of the first line who have come out of their dugouts (rifle fire, barrage with hand grenades and rifles), while the troops of the counter attack make ready to advance.

But this presupposes that the artillery and infantry have been warned of the exact moment when the enemy is coming out of his trenches. Experience, however, proves that this is the most difficult point of the question, and this for two reasons: The lookouts, who are men chosen from among the most courageous and the most dependable, sustain losses and may be weakened by such a bombardment; then, the most conscientious observation may be baffled by the cloud of dust and the smoke caused by the bursting of the shells.

No matter what may be the difficulties to be overcome, everything depends upon the service of the lookouts, which, therefore, assumes the utmost importance. Therefore it is necessary to watch very carefully, no matter how violent the bombard-

ment may be, in order to be certain that at any particular moment there may be warning of an assault or of a gas cloud.

The pamphlet for the instruction of the rifleman says on this subject :

“The lookouts remain constantly at their posts, even during the most violent bombardment. They are relieved very frequently (about every 10 minutes during the bombardment). The noncommissioned officers assure themselves frequently that the lookouts are vigilant.”

One must use his wits in each particular case to find the best means of procedure for giving the alarm :

Armored shelters for the lookouts at points having the best views ;

Flank lookouts under cover of the slope ;

Lookouts in an observation station placed in the rear ;

Finally, signals agreed upon from aircraft.

More will be said on this subject when we study the means of liaison.

No matter what is done, it may happen that the main part of the companies of the first line, by coming out of the shelters too late, do not succeed in occupying their combat positions, which have already fallen into the hands of the enemy. These companies should then rapidly organized for themselves a *center of resistance* around their shelters, in the craters, and with the aid of the barrages improvised in the connecting trenches while waiting to be rescued by the counter attack.

Even if the first wave has passed them, the situation is far from being hopeless. They should not busy themselves with these first waves, which will be accounted for by the troops of the counter attack ; they must concentrate all their efforts upon the wave of moppers-up and the enemy's supports, which they must try to stop at any cost. If they succeed in this, the first wave already passed will be completely cut off and will soon be obliged to surrender.

It is often of an advantage for the commander of the company of the first line to reserve for his own use a picked group of grenadiers, that he can send at any given moment, either to the point that is most seriously threatened or to that point upon which he wishes to strengthen his resistance. In fact, the best means to utilize in this case is the grenade, the correct weapon for the Infantry to use in close combat. Barrages may be executed at 25 meters by placing a man every 10 meters with

the offensive, or one man every 15 meters with the defensive grenade.

It is of primary importance to be able to leave the dugouts.

In order that the debouch from the dugouts may be executed rapidly, every man must keep sight of his equipment and constantly have his arms within reach. The different exits are apportioned in advance among the groups, who must know perfectly their particular duties immediately after the sortie, whether the enemy has not yet attained the position or has already penetrated, as well as the route to the combat positions.

Moreover, as it is impossible to have the total number constantly on the qui vive during a preparation which may last a long time, a group of a few men opposite each exit should be *ready to turn out at a moment's notice*. It is from this piquet that a man is selected to go out from time to time to observe whether the enemy is extending his fire.¹

To sum up, if the assailant is met by the defender upon the parapet the attack is almost certain to fail; on the contrary, if the assailant anticipates the defenders at the entrance of their dugouts the attack has the greatest possible chance of success. But it is a question of seconds, and not of minutes. Accordingly nothing should be left to improvisation; there should exist a precise organization, and very clear orders, familiar to everybody, applied frequently, carried out to the least details.

Finally, the troops reserved for the counterattacks take the same precautions as the reinforcements during the bombardment and at the moment of the attack. Their order indicates the particular rôle to be played, the advance toward the positions to be occupied and routes to follow (carefully marked out and reconnoitered in advance), the direction of the counterattack, the line not to be passed, the combination of these movements with the fire of certain flanking defenses, etc. These troops are at the disposal of the battalion commanders and colonels, who are really the soul of the defense.

From all the preceding it results that, if the organization of the terrain has been well understood, the effectiveness of the defense depends:

First. Upon the immediate knowledge of the moment when the enemy issues from his trenches or attempts a gas attack.

¹ There will be found in the Manual for Chiefs of Platoon (p. 371) a scheme of construction of dugout exits, which can be used to advantage.

Second. Upon the rapidity of the debouch from the dugouts.

Third. Upon the energy and instantaneousness of the action:

"Numerous resistances," says the Manual for Platoon Commanders, "that have been successful in spite of the accumulation of formidable means, have proved that valorous defenders, even in small numbers, are still able, at the moment of the assault, to occupy their ruined trenches and stop the enemy there. What the artillery can accomplish is the diminution of the material means and of the morale of the defenders, not their complete destruction. A soldier's spiritual power of resistance remains superior to any material effect whatever. Every soldier, therefore, should submit to the bombardment with stoicism, and say to himself that if he escapes he is certain, with the aid of some uninjured comrades and machine guns, to mow down the ranks of the enemy, provided that he can reach his trench or the shell holes that have replaced it in time.

"A man should never give himself up to the first disagreeable impression that he experiences when an enemy has broken through the lines to the right and left of his position, for the enemy also has upon his flanks and in his rear organizations which are still holding their positions. The enemy's local success has, in reality, inclosed him in a fire pocket which should close in on him, and from which he can not escape if our men keep up their courage.

"The defender must primarily be resolute in fighting to the end, and must not give up the struggle because it seems to him that his neighbors have the worst of it; beyond these neighbors there are others who are holding their ground and who will come to his aid. A man must never judge a fight by what he sees in his immediate vicinity, but have confidence in his battalion and in his regiment.

"No single inch of terrain should be voluntarily abandoned, no matter what the circumstances may be. A force, even when surrounded, should resist to the very last man without falling back, the sacrifice of the individual being the very condition of the victory."

