INFANTRY
DRILL REGULATIONS
(PROVISIONAL)

AMERICAN EXPEDITIONARY FORCES

PART II

1918

(WITH AMENDMENTS TO PART I)

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Infantry Drill Regulations

(PROVISIONAL)

AMERICAN EXPEDITIONARY FORCES

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1918

(WITH AMENDMENTS TO PART I)

PARIS
IMPRIMERIE E. DESFOSSÉS
13, QUAI VOLTAIRE

PREFACE

Part II, Provisional Infantry Drill Regulations, American Expeditionary Forces, with amendments to Part I, is published for the information and guidance of the American Expeditionary Forces.

The Provisional Infantry Drill Regulations, 1918, (Parts I and II), supersede the following previously published regulations and instructions:

Instructions for the Offensive Conduct of Small Units, January 2, 1918, (War Department Document N° 802).

Instructions for the Defensive Combat of Small Units, N° 1312, July, 1918.

Infantry Drill Regulations, United States Army, 1911, (War Department Document N° 394).

By command of General Pershing:

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GENERAL HEADQUARTERS AMERICAN EXPEDITIONARY FORCES, FRANCE, *May* 8, 1919.

AMENDMENTS PART 1

INFANTRY DRILL REGULATIONS, A.E.F., 1918

6th subparagraph, paragraph **75**, amended to read :

Fourth. The bayonet is not fixed except in bayonet exercise, on guard, at ceremonies, or for combat.

Paragraph **273** : Amended to read :

The formations of the battalion (Plate IV) are : line (companies in line), line of close columns (companies in close column), close column (companies in close column), close line (companies in close line), column of close lines (companies in close line), and column of squads.

The column of squads is the only formation that has any application in campaign. It is extended for approach march or combat in the formation required by the situation.

The formation in line is employed only for ceremonies in which a single battalion participates.

For ceremonies involving two or more battalions, the batta, lion is formed in line of close columns, close column, close line- or column of close lines.

Plate IV amended as shown in revised Plate IV, page 6.

1st subparagraph, paragraph 280, amended to read :

For battalion ceremonies or when directed, the battalion is formed in line or line of close columns.

Paragraph **291** amended to read as follows :

The formations of the regiment (Plate V) are : line of masses (battalions in line of close columns), line of battalion columns (battalions in close column), column of masses (battalions in line of close columns), column of battalion close lines (battalions in close line), and line of battalions in column of company close lines.

Of these formations, the column of squads is the only one that has any application in campaign. The battalions are extended and deployed in special formations required by the situation.

The line of masses is the ordinary formation for regimental ceremonies.

The line of battalion columns, column of masses, column

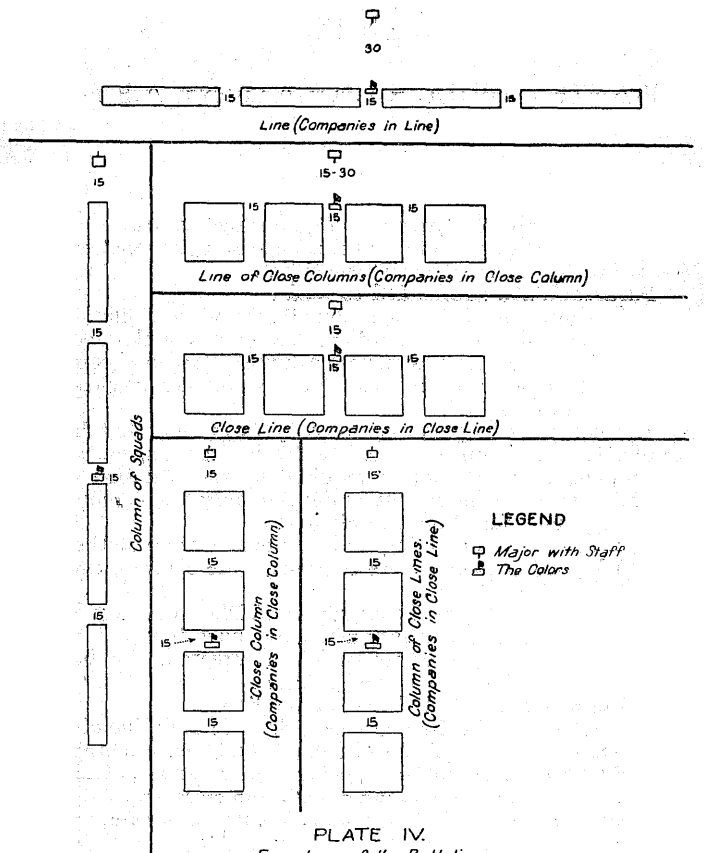


PLATE IV.

Formations of the Battalion.

Diagramatic:- Not drawn to scale.

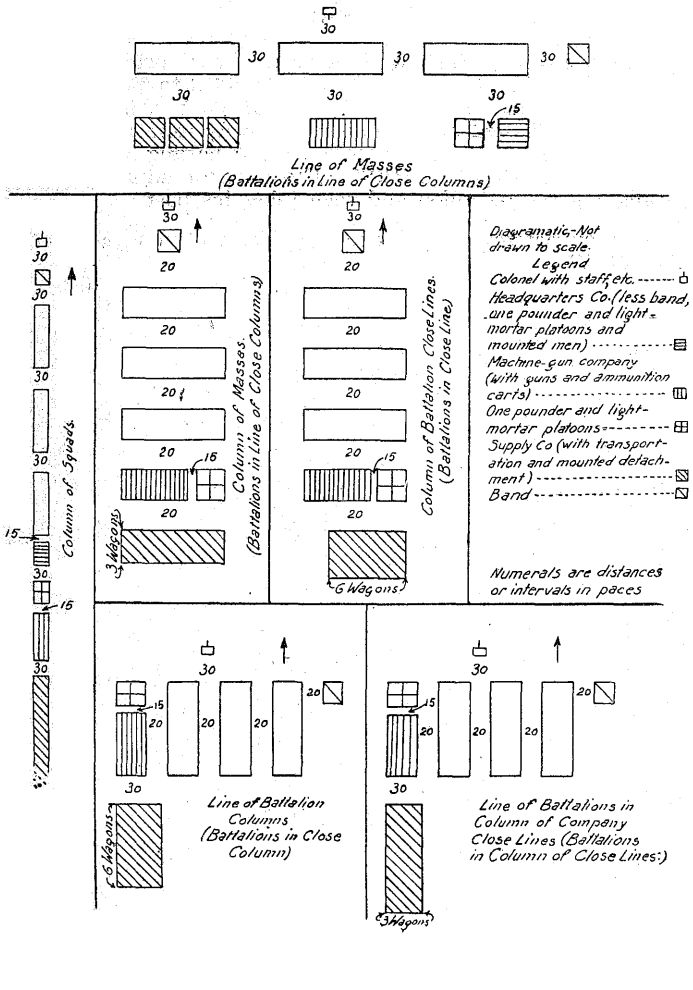
Numerals are distances or intervals in paces

All intervals and distances are measured between guides.

Distance of Major's post in front of center of battalion in line of Close Columns: 30 paces in formations of a single battalion: 15 in formations of a Regiment or larger unit.

PLATE - V

Formations of the Regiment.



of battalion close lines, and line of battalions in column of company close lines are employed in ceremonies of large commands (see paragraph 1025). These formations are described for convenience in designating the method of forming large commands for ceremonies and for reference when required. They have no other value.

Plate V amended as shown in revised Plate V, page 7.

4th subparagraph, paragraph **295**, amended to read :

The battalions, arriving from the rear, each **in line of close columns**, are halted on the line successively from right to left in their proper order and places. Upon halting, each major commands: 1. Right, 2. DRESS. The battalion adjutant assists in aligning the battalion and then takes his post.

Between paragraphs 534 and 535, insert heading MORTAR BATTERY.

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INFANTRY DRILL REGULATIONS

AMERICAN EXPEDITIONARY FORCES 1918

PART II

CHAPTER V. — DEFENSIVE COMBAT

1. GENERAL PRINCIPLES

552. The defensive is a form of action to be deliberately chosen only for the purpose of economizing troops on a front where a decision is not sought in order to concentrate superior forces at the point of decisive action. The defensive may, however, be imposed by the situation.

The economy of force effected by a *limited* defensive is the means of preserving the initiative of the commander.

On a defensive front, economy of force (holding out of reserves) is the means of enabling the defender to meet the attackern initiative and of transforming a defensive attitude into as' offensive.

Whatever may be the character of the defense (voluntary or imposed), the tactics of defensive action are essentially the tactics of holding extensive fronts with relatively weak forces.

553. All successful defense is based upon the vigilance and fighting power of the troops. The principles of defense serve only to give these qualities the best opportunity for their development; they have no inherent value of their own. The defensive forces must quickly discover a hostile attack, promptly form for action, and open fire without delay on the most important objectives.

554. The defense, no less than the offense, must, wherever possible, act by surprise. The visible lines of a defensive system must not betray the defensive dispositions, but rather act as a mask that conceals the real defensive organization.

555. The defense must be mobile. Mobility is acquired either by the holding out of large reserves as units of maneuver, or by distribution of the defenses in depth.

The holding out of large reserves as units of maneuver endows the defensive force with mobility by enabling it to meet the attack wherever it develops and to counter-attack in force at points of decisive importance.

The distribution of defenses in depth contributes to defensive mobility by permitting of the offering of resistance to the flanks as well as to the front. Depth of defenses must, however, be adjusted to the situation (see paragraph 561).

556. The defense must be **aggressive.** The counter-attack is the decisive element of defensive action. It is impossible to hold any defensive system by a merely passive resistance. The defense as well as the offense must act by **movement** as well as by **fire.**

Unless all unit commanders seize every opportunity for counter-attack, the attacking force must eventually succeed in driving the defenders out of their positions.

557. The defense must be **flexible.** The dispositions dictated by a stabilized situation are not adapted to the first contact of opposing forces nor to the moving warfare consequent on the break-up of stabilization. In stabilized warfare, the large force of artillery which the attacker can mass to support his attack requires thinly held front lines and such distribution in depth that concentrated targets will not be offered to hostile artillery. In the war of movement, neither this mass of artillery nor the unlimited supply of ammunition will be available, and inability of our own artillery to recognize and shell the hostile lines will increase the importance of the action of the infantry in resisting the attack. The front lines may and should be therefore more densely held.

Under different situations and at different stages of the occupation of the same position, defensive dispositions will present wide degrees of variance.

The defensive organization will tend toward the line or an area depending on the relative importance to be attached to frontal field of fire and hostile artillery fire effect. It is the task of the commander to adapt his dispositions to the situation with which he is confronted.

558. The **tactical principles of open warfare** must be the basis of the organization of units for defense. Whatever elaboration the stationary character of operations may at any time permit, must not disrupt this organization or produce tactical groupings which will be dissolved the moment the enemy effects a rupture in the defensive dispositions.

Any defensive disposition that presumes the indefinite continuance of stabilized conditions is necessarily defective.

2. ORDERS

559. The general principles of these regulations relative to the character of orders for the attack apply in large measure to the defense (see paragraphs 337-342). Due, however, to the more complete organization of which defensive action is capable, orders may go into greater detail as to the defensive conduct of units than in the case of the attack. But the temptation to concentrate all initiative in the hands of higher commanders and to build up an elaborate system based on the technique of the various weapons and the several arms must be strenuously resisted. Such a system will dissolve the moment any rupture in the defensive system occurs and will render a rapid change to the offensive impossible. Tactical unity must be the basis of defense as well as of offense.

See Pg 14 - Field Fortification Manual

3. SELECTION OF THE POSITION

560. Regard being had to the special requirements of any situation, the material factors that exercise the greatest influence on the selection of a defensive position are the **communications to the rear** and the **facilities for observation.** The features of the terrain that control these factors determine the *general lie* of the defensive position.

Local circumstances determine the more exact location of the position (field of fire, cover, etc., see paragraphs 563-567).

561. The depth of the defensive zone is dependent on the tactical situation, which under all circumstances is controlling. Where a violent bombardment by massed hostile artillery must be reckoned with, the depth of the position must be sufficiently great to force the enemy to scatter his fire over a wide area and so minimize its effects that he will be unable to neutralize the entire defensive system by his preparatory fire. In addition, a second position at such distance from the front line (6,000-8,000 yards) that it cannot be taken under fire by the artillery firing on the first position will generally be organized. This will be the most usual disposition in position warfare.

When less weight is to be attributed to the factor of artillery bombardment, the defense will concentrate its means in a shallower zone in order to avoid undue dispersion of its forces and exposure to defeat in detail. The main defense will be made on a *line* of resistance. In rear of the line of resistance and within supporting distance from it, a reserve line, designed to limit the effect of a hostile penetration of the line of resistance,

may sometimes be organized. This will be the most usual disposition in open warfare, where the attacker will not have at his disposal the mass of artillery, the unlimited supply of ammunition, or the exact knowledge of the defensive dispositions and of the location of his own attacking infantry that will usually be available in position warfare.

562. The value of frontal field of fire varies between wide limits, depending on the situation. A long frontal field of fire usually carries with it exposure to hostile view and hostile artillery fire. In the early stages of an engagement in open warfare, however, before the attacker has been able to acquire exact information as to the defensive dispositions and to mass the fire of his artillery against them, the importance of opening fire on the advancing troops at long range and subjecting them to demoralizing losses during their advance, will outweigh these disadvantages. Since at this stage of defense, all infantry fire is necessarily frontal, the initial deployment for defense should as a rule be made with a view to the development of maximum frontal fire effect.

The close approach of the attacking forces deprives the advanced defensive position of an extensive frontal field of fire and consequently increases the importance of flanking action. Rearward defensive lines may retain the full value of frontal field of fire. During a prolonged contact of the opposing forces, the more exact knowledge acquired by the attacker of all defensive dispositions exposed to direct observation and the mass of artillery which he can assemble to support his attack, may, however, neutralize the advantage of an extensive frontal field of fire for all defensive lines within range. It may therefore be necessary to sacrifice frontal field of fire in order to escape direct hostile observation; the loss is compensated for by the organization of a dense flanking fire with automatic weapons.

The importance of flanking fire increases with the decrease in frontal field of fire, *i. e.*, in direct ratio with the proximity of the enemy.

It also increases with an increase in the intervals between supporting points (see paragraphs 564 and 582).

The above considerations determine the order of construction of the elements of a defensive position (see paragraph 578).

563. Figure 4 shows the advantages and disadvantages of the various sites for lines of defense; the site to be selected will vary according to the relative weight to be assigned the various factors of the situation, which are in the main: field of fire, artillery support, hostile artillery fire effect, concealment of

defensive dispositions, protection of communications to the rear, and observation of the foreground of the position.

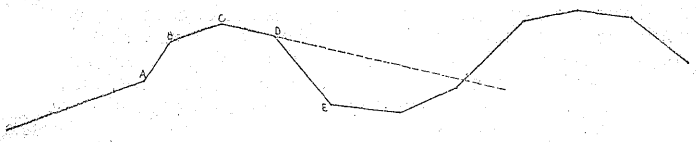


FIG 4

(*a*) At *A* (foot of forward slope), there is an extensive field of fire and grazing fire effect. The hostile ground is well observed, and artillery support is good. However, hostile artillery sees the trench *A* and the ground *A*-*B*-*C*. The enemy can direct accurate fire on the position and effectively support his infantry. Communications and the movement of troops in rear of the position are difficult.

(*b*) At *B* (military crest), there is a good field of fire and distant observation, but artillery support is very difficult on the slopes in front of *B*. Field artillery can effectively reach the slopes close in front of the advance line only by batteries placed in flanking positions. Moreover, hostile artillery readily sees the trench *B* and the ground *B*-*C*. The slope *A*-*B* permits the enemy to support his infantry to within a very short distance of the trench *B*.

(*c*) At *C* (topographical crest), there is distant observation, but the field of fire *C*-*B* is usually short. All terrain in rear of *C* is concealed from hostile observation. Communications are protected. Artillery support on the terrain *C*-*B* is very difficult as this terrain is seen only from *C*.

(*d*) At *D* (reverse slope), distant observation of the enemy is entirely lost. The field of fire *D*-*C* is short, but there are no difficulties of close artillery support. The enemy has distant observation from *C*, but beginning at *D*, the terrain has a large dead angle screened from enemy observation. Hostile artillery will have difficulty in firing on the slope *D*-*C*.

(*e*) At *E* (foot of reverse slope), there is the benefit of good support by artillery, and on the other hand, hostile artillery support will be difficult. All ground in rear of *E* is subjected to hostile observation and fire.

No absolute rule as to which position should be occupied can be prescribed. It will sometimes be advisable to establish

the line of resistance on the reverse slope with a line of observation on the forward slope or to place the line of resistance on the forward slope (foot of forward slope or military crest) and a reserve line on the reverse slope.

A reverse-slope position can as a rule be effectively defended only when points affording the observation required for the effective action of the supporting arms of the defense are retained and those giving views into the defensive dispositions are denied to the enemy. Such a disposition permits of the full development of the fire of the supporting arms of the defense and reduces the effectiveness of the fire of the supporting arms of the attack. When a reverse-slope position is held, the loss of frontal field of fire must be compensated by the organization of a dense flanking fire by automatic arms. The supporting arms must be able to prevent the enemy from occupying the crest in front, or the infantry must be capable of at once ejecting by counter-attack any hostile element which succeeds in effecting a lodgment on it.

The conditions required for the effective defense of a reverse-slope position will often be difficult to realize.

4. DEPLOYMENT FOR DEFENSE

564. A position should not as a rule be defended by an occupation in uniform density along the entire front, but rather by holding in strength the tactical localities which constitute the key-points of the position and by providing for the main defense of the intervals between such points by flanking fire and counter-attack. The key points of a defensive system are, in the main, points that control the communications of the defense and are therefore indispensable to the sustained progress of the attack (road centers, villages, etc.), and the features of the terrain which afford extensive views either into the defensive position or over the foreground. Features of the terrain that afford cover or concealment or good fields of fire and flankings constitute minor tactical localities.

By strongly holding these tactical localities as supporting points, the defense aims to limit the hostile penetration of its position and overwhelm the penetrating elements by counter-attack at a time when they are at a relative disadvantage in respect to supporting fire and to communications and supply. The superiority of the defense in this respect should be pronounced since the penetrating force will have lost in large measure the support of its artillery and will dispose only of

such communications as it is able to improvise in the stress of battle while the supporting fire and the communications of the defense are unimpaired.

If the defender succeeds in holding the flanks of the gap so strongly as to resist all attempts to widen it, it will be difficult for the attacker to maintain himself in the deep salient with a narrow base which the penetration has created.

565. The line of resistance is the line which must be held by the troops assigned to the defense of the position. It is not essential that the actual resistance be offered *on* the line of resistance; the defense may sometimes be most effectively made over a zone of resistance in which the actual line of resistance is included, and combat delivered in and about the assigned line for its possession. The conclusion of the engagement must in any case find the assigned line of resistance in the possession of the defending force. When a position is to be held by the defense of a zone, the lines to be held by each of the echeloned elements must be clearly defined in orders of the proper commanders.

Resistance is therefore offered on a series of tactical localities organized as supporting points, and separated by such lateral intervals and echeloned in such depth as circumstances of the particular situation may require.

The assignment of a line of resistance defines the mission of the defending force.

566. The troops of the defense are disposed in a depth varying with the tactical situation. The objects to be accomplished by the distribution in depth are:

(*a*) To provide security and gain time for manning the defenses of the main line of resistance;

(*b*) To avoid concentrations which would expose the defensive forces to excessive losses and neutralization by hostile fire;

(*c*) To limit the effect of surprise attacks and to permit the offering of lines of resistance to a flank as well as to the front.

567. When the main defensive position is preceded by an outpost zone, the larger infantry units, regiments and brigades, are generally deployed in sectors extending over both zones, battalions and smaller units over one zone only. The deployment in depth is, however, dependent on the frontage assigned to the unit; units assigned a narrow frontage deploy in relatively great depth.

When the defensive organization comprises one zone of resistance only, each battalion in the first line furnishes the outguards for its own front.

Unity of command and tactical control exercise an import

ant influence on the nature of the deployment. A unit assigned to an area in which the depth as compared with the frontage is very great is more effectively controlled by disposing the component units in depth (in column), while in the inverse case, control is more effectively insured by disposing them abreast.

568. Whether disposed over one or two zones, combat under any particular situation is delivered for the defense of one main line of resistance only. Where two zones are held, no doubt must exist as to the zone in which the principal resistance is to be offered. When the principal resistance is not to be offered in the advanced zone, the function of the first-line units is that of an outpost, *i. e.*, the security of the command, the repulse of minor attacks and raids, and the prevention of the occupation of the foreground of the position by the enemy. The strength of the outpost should not exceed that required for the security of the combat troops. The outpost holds its position in case of attack unless a withdrawal is ordered by higher commanders.

Under circumstances where an overwhelming bombardment of the position may be expected, the line of resistance is held by the defense of a zone in which the resisting elements are disposed in echelon (checkerboard formation), each flanking the front or covering the flanks of the others (see paragraph 619). Whether the position is held by defense on a line or over a zone, the aim in either case must be the same : to unify all means of defense and to avoid dispersion of effort.

Distribution in depth does not imply dispersion of force. The successive elements of the defense must be within supporting distance of each other. Supporting distance is such as will permit of effective support by fire and counter-attack.

569. Units assigned to the defense of any position are generally deployed in two echelons : a holding garrison designed for the immediate defense of a portion of the position and a support or reserve which has the mission of counter-attack or of reinforcing the holding garrison.

When defenses are distributed over a considerable depth, extreme localization of supports will often be necessary ; a platoon will frequently hold out a support.

570. When troops are deployed over two zones of defense, units in the outpost zone are deployed into supports (security echelon) and a reserve. Units in the battle zone are deployed into a combat echelon and a reserve; the echelons are similarly designated when deployed on a single line or over one zone of defense.

571. The strength of the forces held in reserve depends upon the character of the defense, whether passive or seeking a decision. In a defense of either character, the total strength of the forces assigned to purely holding missions remains practically constant; the character of the defense is indicated by the strength of the reserves. In a passive defense, the forces available for counter attack are made large enough only for expelling hostile troops which may penetrate the position, while in the defense seeking a decision as large a counter-attacking reserve as possible is held out with a view to striking a telling blow and winning a decisive victory.

In a passive defense or delaying action, supports and reserves may therefore be relatively weak.

572. Contact detachments, including machine guns, are assigned the mission of reinforcing the defense on sector boundaries and of maintaining tactical contact between adjacent units. They vary in strength from a squad to a company. These detachments are, where practicable, assigned a definite sector of defense. Their mission is either to counter-attack and drive out any hostile elements penetrating in their sector along the boundaries between units or to limit the effect of a hostile penetration by holding an oblique switch line connecting an advanced position with a rearward position on the flank; in either case, to protect the flank of the unit in case of hostile penetration of the adjacent sector. Contact detachments are usually detailed by battalions and larger units. They operate under the orders of the unit by which they are detailed.

573. The distribution of machine-gun units is dependent upon the tactical situation and varies with distribution of the troops which the machine guns support. When the main defensive position is preceded by an outpost zone, machine guns are not as a rule located in advance of the outpost line of resistance. A certain number participate in the defense of the outpost zone by delivering flanking fire through the intervals between supporting points or overhead fire from commanding positions in rear. The greater part of the machine guns are employed in the defense of the battle zone, and are distributed throughout the battle zone and over a limited zone of depth in its rear. When employed in the defense of a zone, machine guns are echeloned in checkerboard formation in such manner that each element flanks the front or covers the flanks of adjacent elements, and when practicable, is capable of delivering overhead fire over the defensive elements in its front.

The distribution in depth of machine guns decreases with the general contraction of the defensive zone. As the organization

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of the defenses approaches the linear, a larger number of machine guns are concentrated farther forward, and machine guns may be emplaced in or near the line of resistance. A considerable number should even in this case be distributed over a limited zone in rear of the line of resistance.

574. The machine guns form the skeleton of the defensive organization. They are so sited that as nearly as practicable, they cover the entire width and depth of the zone of resistance with continuous bands of fire. Infantry combat groups are so disposed that they cover the ground which is dead to machine-gun fire and are, at the same time, independently of the machine guns, capable of covering the field of fire to their front and in front of the intervals between them and adjacent combat groups. Light mortars are so sited as to cover dead ground in the bands of machine-gun fire or other important dead spaces, or to supplement the artillery barrage in case a barrage is contemplated.

While the automatic rifle is most effective when employed in a flanking direction and should be so employed when opportunity offers, it cannot, due to the absence of a fixed mount, be laid on a definite line of fire like the machine gun. The automatic rifle will not, as a general rule, be restricted to definite lines of fire; it will execute frontal fire on an enemy advancing directly toward it and flanking fire against troops advancing on adjacent units, as the occasion requires. It should always be so sited that it can deliver flanking fire across the front of the adjacent combat group.

The one-pounder gun is not assigned a definite zone of fire; it is rather employed as a weapon of opportunity against hostile tanks and machine guns. It is preferably emplaced where it can cover the principal approaches to the defensive position.

The assignment of attached artillery, machine guns, one-pounders, light mortars, etc., to battalions in the defense is made in accordance with the same general principles as in the attack (pars. 464,473, 531, 532).

575. Artillery units or single pieces are attached to infantry units and placed under the orders of the infantry commanders. Their missions are close support of infantry in defense, anti-tank defense, and accompaniment of counter-attacks. The principles of the employment of such artillery are in general the same as those of infantry batteries and accompanying artillery in the offense. During periods of stabilization, a certain proportion are held as silent guns, which open fire only in case of attack, against hostile infantry, machine guns, and tanks, while others are employed for daily firing on targets which are

particularly troublesome to the infantry. The divisional artillery retains responsibility for the supply of ammunition and stores to artillery units attached to the infantry. Attached artillery remains under the orders of its higher commanders for administration and discipline.

In the attachment and detachment of artillery units, orders must leave no doubt as to the commander under whose control they are to serve and as to the time when they come under and pass from his control.

576. In deployment for defense as well as for offense, the integrity of tactical units must be maintained. It is prohibited to segregate men of rifle companies into groups of specialists (auto-riflemen, riflemen, hand bombers, rifle grenadiers, etc.). Such groupings can only be effective so long as a stabilized defense can be maintained and will dissolve as soon as a rupture in defensive dispositions occurs or it becomes necessary to take the offensive. Infantry on the defense will fight as on the offense in combat groups of uniform composition (squads, sections, and platoons).

5. TACTICAL ORGANIZATION OF THE GROUND

577. In principle, infantry on the defensive intrenches. The extent of the defensive works depends upon the time available for their construction.

In the hasty occupation of a position, it is first of all important to locate the troops so as best to take advantage of the features of natural strength. Fortifications are constructed with a view to increasing the natural strength of the position as permitted by the time available.

578. The defense is made on a series of supporting points (linear or echeloned). In the initial deployment for defense, supporting points will be disposed in an approximately linear distribution. In a protracted defense, they will be echeloned in depth as well as in width. The organization of the supporting points themselves will also vary widely at different stages of the defense. At first, they will consist of simple lengths of trench sited for frontal and flanking fire and paralleled by cover or fire trenches for local supports and reserves. As soon as practicable, these are connected with each other by communicating trenches and developed into closed works capable of all-around defense.

The first immediate necessity in the construction of a line of supporting points is the front line with a continuous obstacle and cover for supports and reserves.

In a prolonged occupation of the defensive position, splinter and bomb-proof shelters are constructed, and numerous alternative combat emplacements are developed. Dummy trenches are constructed to divert the fire of hostile artillery.

579. In combat exercises when it is impracticable to construct the trenches appropriate to the exercise, their trace may be outlined by bayonets, stakes, or other markers, and the responsible officers required to indicate the profile selected, method and time of construction, garrisons, etc.

580. The distance between the several lines of trenches or combat emplacements parallel to the front should when practicable be such that :

(*a*) The garrisons of the rearward lines are able to cover by fire the flanks of the combat emplacements of the line immediately in front of them.

(*b*) The garrison of each rearward line does not fall within the zone of dispersion of hostile fire directed on the line immediately in its front, and friendly artillery can fire on hostile troops which have occupied one line without endangering our own troops in another. The safe zone of light artillery is 100 yards. That of heavy artillery is 300 yards.