Such are the essential principles and the general ideas which should be primary in the establishment of a plan of defense and which one should always have present in mind when he makes a visit to a sector. The force is really ready to receive the enemy's attack only if it has anticipated all the acts of the

defense to the least detail, and only if it is morally prepared for the rôle which it is to play.

Below is the general plan for the defense of a division sector.

As everything depends on that which concerns the infantry (the defensive organization, rôle and employment of the units), so the plan of action of the artillery and the rôle to be played in the defense by the aviation corps should be in perfect harmony with the arrangements made by the infantry. This will be covered in the next lecture.

PLAN OF DEFENSE OF A DIVISION SECTOR.

FIRST PART.

GENERAL OUTLINE OF THE ORGANIZATION OF A DIVISION SECTOR.

- I. Mission of the division.
- II. General organization of the defense of the sector.
 - (a) Limits of the division sector.
 - (b) Brief description of the division sector.
 - (c) Principal characteristics of the terrain.
 - (d) Brief description of the first position.
 - (e) Brief description of the intermediary position.
 - (f) Brief description of the second position.
- III. Division into subsectors of brigades, regiments, battalions.
- IV. Elements of the sector not belonging to the division (territorial units, trench batteries, machine guns of position, etc.).

SECOND PART.

PLAN OF DEFENSE.

- V. General principles serving as a base for the establishment of the plan.¹

¹ This paragraph will be drawn up as follows: (a) The defense will be organized in depth upon the successive positions, which include several lines. (b) No force assigned to the defense of a portion of terrain ever abandons it, no matter what happens. (c) All ground lost is regained by a counter attack executed by the troops reserved for this purpose. (d) Everything should be organized so that the counter attack may be immediate; that is, be launched immediately after the success of the enemy's attack.

- VI. Determination of the probable zones of attack.
- VII. Choice of the principal centers of resistance.
- VIII. Preparation of the local counter attacks (total strength, location, direction of movement, authority which orders the counter attack, etc.).
- IX. Study of the execution of the counter offensive, first by a regiment, then by a brigade (approaches, placing, direction of movement, authority which orders the counter offensive, etc.).
- X. Positions in readiness of the troops of the division.
- XI. Command post. Command observation stations. Telephonic communications, visual signaling, runners, etc.
- XII. Orders in case of a gas attack.
- XIII. Plan of food supplies.
- XIV. Plan of evacuation.

THIRD PART.

PLAN OF ACTION OF THE ARTILLERY (AS A REMINDER).

FOURTH PART.

ADDITIONAL MAPS.

- XV. Battle map: scale, 1/20,000, bearing the data contained in paragraphs II, III, IV.
- XVI. Battle map: scale, 1/20,000, giving the apportioning of the troops (infantry, artillery, engineers) in the normal stations.
- XVII. Battle map: scale, 1/20,000, giving the positions in readiness. (Par. X.)
- XVIII. Battle map: scale, 1/20,000, for the study of the counter offensives. (Par. IX.)
- XIX. Battle map: scale, 1/20,000, of the command posts, observation stations of the command, communications, etc. (Par. XI.)

APPENDIX TO THE FIFTH LECTURE.

Documents contained in the sector file.

FIRST PART.

OCCUPATION AND DEFENSE OF THE SECTOR.

- I. Map, scale of 1/50,000, fixing the limits of the sector (lateral and rear limits), with indication of the limits of the sub-sectors, neighboring units, locations of the headquarters and staff.
- II, Map, scale of 1/10,000, giving the apportioning of the troops of the first line, command post, location of machine guns and of trench mortars assigned to the sector. Communications with the neighboring units.
- III. Map, scale of 1/20,000, of the defensive scheme of each successive position.

PLAN OF DEFENSE.

- IV. Map, scale of 1/20,000, of liaisons of every sort (telephonic, visual, etc.) and of the observing stations.
- V. Location of the elements billeted or bivouacked in the rear of the troops of the first line.
- VI. Elements of the army participating in the defense of the sector (machine guns of position, units of artillery and of the engineering section, etc.).

SECOND PART.

PLAN OF THE ARTILLERY ACTION.

THIRD PART.

DOCUMENTS CONCERNING THE ENEMY.

- I. Map, scale of 1/10,000, of the enemy's batteries.
- II. Résumé of the information collected concerning the enemy (order of battle, apportioning of troops, itineraries of the reliefs, machine guns, trench mortars, observing stations, command post, depots, supplies, etc.)

III. Group of photographs of the sector.

IV. Special listening posts.

FOURTH PART.

PLANS OF WORKS.

Delivery of material (depots for materials, tools, sawing, workshops for fascine work, etc.).

FIFTH PART.

VARIOUS DOCUMENTS.

I. List of all the cantonments and camps with an indication of their capacities.

II. List of the elements of the army stationed in the sector.

III. Mine works.

IV. Special orders in case of a gas attack by the enemy.

V. Preparations for the emission of gas on our front.

VI. Arrangements for supplying the troops (centers of supplies, points of distribution, kitchens, depots for food, depots for munitions, sector depots).

VII. Special measures for the provision of water (points where water is to be found, watering places, wells, etc.).

VIII. Orders regulating evacuations.

IX. Employment of carrier pigeons.

X. Orders regulating the traffic. Orders, map, scale of 1/80,000, indicating the routes, roads of communication, the points not to be passed night and day by automobiles or wagons.

XI. Map, scale of 1/50,000, showing the railroads (standard gauge, 60-centimeter roads, and 40-centimeter roads).

The other records (of the subsectors, of the centers of resistance, of the points of support) are less complete, but should contain the inventory of material of every sort relating to the subsector, center of resistance, or point of support.



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