(*c*) Rapid counter-attacks against the flanks of hostile elements penetrating the position are facilitated.

581. All lines should when practicable be sited and constructed with a view to recapture by counter-attack or to rendering them untenable to the enemy by fire from rearward lines.

582. The general direction of parallels and approaches is determined by the general direction of the front to be defended ; their site by the considerations set forth in paragraphs 561-565 ; their trace by the field of fire, frontal, oblique or flanking, to be covered.

In general, the trace follows the contour of the ground. Salients and reentrants are created only to the extent required for the efficient action of such flanking weapons as are to be emplaced in the trenches. As far as practicable, the natural salients formed by the ground forms are utilized as the flanking salients of field works.

The main flanking defense is furnished by weapons emplaced outside of the trenches. Machine guns are as a rule sited in positions detached from the trenches.

The most efficient flanking defense is rendered by weapons characterized by penetrating force and rapidity of fire (automatic arms).

Flanking defenses, in combination with obstacles that arrest the enemy under the fire of flanking weapons, are the principal

means of effecting the economy of force which is the essence of all defensive action.

The direction of fire of flanking defenses permits of their concealment from the direct frontal observation of the enemy. They therefore have the advantage of being able to act with the effect of surprise, in addition to the protection afforded by concealment. Since the conditions which make concealment from direct frontal observation a factor of the first importance are the same as those requiring great distribution in depth, the intensive development of flanking defenses is a distinguishing characteristic of the defense in depth.

Flanking defenses permit the defender to sacrifice *extensive* frontal field of fire. A line established on a reverse slope near the crest may become extremely strong due to good flanking defenses of the ground immediately in front of it.

The weakness of flanking defenses lies in their exposure to frontal attack. Their effectiveness therefore depends upon the efficiency of the frontal defensive elements. A position cannot be held by flanking defenses alone. If frontal resistance is destroyed, the flanking defenses must fall. Frontal and flanking defenses must mutually supplement one another.

583. The purpose of the *flank elements of field works* is to enable the garrison to offer lines of resistance to a flank as well as to the front. While in an initial deployment for defense, the construction of the frontal elements is of the first importance, provision must be ultimately made in the stubborn defense of a position for meeting an attack from a flank. The danger of disposing the defensive forces with a view to resistance of an attack from a preconceived direction must be avoided. Hostile penetration of an adjacent sector may radically transform the direction of the attack. Regard must also be especially had to this contingency in disposing the flanking defenses; flanking weapons are therefore as a general rule best disposed when they have a field of fire in as many directions as possible.

584. The purpose of parallels and approaches is to assure communications laterally and to the rear and to furnish combat emplacements on more or less extended lengths. The defense of intervals between combat emplacements is assured by the flanking fire of the combat groups holding these emplacements and of combat groups and machine guns situated to the rear. The combat emplacements should be selected with this end in view.

585. Approach trenches connect the various parallels with each other and the rear. In siting approach trenches, the advantage to be gained by incorporating them into the defensive

system as lateral lines of defense should be considered (Figure 4a).

586. Obstacles should be organized as soon as possible in order to hold the enemy under the fire of the defenders as long

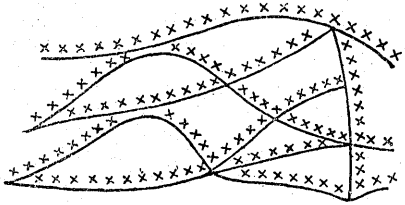


FIG. 4a.

as possible. Obstacles are of no value unless they are thoroughly swept by fire. A combination of obstacles and fire is equivalent to an increase of fire power.

587. In general, obstacles are employed for two purposes :

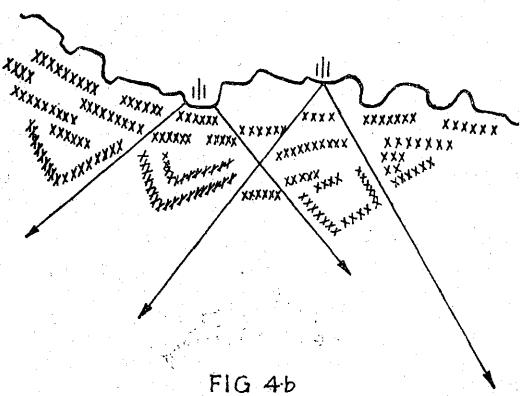


FIG 4b

(*a*) To prevent a sudden irruption of hostile forces into the front line of defense ;

(*b*) To hold the attacking forces as long as possible under the flanking fire of automatic weapons.

The general lie of obstacles therefore depends upon the flankings. The plan of obstacles and the flankings should be considered at the same time.

588. By a proper coordination of the flankings and the obstacles and a suitable arrangement of gaps, attempt should be made to canalize the attacking troops into certain avenues of approach where they will come under the destructive fire of machine guns (Figure 4b).

589. Command posts should be selected with a view to observation. They should if practicable be so situated that commanders have an uninterrupted view forward, backward and to the flanks, to the next higher command post, and over the foreground, and can keep up communication by messengers. In addition, special observation stations should be established on the commanding points of the terrain in such manner that the entire foreground and all ground within the position itself is in under constant observation.

6. CONDUCT OF THE DEFENSE

590. The conduct of an outpost as an agency in the service of security of the defense is described in Chapter IX of these regulations.

591. While the hostile attack is developing, patrols in front of the line of observation delay and harass the enemy while retiring on the defensive position. Especially strong patrols with machine guns operating well to the front may be assigned this mission. By their fire and their movement in retirement, if practicable in conjunction with dummy works, they endeavor to deceive the enemy as to the defensive dispositions, lead him in a false direction, and cause him to deploy prematurely and on incorrect lines. They occupy successive positions on commanding ground and take advantage of every opportunity to open a heavy surprise fire on formed bodies of hostile troops, without, however, permitting their retreat to be cut off.

592. While the engagement between the covering detachments of the two opposing forces is developing, long-range artillery opens fire on hostile communications, road centers, and other sensitive points in the zone of the attack. As the attacking troops approach more closely to the defensive position, field artillery, machine guns, one-pounders, and light mortars open fire on the advancing infantry and on located or suspected assembly points of reserves.

593. Infantry opens fire on favorable objectives at mid range. Such fire cannot, however, have any further effect, in addition to the losses which it inflicts, than to delay the defender's advance. The attack will always succeed in reaching assaulting distance from the defensive position, either under the cover of darkness or of fog or under the protection of its own fire. The delay effected will, however, gain time for the defense to perfect its dispositions and reinforce the threatened point.

594. When the front and direction of the hostile attack has been determined, the defense at once takes steps to meet it. Fire on the advancing infantry is continued, the outguards are withdrawn, and the defense on the threatened front is reinforced. The reinforcement does not as a rule provide for an increase in the number of men assigned to the holding garrisons; it is generally applied to the reserve. The result of the reinforcement is to increase the force designed for aggressive action rather than that intended for merely passive defense. Against minor attacks, the reinforcement may be effected by transferring the reserve of adjacent units to the threatened sector.

595. When the assault forms up at close range to the front line, the outguards set up the appropriate signal (rocket) for annihilating fire from the line of observation in case they discover a hostile concentration for attack in their front. In case the plan of defense contemplates an artillery barrage, they similarly set up the signal for artillery barrage either from the line of observation or when close enough to the line of resistance to insure their not being cut off by the friendly barrage. Outguards repel hostile patrol enterprises on the line of observation. Where the defense is made on two zones of resistance, the outpost repels minor attacks and raids on its line of resistance.

596. In order that the hostile attack may be prevented from reaching the line of resistance, the defense must gain and maintain fire superiority over the attack. In defense, fire superiority is obtained, not by the volume of fire, but by a well aimed and well directed fire, which inflicts losses on the enemy and causes his fire to become inaccurate.

597. As a general rule, the defense cannot gain fire superiority by virtue of superiority in the means which it puts into action. The ability to attack as a general rule presupposes superiority of means on the part of the offense. The defense must rely for fire superiority on the more methodical organization of its fire, especially its flankings, more accurate knowledge of ranges and of the terrain, the protection afforded by intrench-

ments against hostile fire, the concealment of its dispositions, and the disorganization which movement and the accessory defenses produce in the attacker's dispositions.

598. During the advance of the attacking troops, the artillery and machine guns, using direct or indirect fire, subject the hostile infantry to a destructive fire. The infantry batteries, trench mortars, one-pounders, and machine guns open fire on hostile infantry and its accompanying weapons, machine guns, automatic rifles, and tanks.

599. At night or in a fog, the flanking fire of the machine guns constitutes a vital element in the defense of a position. As these weapons can be laid on their lines of fire by day, they retain their full accuracy in night firing. A single machine gun can by flanking fire repel the most determined assault against the front which it covers. At night or in a fog, the holding garrisons of supporting points should be considerably reinforced.

600. Rifle grenades or hand grenades are used against hostile troops which have taken cover and cannot be reached by direct fire; and in repulse of night attacks.

601. A unit intrusted with the defense of an area or a position must under no circumstances abandon it unless it has been authorized to do so in certain contingencies by higher commanders.

602. During the assault, adjacent units support each other with flanking fire. Should the assault succeed in reaching the defensive position, riflemen leaping on the parapet meet the enemy with the bayonet.

603. Should the enemy succeed in penetrating the position, the defender should aim to strengthen the flanks of the gap and maintain his hold on the tactical localities (supporting points) on either side of the gap, resist all attempts to widen it, and counter-attack on the flanks of the salient rather than to attempt to close the gap by throwing troops across the head of the salient. For this reason, the organized areas held by units of varying importance which constitute the tactical localities of the defense, should have lines of resistance to the flanks similar to those to the front. From these lines of resistance, the garrisons of the organized areas take the penetrating elements under a destructive flanking fire, arrest their progress, and prepare and support the counter-attack.

604. Every infantry unit should take immediate advantage of any gap occurring behind a hostile force which has succeeded in penetrating the defensive position, to filter groups or units through the gap with a view to building up a strong point in the

enemy's rear. The demoralizing effect of fire from the rear will often produce important results.

605. If the enemy is defeated, he will be in no position to withstand a determined counter-offensive. The defensive must be prepared at all times to change to the offensive and exploit the results of successful defensive action.

7. COUNTER-ATTACK

606. The counter-attack should be made vigorously and at the proper time. It will usually be made :

By launching the reserve against the enemy's flank when the attack is in full progress ; this is the most effective form of counter-attack ;

Straight to the front by units in the first line with their supports after repulsing the enemy's attack and demoralizing him with pursuing fire ;

Or, by the troops in rear of the first line when the enemy has reached or penetrated the position.

607. Every unit at once expels by counter-attack any hostile force penetrating its area, zone, or sector, unless a withdrawal has been authorized by higher commanders.

608. Counter-attacks include :

Immediate counter-attacks by infantry only (front-line troops, local supports and reserves).

Counter-attacks with artillery preparation or accompanied by tanks or infantry guns (sector and general reserves).

609. Counter-attacks against an enemy who has penetrated the position should be launched as soon as possible before the enemy has had time to organize the ground.

610. Units held in reserve for purposes of counter-attack should be assigned a definite place for formation for counter-attack, and approaches to the advanced positions carefully reconnoitered.

8. DELAYING ACTION

611. When a position is taken merely to delay the enemy and withdraw before becoming too closely engaged, the important considerations are :

If the position is taken up on open ground, the enemy should be forced to deploy early, in order to permit of a timely withdrawal. The field of fire should therefore be good at distances

from 500 to 1,200 yards or more ; a good field of fire at close range is less important ;

The ground in rear of the position should favor the withdrawal of the first line by screening the troops from the enemy's view and fire as soon as the position is vacated. Exceptionally favorable conditions in this respect may make extensive field of fire less essential (*e. g.* as in woods).

612. On open ground, the defense is made by groups holding the natural strong points of the terrain, separated by considerable distances. Supports are needed chiefly for the protection of the flanks of the strong points. Reserves should be posted well in rear to assist in the withdrawal of the first line. Infantry batteries and single guns, and machine guns are especially valuable to a delaying force.

9. POSITION WARFARE

613. The general principles of defensive combat apply to the defense in position warfare. The chief peculiarities of the defense in position warfare are those due to the length of time the opposing forces remain in contact prior to the stage of decisive action. Every feature of the defense which in open warfare can only be covered by general instructions is intensively organized in position warfare.

614. The chief characteristics of the defense in position warfare are :

(1) The intensified development of all defensive works made possible by the length of time available ;

(2) The vast amount of artillery of all calibers, ammunition, and other matériel which the stationary character of operations permits the opposing forces to assemble ;

(3) Consequent necessity for the distribution of the defensive forces in great depth, in order to avoid offering concentrated targets to the attacker's artillery ;

(4) Superorganization of the service of information by means of permanent observation posts and aerial photography and consequent necessity for careful masking of all constructions ;

(5) Possibility of the accurate registration of fire on objectives, which, in conjunction with the unlimited supply of ammunition, permits of the use of defensive barrages, annihilating fire on specified areas, harassing fire, interdiction fire, etc.;

(6) Detailed organization of all defensive action.

615. The defensive dispositions in position warfare comprise :

(*a*) A first position, organized in depth and preceded by an

outpost zone when the main line of resistance is not located in the advanced zone of the position. This position will be on the ground where contact has already taken place with the enemy.

(*b*) A second position, chosen and occupied under the protection of the first and sufficiently distant from it to insure that it cannot be taken under hostile artillery fire at the same time as the first. Intermediate positions are organized throughout the zone of depth between the two positions.

(*c*) Switch positions are organized for the purpose of maintaining the continuity of the front in case the enemy breaks through at one or several points. Switch positions are oblique to the front and usually follow the natural contour of the ground. They serve as bases for counter-attack as well as to limit the effects of a hostile penetration.

616. The troops assigned to the defense of the first position comprise :

(*a*) The outpost (when an outpost zone is held) ;

(*b*) The combat troops ;

(*c*) The reserve.

617. The line for the defense of which resistance is to be made is defined in the orders of higher commanders.

618. As a general rule, the second position is not permanently occupied. It will usually be sufficient to have a certain number of reserve units near enough to assemble at the position in case of an alert. Special units are permanently designated for switch positions during an alert.

619. The defense cannot be successfully made on rigid lines of trenches. Any position that is once located can be knocked to pieces by the expenditure of sufficient ammunition. The defensive organizations must therefore be distributed over areas of such extent that they cannot be destroyed or neutralized by hostile fire. Combat groups and machine guns are distributed in checkerboard fashion, occupying inconspicuous points of the terrain and located within supporting distance from each other. Well defined targets must in no case be offered to hostile fire. Isolated woods, farms, etc., which will be subjected to heavy hostile fire should be avoided. The visible lines of the defensive system must not reveal the defensive organization. The more numerous the defenses of all kinds, the more widely they are distributed over the ground, the more effective their concealment from the enemy's air and ground observation, the more difficult it will be for the enemy to detect the most important points and to concentrate his fire on them.

620. The defense must be based upon the foreknowledge that all trenches will be subjected to the hostile preparatory

bombardment. Losses will therefore often be much slighter if the troops are posted in open ground or in shell holes. The trenches and fortified points will then absorb the hostile fire and mislead the enemy. Combat emplacements should be selected for all units on these principles. Such emplacements may be to the front, to a flank, or as far as the nearest supports, to the rear, into areas which are less exposed to hostile fire.

621. The principal purpose of the trenches is in general to serve as avenues of communication and protection against weather in quiet periods. They are none the less important. Without them, the fighting capacity of the troops falls off rapidly, and the service of supply becomes very difficult.

622. The only forms of protection against fire, of permanent value, are dugouts and concrete shelters of sufficient depth or resistance to withstand high-power artillery. Deep dugouts in the front lines do not permit of the prompt egress of troops, and in case of attack, become mere man-traps. Concrete shelters in the advanced zone should be constructed wherever practicable.

Dugouts and concrete shelters are an essential means of conserving the fighting capacity of the troops. Effort should be made to accomodate all reserves in shell-proof shelters. Dugouts or groups of dugouts should enable troops to be accomodated by complete units in order to facilitate command and supply.

623. The commander of each unit prepares a plan of defense and a plan of work which he transmits to his successor when relieved.

624. Special forms of increased readiness for action are provided in case indications of a hostile attack are observed. The measures to be taken comprise :

(1) Outpost and combat troops occupy their combat emplacements.

(2) Men engaged in special tasks or temporarily detached report to their units.

(3) All observers occupy their posts.

(4) Work in the battle and outpost zone ceases.

(5) Reserves (troops at rest) stand in readiness to move ; wagons are loaded and horses are harnessed.

(6) All means of communication are tested and telephones are manned by officers.

Special dispositions in case of fog must be taken. The number of sentries is increased, runner chains strengthened, and the outpost garrison if necessary reinforced.

10. ANTI-TANK DEFENSE

625. When an attack by tanks in force must be reckoned with, special measures for anti-tank defense are necessary. These comprise :

(*a*) Anti-tank redoubts ;

(*b*) Tank traps, mines, barricades, and other obstacles.

626. Anti-tank redoubts are usually strong points of the general system of defense, especially equipped with the means of anti-tank defense and constructed with especial view to checking the advance of tanks.

The special armament of an anti-tank redoubt comprises machine guns using armor-piercing projectiles, light artillery pieces, and one-pounders.

The redoubts are located along the approaches most favorable to the advance of tanks. In the distribution of anti-tank defenses, the fact that marshes, watercourses, thick woods, and very steep slopes constitute obstacles to the advance of the tanks should be considered. A stream with a firm bottom is no obstacle unless the water is at least 4 feet deep. A deep swamp or a stream with a soft bottom is an effective obstacle.

627. Tank traps, mines, barricades and other obstacles should be so located as to be under the close-range fire of the defense. Obstacles may be constituted by damming brooks so as to form marshes, making slashings across roads, placing tank traps at road defiles and along forest paths, or by barricading the exit of villages. Strong bridges may be destroyed and replaced when necessary by lighter bridges. Slopes should be cut with a sharp vertical wall at least six feet high in the direction facing the tanks and 10 feet in the opposite direction.

In order to constitute a serious obstacle in soft or medium ground, a ditch should be at least 14 feet wide and 8 feet deep. A ditch across a road is more effective if dug at points where the ground on either side of the road is not suitable for the passage of tanks. It may be lightly bridged to take horse traffic.

628. Machine guns open heavy fire on approaching tanks, especially against the aperture through which the operator directs the movement of the tank. Infantry takes cover from the view of tanks which have penetrated the position, so far as compatible with its mission, usually giving way to one side of the line of approach. It must be prepared to resume its combat emplacements immediately after the passage of the tanks and open fire on the hostile infantry which follows them.

11. THE PLATOON

629. In defense, a platoon of a first-line company may be deployed as an outguard (outguard platoon, picket), as a holding garrison on the line of resistance (combat or security platoon), or as a support (reinforcing or counter attacking platoon).

630. The conduct of an outguard is described in Chapter IX of these regulations.

Combat Platoon

631. Depending on the frontage assigned to it and the extent of the field of fire to the front, a combat platoon deploys for defense on one or two lines. The platoon will more frequently deploy on one line for defense than for attack. When the field of fire to the front is short and the attack can reach assaulting distance at short range under cover, deployment in two lines may be necessary. Deployment in two lines will also frequently be effective under conditions which favor the organization of tiers of fire. When deployed in two lines, the platoon can furnish protection to the flanks of the groups in the first line and offer lines of resistance to the flanks.

During continued occupation of the same position and upon approach of the enemy to close range, a change in dispositions in order to provide for all-around defense will usually be necessary.

632. The frontage assigned to the platoon may vary from 100 to 400 yards.

633. The fundamental principle of the defensive tactics of the platoon is that each section in the first line shall be so disposed as to cover its own front and flank the front of the adjacent combat group and the intervening interval; and each section in a rear line shall cover the flanks of the sections in its front and the intervals between them.

634. The platoon does not as a rule occupy its position with men spaced at equal intervals along the line. Sections, squads, and groups are located in such manner as to favor the development of frontal and flanking fire and cover the areas which are dead to the fire of the supporting machine guns.

635. The platoon leader locates the combat emplacements to be occupied by the several combat groups (sections, squads, etc.) of his platoon, in accordance with the captain's order. The method of deployment for defense will depend upon the

time available for the construction of the position. When immediate provision for cover is urgent, each combat group is deployed on the trace of its combat emplacement, and the construction of the positions commenced. A procedure of intensive digging is followed ; in each combat group, men are assigned tasks in pairs ; each man works at maximum capacity for periods of four or five minutes, when he is relieved by the alternate man of the pair.

Platoons must be trained in rapid deployment for defense as well as for offense ; squad and section leaders must be taught to dispose their units on the general defensive line of the platoon in such manner as to insure the maximum fire effect and the most advantageous use of cover.

When a more deliberate procedure may be followed, the platoon is divided into reliefs which are assigned definite tasks on which they work until completed, the remainder of the platoon being held in a position of readiness at rest (see Chapter VI).

The position must be so constructed that the platoon can cover with its fire all parts of the sector assigned to it and flank the front of adjacent units.

636. As soon as possible after the construction of the combat emplacements is completed, the platoon leader should take steps to connect them with each other and with those of adjacent units by communicating trenches. He should, as soon as possible, make provision for shelter of the platoon, affording at least protection against the weather and if practicable against the fire of light artillery (see Figure 16, page 57). The subsequent development of the position and the extent of the constructions will vary with the length of time the position is occupied.

637. In each combat group, auto-riflemen are so located that they can fire direct to the front and across the front of adjacent units (Figure 37, page 75). Hand and rifle grenades are used to cover any dead ground in front of the position.

638. The platoon leader ascertains the ranges to all prominent points in the foreground and prepares range cards for the use of his combat groups. He assures himself of the provision of an adequate supply of ammunition and makes provision for its storage (depots, niches).

639. The platoon leader familiarizes himself with the location and sectors of fire of the machine guns and light mortars covering his front and with the post of the nearest artillery observer.

640. The platoon leader establishes communication by

runner with the command post of the captain and with the leaders of adjacent platoons. He sends one runner to join the captain. He familiarizes himself with the most favorable points of observation in his own position and in those of adjacent platoons, and details an observing personnel as permanent in character as possible for the general observation service of his position. He familiarizes himself with the terrain in the foreground of his position and with the position of adjacent platoons. He instructs section and squad leaders and his men as to the details of the terrain (roads, villages, streams, ravines, woods, etc.), and informs them as to the location of platoon, company, and battalion command posts and the battalion aid station. When it is not necessary for all men to occupy combat emplacements continuously, he places such portions of his platoon as are not required for immediate duty at rest (in readiness) and maintains the readiness for action of his platoon by posting the necessary sentries. Each combat group must post at least one sentry (single or double) to insure prompt manning of its position in case of attack. One noncommissioned officer must constantly be on duty in the platoon. The platoon leader assures himself that each man is familiar with the emplacement he will occupy in case of combat or alarm and that the position can be rapidly manned.

Platoons in Support and Reserve

641. When support platoons and platoons of reserve companies are assigned to definite combat emplacements, their action is similar to that of combat platoons. They establish contact with the platoons in their front and on the flanks. When held in a position of readiness, they provide the necessary cover and take the necessary steps to insure their readiness for action (posting of sentries and lookouts, designation of assembly positions, etc.).

Position Warfare

642. When warned for duty in the trenches, the platoon leader inspects his platoon and assures himself that the arms, equipment, and clothing of his men are in proper condition and that the equipment of each man in respect to ammunition, reserve rations, and kit as prescribed by orders and regulations is complete and in proper condition.

643. The relief of troops in the trenches usually takes place at night. The platoon leader makes a personal reconnaissance by daylight of the position to be held by his platoon. Accompanied by a runner, he proceeds with the captain to the command post of the outgoing company, studies the plan of defense of the company area, and receives the explanation of the captain commanding the outgoing company. He then goes with his runner and a guide furnished by the outgoing company to the post of the outgoing platoon leader and sends back his runner to the captain and the guide to his platoon. He receives from the outgoing platoon leader an extract of the plan of defense of the company area pertaining to the platoon position. The extract comprises :

(*a*) For a combat platoon : the precise rôle of each combat group (for example to sweep a sector of the ground in front or to flank an adjacent element) ; detailed sketch of dispositions and of hostile trenches.

(*b*) For a support platoon : combat position in case of alarm, the support to be given or counter-attack to be launched, in the cases considered in the plan of defense of the company.

(*c*) The rôle of adjacent platoons, means of communication with them and with the captain.

(*d*) Plan of work.

644. Accompanied by the leader of the outgoing platoon, the platoon leader makes a detailed examination of the ground. He informs himself by personal inspection as to all the details concerning his position and those of adjacent platoons with whom he must maintain constant contact. He must be informed with regard to :

(*a*) Location of supporting trench mortars and their field of fire.

(*b*) Sectors of fire of machine guns covering his front and dead ground in same.

(*c*) Lie of friendly artillery and machine-gun barrage in front of his position and signals for starting and stopping the barrage.

(*d*) Lie of hostile barrage and gaps in same.

(*e*) Location, strength, and capacity of shelters.

(*f*) Defensive measures against gas attack and system of giving gas alarm.

(*g*) Location of nearest aid station and the route thereto.

(*h*) The accessory defenses and hidden passages through the barbed wire and gaps in enemy's wire.

(*i*) Conduct and habits of the enemy ; strength of hostile

obstacles; location of hostile posts, machine guns, and trench mortars; hostile patrol and mining activity.

(*k*) Location of nearest artillery observer.

(*l*) Points in trench system exposed to fire of hostile snipers.

(*m*) Arrangements for supply of water, small-arms ammunition, grenades, sandbags, wire, flares, etc.

645. When the platoon arrives, each combat group takes its place; the observers, the sentries, and the noncommissioned officer on guard proceed to carry out the orders for the night. In transferring his sector, the outgoing platoon leader is responsible that no man leaves his place until a man of the relief is posted and instructed as to all points in question.

646. As soon as he has taken over his position, the platoon leader reports that fact to the captain. When so instructed by his captain, the outgoing platoon leader orders the departure of his platoon.

Should the enemy attack during the relief, the outgoing platoon leader retains command.

647. The outgoing platoon makes its preparation for departure before the hour of the relief. All portable tools and camp matériel are taken. Grenades and cartridges in excess of the number prescribed to be carried on the person are left in the trench. The incoming platoon leader receives a list of trench stores on hand and checks up the stores transferred. The trenches, the shelters, and latrines are left absolutely clean.

648. The platoon leader informs his men regarding —

Their firing or assembly positions and duties in case of attack;

The position of platoon, company, and battalion command posts, the battalion aid station, and routes thereto;

Parts of trenches exposed to fire of hostile snipers;

Location of cartridge niches, grenade stores, latrines.

He inspects the position as soon as it has been manned by his platoon to insure that each section, squad, and group leader understands his orders and that all parts of the platoon are in readiness for defensive action.

649. As a general rule, unless obviously impracticable, the plan of defense in force at the time of relief should be continued in force during the first night of occupancy of the trenches. Based on his personal reconnaissance and observation, the platoon leader should as soon as practicable submit proposals to his captain embodying such changes in the plan of defense, in the location of combat emplacements, listening posts, patrol enterprises, employment of his own close-combat weapons (sniping, harassing fire), targets for artillery fire, etc., as the

situation may require. When necessary, he selects the combat positions outside the trenches (shell-holes, etc.) to be occupied in case of hostile attack and decides on the method of occupying them.

650. The platoon leader requires the platoon sergeant to keep a duty roster of the platoon. Details for carrying and ration parties, work, and other service, whether rendered in the area of the platoon or called for by higher authority, should be adjusted so as to allot periods of rest and of duty in an equitable manner. As a rule, each combat group details its own sentries; sentry details are made by the platoon only when all elements of the platoon are sheltered close together. Men are warned for duty and informed as to the hour when the duty is to commence. When practicable, notice boards are placed in each platoon trench on which are posted daily all orders regarding working parties and other orders affecting men in the platoon. The time at which they are to come on duty is stated.

651. One hour before daylight and at dusk, all officers and men go to their proper posts. At the afternoon formation, rifles, ammunition, and equipment are inspected, and the firing position of each man tested to see that our wire is covered. All gas-defense measures are inspected and alarm apparatus tested. At the morning formation, ammunition is issued, provided there has been any expenditure during the night.

652. The platoon leader holds practice alerts and gas alarms. By this means, he insures that a hostile attack always finds the platoon in readiness for action. The alarming of the platoon, the prompt issue of the troops from their shelters, the occupation of the firing or assembly position or preparation for counter-attack is practiced.

Increased readiness for action is necessary in case of fog or darkness. Prompt egress from the shelters and occupation of the firing or assembly positions is insured by posting sentries at the gallery entrances and requiring the garrison of the shelters to be assembled into groups under their squad or group leaders in the order in which they will issue from the shelter.

653. If the enemy penetrates the position of the platoon, it is the duty of the platoon leader on his own initiative and without waiting for orders to counter-attack and eject him from the position. If the enemy has penetrated into an adjacent area, the platoon must counter-attack with all elements not serving as a holding garrison.

654. The ability of the platoon promptly to meet a hostile attack depends on the efficiency of its sentries and observers.

They must if practicable give immediate warning of any indications of assembly of hostile troops for attack and set up the prescribed signal for delivery of annihilating fire by the artillery. In any case, they must give immediate warning when the hostile line shows itself and set up the prescribed barrage signal. The men must leave their shelters with rifles loaded and grenades ready before the enemy reaches our lines.

655. The platoon leader makes provision for heating the soup and the coffee (charcoal, solidified alcohol, etc.). He inspects the mess tins and takes all possible measures for the proper subsistence of his men. Ration parties carry back unserviceable material, empty cartridges, and the weapons of the killed and wounded and turn them in at the proper depot (see paragraph 689).

Cartridges not issued to men are stored in niches located at suitable points along the trench. Empty cartridge cases are collected in a platoon depot. Grenades and rockets are placed in sandbags in lots of 10-20 and stored in niches established at suitable points (vicinity of sentry posts, barricades, etc.). Tools and trench matériel not in actual use are stored in a small platoon matériel depot.

656. The helmet is always worn, and gas mask carried in the alert position. In a first-line company, the men are always under arms, tools on the belt, the pack, canteen, and blanket set in order in the shelter; rifles are not loaded, the magazine is filled, cut-off up, and safety lock at the ready. Rifles are cleaned and oiled daily and after a gas attack.

657. The routine duties of the platoon leader are:

Distribution and supervision of guard and labor duty of his platoon;

Development of his position in accordance with a progressive plan of work (trenches, accessory defenses, etc.);

Continuous personal reconnaissance of the hostile position;

Upkeep and improvement of shelters;

Holding of practice alerts;

Upkeep of alarm apparatus;

Provision for suitable storage of combat matériel;

Attention to maintenance in condition of arms, ammunition, tools, equipment, clothing, etc.;

Maintenance of cleanliness and sanitary condition of his area;

Supervision of proper subsistence of his men;

Replenishment of ammunition;

Daily inspection of position, arms, guard service, etc.

He at once communicates to the captain and adjacent platoons any change in his own or the hostile position.

658. The platoon leader keeps the platoon sergeant informed as to all the defensive measures of the platoon so that the latter may be able to take his place in case he becomes a casualty.

659. The duties of the platoon sergeant are :

To replace the platoon leader when the latter becomes a casualty ;

To familiarize himself with the plan of defense of the platoon area ;

To keep a roster of men for various duties ;

To supervise the assembly and assignment of fatigue parties ;

To allot men to shelters ;

In general, to supervise the interior economy of the platoon (subsistence, sanitation, care of equipment and stores, execution of standing orders).

12. THE COMPANY

660. A first-line company usually deploys for defense in three echelons: (1) an outguard; (2) combat or security echelon; (3) support.

It may deploy with an outguard varying in strength from a squad to a platoon, a combat or security echelon of two or three platoons, and one or two support platoons. The strength of the outguard largely depends on the facilities for observation; it will be greater in close country or at night than in open country or by day.

661. As a general rule, the outguards of the position are furnished by the first-line companies. A platoon is usually designated to furnish the outguards and patrols required for the front of the company. In some cases, two or three platoons may be deployed in depth abreast, each furnishing the outguards for its own front. The particular method to be employed will depend upon the facilities for communication between the line of observation and the line of resistance, and the frontage assigned to each platoon. Where the frontage assigned to each platoon is considerable and good approach trenches connect the line of observation with the line of resistance, the outguards may be furnished by platoons ; unity of command may sometimes be more efficiently served in this way.

Combat Company

662. The captain assembles his platoon leaders on the position to be occupied by the company ; states available information relative to the enemy and supporting troops and whether the front is protected by covering detachments ; points out the line of resistance, and the sections of the battalion and the company, and those of adjacent units ; indicates the location and sectors of fire of the supporting machine guns ; assigns platoons to the combat echelon or as supports and details an outguard ; assigns sections of the line of resistance to combat platoons and indicates the combat emplacements to be constructed and the location of cover trenches for supports ; prescribes such details relative to the trace of works to be constructed as may be necessary and practicable ; details working parties for construction of an obstacle in front of the position when such detail has not been made by the major, and for such other purposes as may be immediately necessary ; states the location of the combat train, the battalion aid station and his own combat post.

663. If practicable, the cover trenches for supports are so sited as to be capable of covering the flanks of the combat platoons and of eventually being connected with them by approach trenches so as to form a closed work capable of all-around defense.

The captain selects and fortifies an observation post giving him the best possible view over his position.

664. The captain supervises the construction of the fire trenches of the combat platoons. He insures that combat emplacements are so sited that platoons can mutually support each other by flanking fire and that all dead spaces in the bands of machine-gun fire are covered.

665. After the combat emplacements, cover trenches, and obstacle have been completed, the captain makes provision for the construction of approach and communicating trenches, connecting fire trenches with each other, with the support trenches, and with the trenches of adjacent companies. He prescribes the construction of such lateral lines of defense, including obstacles, as are necessary.

666. The post of the captain is usually with his support platoons or between them and the combat platoons.

Reserve Companies

667. When reserve companies are assigned to the defense of a reserve line, their action in deploying for defense and in

the construction of the position is similar to that prescribed for combat companies. Reserve companies are so disposed as to check and throw back by counter-attack hostile elements which succeed in penetrating the line of resistance. Captains reconnoiter the section of the line of resistance in their front and maintain contact with the captains of combat companies. They must be prepared to support the units on the flanks of the battalion as well as the first-line companies of their own battalion.

When held in a position of readiness, measures must be taken to insure the prompt assembly of reserve companies in case of hostile attack (posting of lookouts, designation of assembly places, etc.).

Position Warfare

668. The provisions of these regulations relative to the conduct of the platoon in position warfare apply in large measure to the company.

669. The captain prepares the plan of defense of the company area with a sketch of his dispositions and copies of orders for the combat groups. He selects the officer on watch and prescribes the patrolling to be carried out. He selects and fortifies an observation post and details a permanent observing personnel for manning it. He maintains communication with the major and adjacent companies by visual signaling, runner, or other method. He maintains communication with his platoons by runner. He keeps in personal touch with trench-mortar and machine-gun units covering his position. He sees that all concerned are familiar with the method of calling for barrage and insures close contact between his observers and the forward observers of the artillery in his area.

670. The captain studies the possibility of the execution of raids against the hostile position and makes proposals regarding them and the support required (artillery, machine-gun, trench-mortar) to the major.

671. The captain makes plans for employment of his support platoons for counter-attack under various assumptions as to hostile penetration into his area or the area of adjacent companies. The supports must be so located that they can advance against the point of penetration without loss of time. The counter-attack should if practicable take the enemy in flank. Depending on the circumstances, it may be made through the trenches or over open ground.

672. Barrage fire is requested by the command post (telephone, rockets) as soon as it is informed of the launching of a hostile assault. In default of other information, the captain and the major ask for barrage and launch the counter-attacks as soon as they perceive that the range of hostile artillery has been lifted.

673. The captain makes daily inspections of his sector, corrects deficiencies, and sees that all leaders are familiar with their duties in the execution of the plan of defense. He holds the officer on watch responsible for the efficient performance of the guard duty of the sector and requires him to make frequent inspections to insure the vigilance of sentries and their familiarity with their duties.

13. THE BATTALION

674. The battalion is usually reinforced for defensive combat by a machine-gun company, one or more sections of light mortars and one-pounders, and one or more light-artillery pieces.

675. When the deployment is not covered by other troops, the major details a covering detachment (march outpost) to protect the occupation of the position, or directs the companies to send out outguards or patrols.

676. When practicable, the major, accompanied by the captain of the machine-gun company, determines on the sectors of fire of the machine guns and fixes their location in such manner that they cover the entire front of his position and flank the front of adjacent units with continuous bands of fire and are at the same time capable of delivering long-range overhead fire over the combat echelon. He determines on the general lie of the obstacles in such manner as to arrest the hostile attack under the flanking fire of the machine guns. He determines the natural strong points of his section and fixes the combat emplacements of his first-line companies accordingly.

The major assembles the captains of his companies on the position, communicates the information obtained regarding the enemy and supporting troops, indicates the line of resistance and the sections of the regiment, the battalion, and adjacent units, and the location and sectors of fire of supporting machine guns ; designates companies as combat companies or reserve, assigns them to sections of the battalion position or positions in readiness, and indicates the combat emplacements to be constructed. He prescribes the direction toward

which the trenches should face or fixes their direction by the assignment of sectors of fire to the combat companies. He prescribes such details relative to the trace of field works as the time available may permit and situation requires. He prescribes the location of one-pounders and artillery pieces and assigns them missions as required by the situation. He fixes the location and field of fire of the light mortars in such manner as to cover the dead spaces in the bands of machine-gun fire and other important dead spaces. He details working parties for clearing the field of fire, the construction of the obstacles, his message center, command post, and observation post, and such other purposes as may be immediately necessary. He details the necessary carrying parties and states the location of the combat train, ammunition and supply depots, battalion aid station, and his own combat post or message center.

677. The major supervises the construction of the position. He insures that the combat emplacements of the companies are so constructed that they cover the dead spaces in the bands of machine-gun fire and that they mutually flank each other and the front of adjacent units. He details such parties from the reserve companies to assist in the construction of the works on the line of resistance as are not required for the construction of cover for the reserves. When provision has been made for the construction of the most essential features of his position, he details further working parties for the construction of approach trenches to his combat companies. He prescribes the construction of such dummy trenches as the situation permits.

678. When natural cover for the protection of reserves is not available and it is necessary to construct cover trenches, such trenches should when practicable be so constructed as to form a reserve line on which penetration at isolated points may be checked.

679. In addition to their flanking field of fire, machine guns should when practicable be so sited that they can take the attacker under fire at long range. Positions which permit of long-range fire from concealment (thickets, etc.) are especially favorable as they prevent the premature destruction of the machine guns by hostile artillery. A certain proportion of machine guns should if practicable be echeloned in depth in rear of the line of resistance in such manner as to be able to take hostile elements penetrating the line of resistance under flanking fire and deliver long-range fire over the line of resistance or through the intervals between supporting points. Alternative positions should be selected. In order that the fire of

the greatest possible number of machine guns may be concentrated at any point on the front of the position, they should be so sited that they have as large a field of fire as possible.

Infantry groups are detailed when necessary for the close protection of machine guns.

It will often be advantageous to place the tracing of the obstacle in front of the position under the direction of the captain of the machine-gun company.

680. The major establishes a visual central in the vicinity of his message center and insures that companies establish connection with it. He maintains communication with his companies and with adjacent units and the rear by visual signaling, runners, mounted orderlies or cyclists and such other means as may be furnished him.

681. The chief mission of the reserve companies is to support the combat troops by counter-attack in case of penetration of the line of resistance. A definite place of formation for counter-attack should be assigned them and the best approaches to the front carefully reconnoitered. In order to insure the timely intervention of reserves, it may sometimes be advisable to assign each reserve company a definite sector against which it will launch its counter-attack without waiting for orders, in case of hostile penetration.

682. The regulations governing ammunition supply in offensive combat (paragraphs 479-484) apply in principle to the defensive. The relative absence of movement on the defensive permits, however, of the establishment of depots of ammunition and other supplies. Such depots are established in the fighting emplacements of platoons and at the battalion ammunition and supply point. During combat, ammunition and other supplies are transported to combat companies by carrying parties attached to combat battalions from the regimental reserve. During periods of stabilization, carrying parties for ammunition, rations and supplies may be detailed from the battalion reserve. In all cases, the battalion is responsible for the delivery of supplies from its depots or supply point to its combat companies.

Position Warfare

683. The battalion may be employed as first-line battalion, second-line battalion or reserve.

684. A first-line battalion is employed as an outpost battalion or combat battalion, depending on whether the principal resistance is to be offered in the advanced zone or in the zone

of the battalion in second line. Depending on the same condition, the second-line battalion is employed either as a combat battalion or as support to the first-line battalion.

When it is not intended to offer the principal resistance in the zone of the first-line battalion, it will frequently be advisable to withdraw one or two companies of the battalion and place them at the disposition of the commander of the combat troops or in reserve.

685. The higher command determines the zone in which the principal resistance is to be offered.

First-line Battalion

686. When employed as an outpost, the first-line battalion is deployed into support and reserve companies. Support companies (security echelon) furnish the outguards (pickets, sentry squads, cossack posts) and patrols for the front of the battalion. When employed as combat battalion (main line of resistance in advanced zone), the first-line battalion is deployed into combat companies and reserve.

687. The major of the first-line battalion supervises the service of information in his sector. He insures the prompt release of the barrage, the alarming of all parts of his battalion and the second-line battalion, and notification to the colonel and adjacent sectors in case of hostile attack.

688. An artillery representative acts as advisor to the major in artillery matters and arranges for the cooperation of the supporting artillery. He maintains communication with the artillery commander by the use of his own personnel and matériel. The major insures prompt reports from his subordinates with a view to bringing down artillery fire on transient objectives (working parties, reliefs, etc.). He holds practice alerts to insure the readiness of his battalion in case of gas or other attack. He orders such patrolling and organizes his observation service in such manner as to assure himself of constant accurate knowledge of the hostile position and hostile activity. He maintains close contact between all parts of his position and with adjacent sectors. He directs the development of the position in accordance with the plan of work established by the colonel. He is responsible for the maintenance and replenishment of the ammunition supply in his battalion. He inspects his area and assures himself as to the efficient performance of duty of all parts of his battalion.

689. The supply officer of the first-line battalion is responsible for the delivery of rations from the company kitchens to the platoons of the first-line companies. He is in charge of

the company kitchens of the first-line companies and is furnished details for carrying parties from the battalion reserve or other rearward echelon.

Second-line Battalion

690. When employed as support to the first-line battalion, it is the duty of the battalion in second line in case of hostile penetration of the advanced zone to eject the enemy by immediate counter-attack without waiting for orders. The major reconnoiters the advanced zone with his captains, familiarizes himself with the details of the position, acquaints himself with the lay of the hostile barrage and the principal shelled areas and determines the best approaches to the advanced zone. He is responsible that the counter-attack is delivered before the enemy is able to establish himself in the captured position.

691. In order to insure prompt launching of the counter-attack, it will frequently be necessary for the major to assign to his captains zones of action within which they are responsible for the prompt delivery of the counter-attack without orders from the major.

After the delivery of the counter-attack, the major takes steps to reorganize his battalion and redistribute it in depth.

Reserve Battalion (at rest)

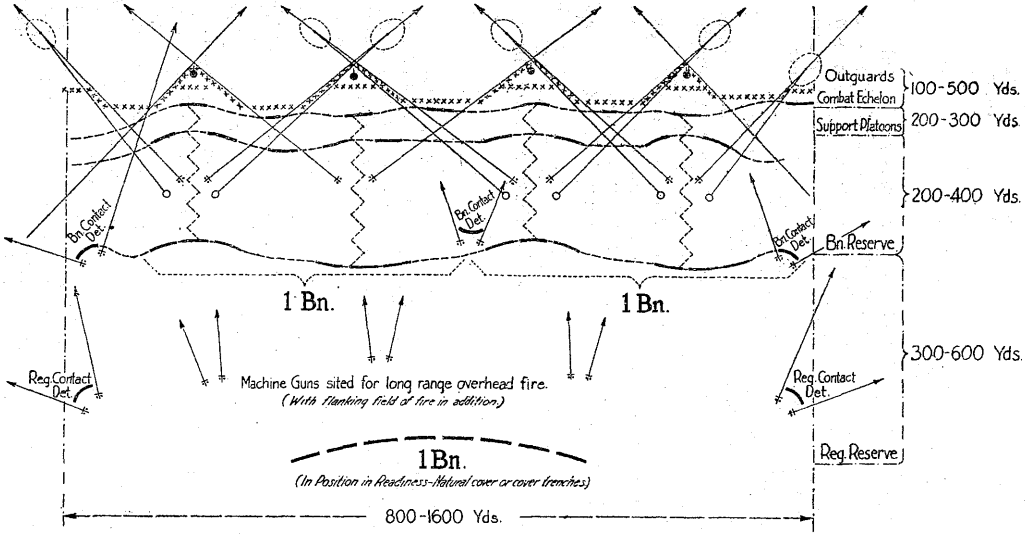
692. The reserve battalion utilizes the period of rest for the physical refreshment of the men, overhauling weapons and equipment, and instruction. The major makes detailed provision for the alarming and formation of the battalion in case of hostile attack (see paragraph 624).

14. THE REGIMENT

693. The regiment deploys for defensive combat with one or two battalions in first line and two or one battalions in reserve (Figure 4c). Exceptionally, all three battalions may be deployed abreast.

694. The attachment of machine-gun companies, light-mortar and one-pounder sections, and artillery pieces to battalions is made in accordance with the same principles as in the attack.

695. The colonel designates his battalions as combat battalions and reserve. He assigns sections of the line of resistance to his combat battalions and positions in readiness to reserve



INITIAL DEPLOYMENT OF REGIMENT IN DEFENSIVE POSITION

(Schematic-Nature of deployment controlled by ground and situation)

LEGEND

Combat Emplacements.
M.G Emplacements with direction of fire
Light-mortar with beaten zone.
Communication Trench
Outguards.
(One pounders not shown; employed as anti-tank guns, etc)

FIG. 4C

battalions. He details contact detachments for reinforcing the defense on the boundaries of his sector. He details such working and carrying parties from his reserve to assist in construction of works on the line of resistance and approach trenches as are necessary and not required for the construction of cover for their own protection. He locates his observation station, message center, and command post, and establishes communication (telephone, buzzerphone, runners, etc.) with his battalions and adjacent units. He employs his pioneer platoon for the construction of observation posts and shelter for his message center and command post. He allots matériel and personnel of the pioneer platoon, attached engineer units, and signal troops to his battalions. He supervises the tactical disposition of the troops and the construction of the position. He arranges for the support of the divisional artillery. He directs and supervises the service of supply of the regiment, and establishes depots of engineer matériel, ammunition, and other supplies. He establishes the regimental first-aid station.

696. When the front is not covered by other troops, the colonel prescribes such distant reconnaissance and details such combat patrols as may be necessary. He prescribes the construction of dummy works to be located in advance of the position.

697. Engineer troops assigned to a position work under the direction of the local commanders (regimental and battalion).

698. The responsibility of the regiment in respect to medical service and evacuation is in principle the same as prescribed for the offensive (paragraph 507). The organization of the medical service comprises : (1) local aid posts (about 1 litter squad) for the front of each combat company, near the support platoons ; (2) battalion aid stations near the battalion reserve ; (3) regimental aid station. All aid stations should be near the principal outgoing route of their unit. The local aid posts transport casualties to the battalion aid stations ; the regimental sanitary personnel from the battalion aid station to the regimental first-aid station.

Position Warfare

699. The colonel draws up the plan of defense of his sector. It is his duty to develop the sector for combat, shelter, and the maintenance of the health of the troops. He draws up a plan of work which he turns over to his successor on relief. He regulates internal reliefs within his regiment in accordance with

the arduousness of the service and with a view to maintaining the maximum fighting efficiency of the regiment.

700. The colonel prepares maneuver grounds, obstacle courses, and target ranges near the shelters of his resting battalion, and supervises the instruction of resting troops. He devotes especial attention to the instruction of his officers and noncommissioned officers and prepares tactical exercises for the troops, giving especial attention to exercises in open warfare.

701. When the regiment is deployed over two zones of resistance, the colonel fixes the boundaries between the zones of the first and second line battalions. All machine guns, light mortars, and one-pounders in the zone of each battalion are under the orders of the corresponding battalion commander.

702. The colonel fixes the direction of circulation in his sector by the designation of in and out trenches.

15. THE BRIGADE

703. The provisions of these regulations relative to the deployment of the brigade for attack apply in principle to the defense.

704. The brigade commander assigns missions (sections of line of resistance or sectors of his defensive area) to his regiments, allots them the necessary quotas of auxiliary troops, and retains a reserve (infantry, machine guns, etc.) under his direct control and prescribes its location. He details contact detachments for the purpose of reinforcing the defense of the position on his sector boundaries. He supervises the tactical dispositions of the troops and the construction of the position. He maintains close contact with the divisional artillery with a view to effective artillery support of the defense of the position. He requires commanders of reserve units to make detailed reconnaissance of the position and that of adjacent units in order to insure their effective intervention when their support is called for. He employs his reserve machine guns and attached artillery in support of the combat troops. He orders such distant reconnaissance and combat patrolling as the situation may require. He locates his observation station, message center and command post, in such manner as to permit of the most effective observation and communication during combat. He must at all times be in such close touch with his reserve that he can engage it in a timely manner. He maintains close touch with the division at all times.

16. MISCELLANEOUS

705. The regulations for intercommunication on the offensive (paragraphs 521-528) apply in principle to the defensive. The means of intercommunication at the disposal of regiments is usually considerably reinforced by attachment of divisional signal troops and personnel, and wire communication is extended to include the battalion and if practicable the company.

The regulations relative to infantry and airplanes (paragraphs 550-551) in offensive combat apply also to the defensive.

CHAPTER VI. — FIELD FORTIFICATIONS

706. Infantry must be capable of organizing its own positions and of executing the field works necessary for their defense. The elementary requirements demand proficiency in respect to the following :

(*a*) Proper siting of entrenchments (**tracing of works**).

(*b*) Construction of fire trenches and communicating trenches (**standard profiles**).

(*c*) Employment of troops in the **execution of field works.**

(*d*) Construction of **trench accessories.**

(*e*) Rapid construction of **wire entanglements.**

(*f*) **Camouflage.**

707. The location, extent, profile, garrison, etc., of field works are matters to be decided by infantry commanders. Officers must be able to choose ground and intrench it properly. Engineer troops may be assigned to advise and assist in laying out and preparing the position, but infantry commanders are not thereby relieved from responsibility for the action taken in the organization of the position.

1. TRACE

708. The term trace usually designates the horizontal projection on the ground of the firing crest. The firing crest should be as nearly horizontal as practicable and should therefore generally follow the contour of the ground. Considerations of drainage will, however, require a slight departure from the contour (see paragraph 714).

The protection acquired by digging a trench should be increased by choosing a trace that will avoid enfilade fire, and by means of traverses. Traverses serve as protection against enfilade fire and limit the radius of action of shells bursting in the trench. The extent to which traverses are required depends upon the character of the trace (Figures 5-8), and the extent to which the trench is subject to enfilade fire.

2. PROFILES

709. The character of the profile of a trench depends to a great extent on the probable permanency of the projected work. Trenches which are to be utilized for a considerable

STANDARD TRACES

Full lines indicate trace for Type B Trench
Dotted " " " " " A "

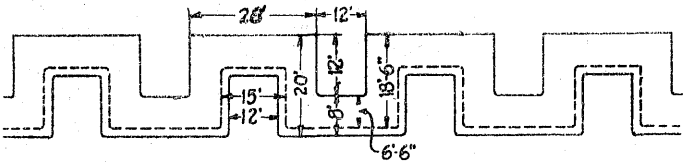


FIG 5
TRAVERSED TRACE

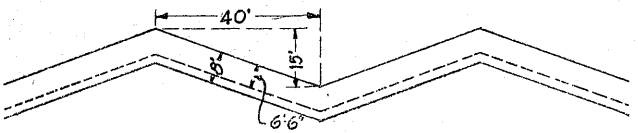


FIG 6
ZIG-ZAG TRACE

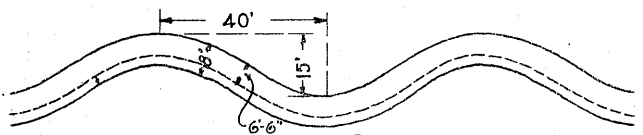


FIG 7
WAVY TRACE

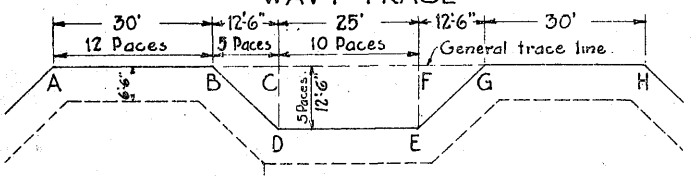


FIG 8
OCTAGONAL TRACE
(Method of Tracing indicated)

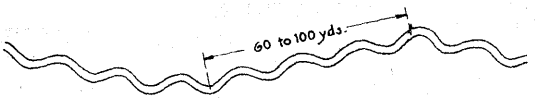


FIG 9
WAVY TRACE RIGHT
With both local and general irregularities



FIG 10
WAVY TRACE WRONG
No general irregularities

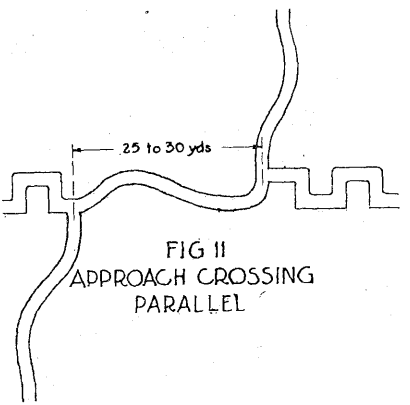


FIG 11
APPROACH CROSSING
PARALLEL

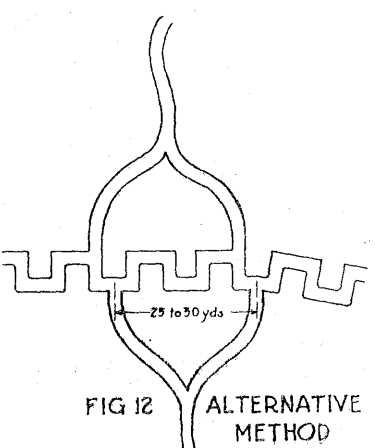


FIG 12 ALTERNATIVE METHOD

period should have a profile corresponding as nearly as practicable to the natural slope of the ground in order to reduce the amount of revetment required and avoid the caving in of the sides of the trench. In the construction of hasty cover, on the other hand, the object should be to obtain the most complete protection in the shortest possible time, and the slopes of the trench should be made as steep as the earth will stand and the width of the trench reduced to a minimum (Figure 12 a).

In permanent or semi-permanent works, **standard profiles** are necessary in order to permit of the construction at the rear of standard revetting matériel (*e. g.*, *A* frames, paragraph 730). The development of hasty cover into a trench of standard profile is shown in Figure 15.

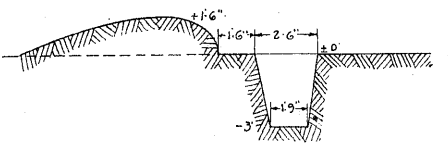


FIG 12a

710. The standard profiles for fire and communicating trenches shown in Figures 13-19 are based upon the following principles :

(*a*) The elevation of 4 feet 6 inches between the interior crest and the banquette affords a good firing position for a man of average height.

(*b*) During its construction, the trench may naturally be used to a greater or lesser extent, depending on the degree of completion. An excavation of 2 feet 6 inches, together with the parapet, gives a total cover of 3 feet, which is suitable for firing from a kneeling position. This, however, is only one phase of the construction ; except during a momentary halt, the final aim is always to make the trench suitable for firing from a standing position.

(*c*) The distance of 6 feet 6 inches between the interior crest and the bottom of the trench permits natural walking without being seen.

(*d*) The width of the trench at the bottom (2 feet) permits convenient circulation behind men on the banquette.

(*e*) The dimensions of the communication trench — 7 feet of

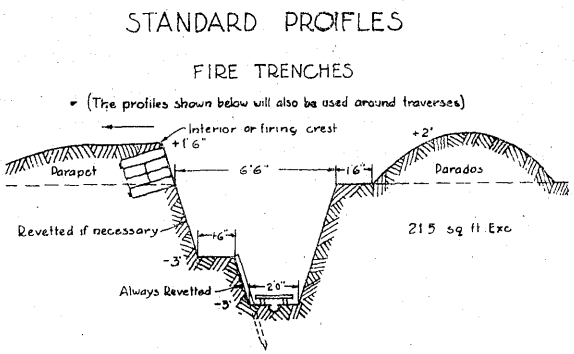


FIG 13 TYPE A
(For use without "A" frames)

total cover — permit convenient circulation with good protection.

(*f*) Berms are indispensable for preventing the sides from

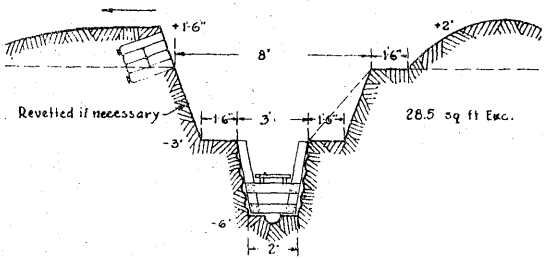


FIG 14 TYPE B
(For use with "A" Frames)

caving in under the pressure of the excavated material; a width of 1 foot 6 inches is the minimum.

The standard profiles will often be modified, particularly with reference to the following :

Decreasing the width thereby reducing the amount of excav-

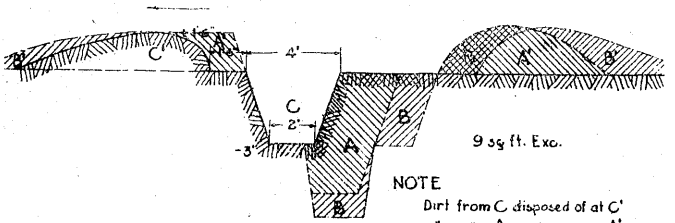


FIG 15
Simple Standing Trench
(Showing development into Standard
Fire Trench-TYPES A & B)

ation and increasing the protection for temporary or hastily constructed works ;

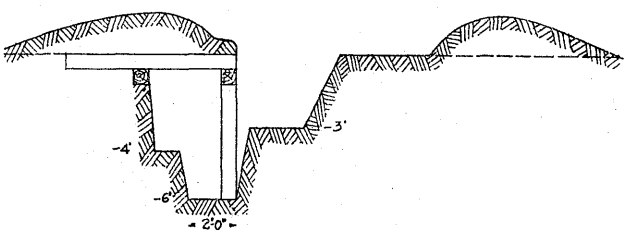


FIG 16
Standing trench with splinterproof

Increasing the relief of the parapet so as to have a better view from the trench ;

Decreasing the depth of the excavation (and consequently increasing the relief of the parapet) necessitated by the presence of water or rock near the surface ;

COMMUNICATION TRENCHES

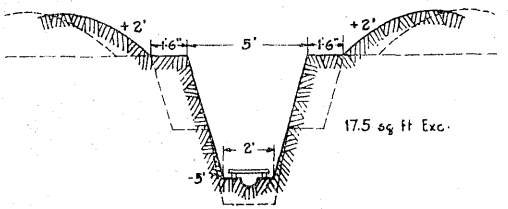


FIG 17 TYPE A
(For use without A Frames)
(Also shows development to TYPE B)

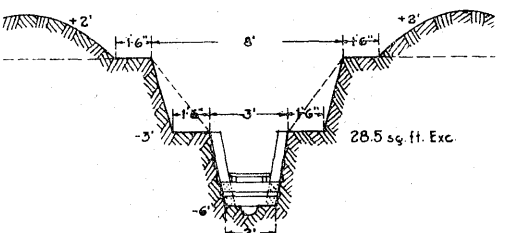


FIG 18 TYPE B
(For use with A frames)

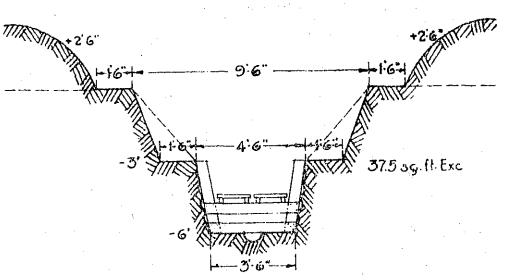


FIG 19 TYPE C
Broad Communication Trench

Decreasing the width in very hard soil, which permits the trench to have steep sides ;

Removing the excavated material from the edge of the excavation (trench without parapet, deep communication trench) or the use of an underground communication trench (Russian sap), where it is especially desirable to avoid being seen ;

Need of protecting certain parts of the communications from hostile view and fire (covered communication trench).

Using natural cover (ditches, slopes, shell holes, etc.) ;

Increasing the width of the evacuating (" out ") approaches and decreasing the width and depth of the secondary approaches.

3. EXECUTION OF FIELD WORKS

711. The execution of a field work comprises :

(*a*) Reconnaissance of the position ; (*b*) tracing on the ground of the lines which determine the horizontal limits of cutting and embankment, or establishment of trace by other method (*e. g.*, stakes, compass bearings, par. 722) ; (*c*) placing reliefs on the work ; (*d*) actual construction of the trenches.

712. The construction of a field work should be preceded by a reconnaissance varying in extent with time available and the tactical situation. The objects of the reconnaissance are : (*a*) to determine the field of fire which must be covered and the flankings ; (*b*) to determine the natural strong points of the position and the points of especial weakness ; (*c*) to fix the general location of the lines with reference to the field of fire and the flankings and the requirements of drainage ; (*d*) to compute the labor, tools and material required for the construction of the position. When practicable, a sketch should be prepared on the ground, showing the general location of the different lines, the observing stations and command posts, and other special works.

713. According to the situation, entrenchments are constructed either by **working along the line** or by **working from the ends.** The former method will generally be employed when not actually under fire. When exposed to hostile fire, the men dig in on the trace of the work so as to obtain cover in the most rapid manner possible and then work toward each other from the ends. Working from the ends is also resorted to in pushing out saps from an existing trench and in joining up sap heads so as to establish a new advanced parallel.

Working along the line

714. The trace is actually established with reference to the required field of fire by placing the eye at the level of the interior crest.

A tracing party for a field work to be held by a company should consist of an officer, a non-commissioned officer, and three or four men, equipped if practicable with white tape, stakes, and mallets. The tape is used to locate on the ground the intersection of the cut and elbow rest. As a general rule, only the firing bays are staked out at the preliminary tracing, intervals for traverses being left between successive bays. In leaving space for traverses, a minimum thickness of three yards

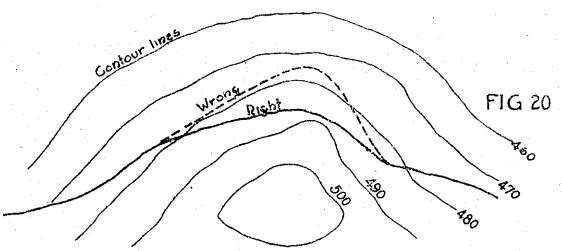


FIG 20

Siting trenches to eliminate low spots.

should be allowed. Where tape is not available, the trace may be marked with stones or stakes or by digging a small channel with a pick.

When practicable, both cutting edges of the trench should be traced.

When practicable, care should be taken to site trenches so that all parts can be easily drained toward natural points in the line, avoiding any unnecessary sag which will be difficult to drain later. Trenches should never run exactly along a contour line but should be given enough slope to carry the water in a prearranged direction. Trenches should not be located in marshy or boggy ground, unless it is absolutely unavoidable. Communication trenches should not be located in the bottom of valleys or gullies but should run along the side slope above the bottom. (Figure 20).

715. After the tracing has been completed, the work is divided into tasks by means of marks made on the ground with a pick. The length of tasks depends upon the method of grouping the working details. In easy soil, the proportion should be 1 pick to 2 shovels, and the working groups should be composed of three men each. In harder soil, an equal proportion of picks and shovels should be allotted, and a working group will consist of two men. Working groups of three men should be allotted about 15 feet of front, groups of two men about 10 feet.

716. The unit assigned to the construction of the work should, as far as practicable, be divided into reliefs on the basis of tactical organization. A company should, for example, be divided into two reliefs of two platoons each, or three reliefs of one platoon each reinforced by units of the fourth platoon. The amount of work to be done by each relief should be plainly indicated; officers and noncommissioned officers are responsible that the men do the quantity of work assigned them. As soon as any unit (squad, platoon, company, etc.) has finished its task, it should be relieved.

717. Tasks should be allotted in terms of volume of excavation. In the allotment of tasks, the following data may be taken as an approximate basis: The capacity of the average man for continuous digging does not exceed 80 cubic feet for easy soil, 60 cubic feet for medium soil, 40 cubic feet for hard soil. He will do three-eighths of this the first hour, five-eighths in the first two hours, and the other three-eighths in another two hours. When contact with the enemy is probable, tasks should be assigned which can be reasonably expected to be completed in a period of two hours in order to conserve the fighting capacity of the troops. For the first relief, the soil is apt to be loose and the lift is less, so that a slightly greater task should be given to it than to succeeding reliefs. Assuming men at 5-foot intervals, the number of hours work required to dig a trench is the section of the trench in square feet divided by 5 for easy, 4 for medium, and 2 1/2 for hard soil.

718. In the construction of trenches, arrangements for drainage should, when practicable, be made from the beginning. A drainage ditch or sump should be started before the digging of the trench commences, and the progress of its excavation maintained in advance of the trenches draining into it. The excavation of the trenches should be directed up-grade, when practicable, so as to avoid the formation of undrained pockets in the bottom of a partially completed trench. Gutters for

intercepting surface water and conducting it to the natura

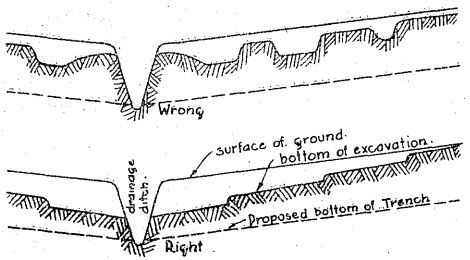


FIG 21

Longitudinal section of Trench under construction.
(Showing manner of excavating Trenches so as to insure proper drainage)

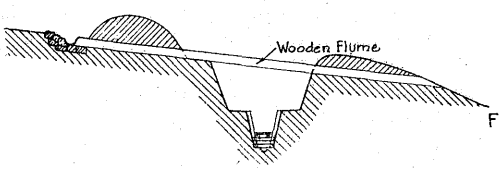


FIG 22

Surface water carried over the Trench.

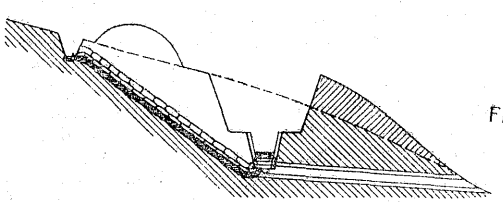


FIG 23

Surface water carried under the Trench.

water courses should be provided on the up-hill side of the trenches (Figures 21-23).

719. To place a relief on the work, the units constituting the relief approach the tools in column of files, rifles slung, and pass between the pile of tools, shovels on the right, picks on the left. Each man receives a tool as he passes.

The column proceeds to a flank of the trace of the work and

forms line parallel to and about three paces in rear of the rear cutting line, men at about 5 feet interval. This interval is most conveniently established by having men extend arms horizontally and touch hands. Each platoon is assigned a particular part of the line and goes to it and deploys independently. If the line is long, guides should be furnished to direct the head of each column to the point where its deployment is to begin. At night, guides must always be furnished.

720. As soon as the men are posted, the pick men start tracing the limits of their tasks (unless already marked), digging a small furrow along the white tape and then marking the lateral and rear limits. The men then strip the sod or spade off a slight thickness of earth from the width of the excavation. The sod may be used to form a mask or small parapet or laid aside for subsequent use in revetment or for sodding the parapet when completed. If it is necessary to provide cover rapidly, the men at once dig in depth so as to get some cover as quickly as possible. As a general rule, the excavation should be begun with a width slightly less than that desired. When completed, the walls are dressed up to the desired width.

When work is done at night in the presence of the enemy, men must keep absolute silence, lie down immediately on the ground when a rocket goes up, and resume their work when the light has disappeared.

Separate working groups should be assigned to the construction of the trenches around traverses. Unless labor is abundant, their construction should generally be deferred until the fire bays are completed.

Working from the Ends

721. Working from the ends is a slow operation, but it permits working at points and at times when working along the line is impossible. The construction may be accelerated by : (*a*) doubling the working parties (shifts working at high pressure and relieving each other at frequent intervals, *e. g.*, every yard of trench) ; (*b*) by working in two stages (*i. e.*, one group digging to a certain depth, followed by a second group excavating to full depth).

In zones swept by hostile fire, working along the line and working from the ends are employed alternately. The following examples illustrate the application of this method of work :

(*a*) We hold the front *A B* and wish to establish ourselves at *C D* (Figure 24). It is assumed in this case that working along the line is impossible during the day but may be carried

out at night, and that working from the ends is possible during the day.

The work may be executed as follows :

First night : constructing, by working along the line, the

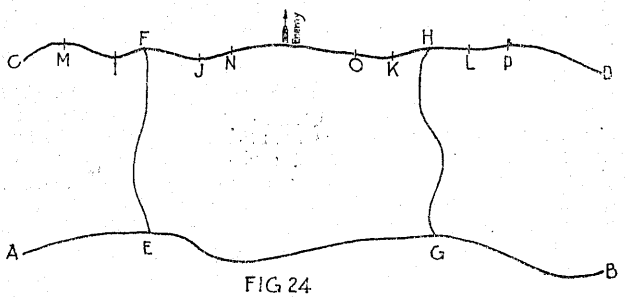


FIG 24

approach trenches *E F* and *G H*, and the elements *I J* and *K L* of the parallel.

First day : continuing the work of the first night by constructing the elements *M I*, *J N*, *O K*, *L P* (working from the ends, 4 shifts).

Second night : constructing the element *N O* (working along the line).

Second day : continuing the work of the second night.

(*b*) As another example, we desire to construct an element

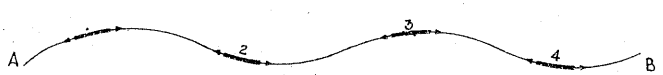


FIG 25

of a parallel or of an approach trench *A B* (Figure 25) on ground where working along the line is too dangerous, even at night.

The procedure is then as follows : instead of beginning work on the entire length *A B* at the same time, we begin with small groups, such as squads, separated and working at 1, 2, 3, and 4. These groups dig themselves in as rapidly as possible by working along the line. Once they have a sufficient cover, each group separates into two parts which work at both ends of the excavation (working from the ends) under the cover already dug.

722. When working from the ends in one stage, the method of work is in general as follows :

Each working party consists of one noncommissioned officer,

leader of the party, and 4 workmen grouped into two shifts which relieve each other every yard. For continuous work, night and day, the working party should comprise 1 sergeant, 1 subordinate leader, and 12 men, thus providing three reliefs of 8 hours each.

In each shift, No. 1 is the digger and No. 2 the shoveler ; at each shift, they change their posts, No. 2 becoming No. 1, and vice versa. No. 1 is supplied with a short-handled pick mattock, a short-handled shovel, and measuring sticks for testing work. No. 2 is supplied with an ordinary shovel. The working party is, in addition, provided with 1 extra pick, 1 extra shovel, and 5 stakes.

The sergeant in charge of the party sees to it that the trace is followed and that the dimensions are correct.

When beginning work, each shift marks with a stake the spot at which it is to begin.

If the excavation has not been marked out beforehand, the

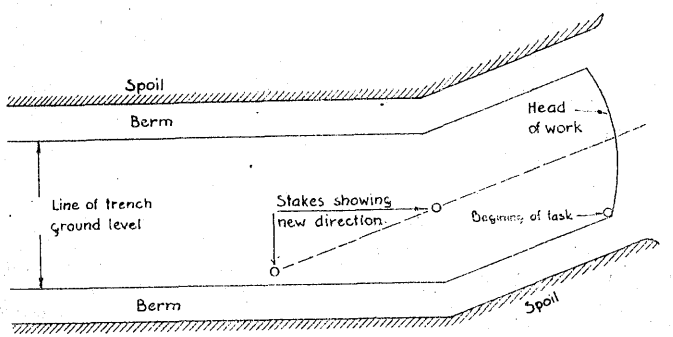


FIG 26

sergeant marks out the center line of the element to be constructed by means of stakes set at the bottom of the trench (Figure 26).

No. 1 (digger) works at the head of the excavation. He digs it to the final width and depth. First, from a squatting or kneeling position, he digs two grooves to the depth of the pick-blade half-way up the excavation, keeping in line with the two walls and preserving the banquette, if it is to be a fire trench ; he then digs away the earth between the two grooves with the pick ; he passes the earth between his legs by means of the short-handled shovel and scrapes the bottom so as to keep the trench

at the correct depth. He then digs the upper part of the trench by marking two grooves, right and left, up to the surface of the ground, digs away the earth thus undermined with his pick and passes it to the rear as described above.

He thus advances by elements of 1 to 1 ½ feet, and at intervals, verifies the dimensions by means of the notched stick.

No. 2 (shoveler) throws the earth on both sides and is careful to leave the berms.

Nos. 1 and 2 may exchange posts at the middle of the task.

When in danger of enfilade fire, it is necessary to protect the head of the work by a head parapet of sandbags, gabions, or metal shields. These are placed about 1 ½ feet in front of the head of the work by Nos. 1 and 2 and are pushed forward by hand or with the tools as the work progresses.

As soon as one shift has finished its task of one yard, the

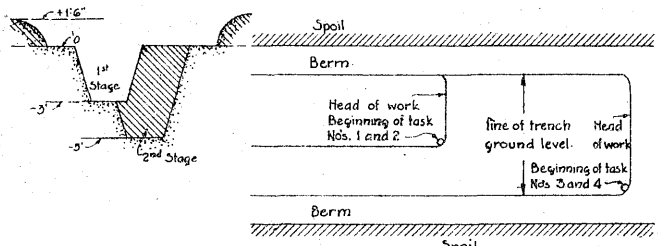


FIG 27

sergeant in charge of the work orders, " Change, " and the shift lays down its tools and is replaced by the second shift.

Working from the ends in two stages is executed in accordance with the following method (Figure 27) :

Each party consists of a noncommissioned officer in charge of the work and 8 men, divided into two shifts which relieve each other every yard. When the work is to be continued day and night, the working party should comprise one sergeant, one additional leader, and 24 men, thus providing 3 reliefs of 8 hours each.

In each shift, the men are numbered from 1 to 4 ; Nos. 1 and 3 are diggers, and Nos. 2 and 4 shovelers ; at each shift, Nos. 1 and 2 change posts with Nos. 3 and 4.

Nos. 1 and 2 work at the head ; they dig the first stage 3 feet deep. They have the same tools as Nos. 1 and 2 in the case of working in one stage. No. 1 is, in addition, supplied with a measuring stick.

Nos. 3 and 4 work three yards behind the head of the work ; they deepen the first stage to the correct depth and widen it. They distribute the excavated material on both sides, being careful to leave berms of the correct width (1 foot, 6 inches). No. 3 is equipped with a pick mattock and a measuring stick ; No. 4 with a shovel. Each working party is, in addition, supplied with 1 extra pick mattock, 1 extra shovel, and 5 stakes.

4. ACCESSORIES OF TRENCHES

Revetment

723. Revetment comprises any artificial means provided to cause earth to stand at a slope steeper than it would naturally assume.

It is used in the construction of parapets, trenches, and other field works. Its too extensive application is objectionable on account of the great amount of time, labor, and material required, and can often be avoided by widening and sloping to a safe angle the sides of existing trenches as well as by the provision of berms or shelves at various levels (see Figures 13-19 for trench profiles requiring little revetting).

724. The main principle in revetting trenches is to revet only the lower two or three feet. This portion of trench is seldom injured by the enemy's fire, while higher revetting requires more time, labor, and material, and will almost certainly block the trench if damaged by shell fire. High revetment should be limited to the repair of damage to the trench.

725. The best method of revetting trenches is :

(*a*) Use standard *A* frames, spaced 3 feet center to center and supporting sheets of corrugated iron, expanded metal, planks, or brushwood (Figure 30).

(*b*) If *A* frames are not available and the soil permits, the revetment may be supported by means of pickets driven into the bottom of the trench and braced as shown in Figure 31.

(*c*) The sides of the trench above the revetment should be cut to a slope of about 3/1, leaving a berm of 18 inches on each side at the foot of the unrevetted slopes.

The order in which the revetment of trenches should be undertaken is as follows (Figures 13, 14, 18) :

(*a*) Revet the *fire step* and the interior slope of the *parapet* in fire trenches.

(*b*) Revet the lower two or three feet in communication trenches.

(*c*) Revet the lower two or three feet of fire trenches above the fire step, if necessary.

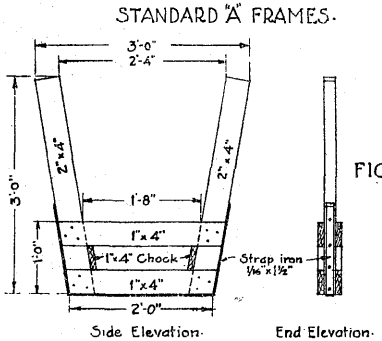


FIG 30

STANDARD "A" FRAME
Spaced 5' center to center

726. There are two general types of revetments :

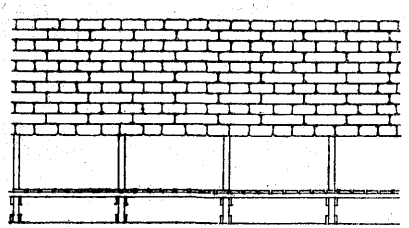
(*a*) The *retaining wall* type, which is self-supporting and is best suited to *fills*.

(*b*) The *superficial* type, which must have independent supports and is best suited to *cuts*.

Retaining Wall Type

727. As revetments of this type must be self-supporting, they should always take the form of a properly built retaining wall, *i. e.*, the thickness at any level should be at least one-half the remaining height and the average thickness not less than one-third of the total height.

728. *Sandbag revetment* is easily and quickly constructed, gives no splinters from shelling, and is especially useful for



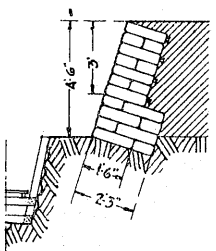


FIG 28

SANDBAG REVETMENT CORRECT METHOD

emergency work, for repairs, and for crowning. In laying sandbags, attention should be paid to the following points,

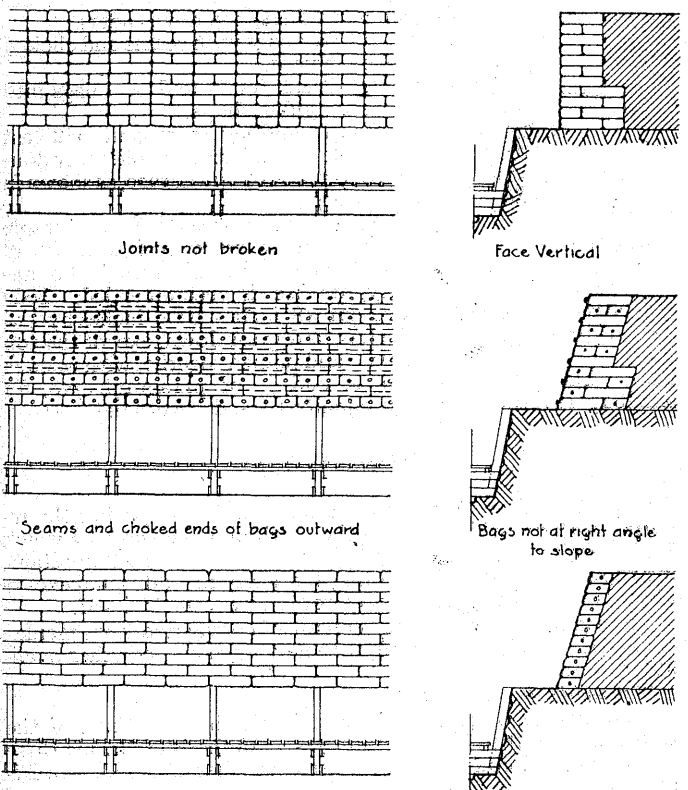


FIG 29

SANDBAG REVETMENT INCORRECT METHOD

some of which are illustrated in Figures 28 and 29.

(*a*) Tuck in bottom corners of bags before filling.

(*b*) Fill bags uniformly about three-quarters full.

(*c*) Build revetment at slope 4/1.

(*d*) Lay bags with beds perpendicular to slope.

(*e*) Lay bottom row as headers on prepared bed, intermediate rows alternating headers and stretchers, top row headers.

(*f*) Lay bags with seams and choked ends inward.

(*g*) Break joints and beat bags into a rectangular shape.

(*h*) A sandbag revetment will last much longer if netting, preferably doubled, is placed over the face, as shown in Figure 32.

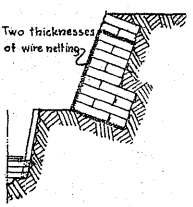


FIG 32
SANDBAG REVETMENT REINFORCED

729. *Sod revetment* is more durable than sandbag revetment, and where sod can be obtained in sufficient quantity, its use is recommended. Sods are cut 18 inches by 9 inches by 4½ inches, laid grass down, except the top layer, and pinned together with wooden pegs. The principles *c*, *d*, *e*, and *g*, of paragraph 728, for snadbag revetment, apply equally to sod revetment.

Superficial Type

730. This form of revetment consists of two parts : the *revetting material* which retains the earth and the *supports* which hold the revetting material in place. It is most useful in retaining the slopes of trenches, since practically no additional excavation is needed to afford space for the revetment itself.

The *revetting material* may consist of corrugated iron, planks, expanded metal, brushwood, wire netting, poles, or other available material.

The *supports* may be :

(*a*) *Standard A frames*, for use in the bottom third of the trench as described in paragraph 725. Methods of placing these frames around corners in traversed trenches are shown in Figure 34.

(*b*) *Anchored revetting pickets*, for use in revetting front slopes of fire trenches or in other special cases where high revetment is required.

Revetting pickets should be from 3 inches to 3 ½ inches in diameter, straight, pointed at the small end, and driven into the ground from 1 to 1 ½ feet.

Anchor stakes should be driven firmly into solid ground 8 to 10 feet from the edge of the trench, staggered so as to avoid a plane of weakness parallel to the trench, and inclined so as to be perpendicular to the direction of pull on the anchorage wire.

Anchorage wires should pass at least 4 or 5 times between picket and stake. Each time, take a round turn around the top

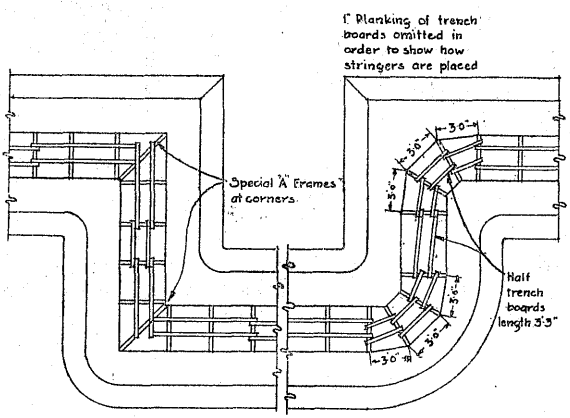


FIG 34
TWO METHODS OF PLACING A FRAMES AROUND CORNERS OF TRAVERSED TRENCH

of picket or stake and then tighten with a rack stick or windlass.

(*c*) *Unanchored revetting pickets* for use only with low revetments such as fire steps. They are supported by being driven from 2 to 2 ½ feet into the ground and must always be braced at the ground level as shown in Figure 31.

(*d*) *Struts* resting against opposite walls of the trench for use only in narrow deep trenches, such as shell slits (Figure 33).

731. *In placing wire-netting revetment,* the following procedure should be observed :

(*a*) Cut vertical grooves in the slope at about 3-foot intervals to hold revetting pickets.

(*b*) Drive the two end pickets of each bay first and anchor them back loosely.

(*c*) Stretch a double thickness of wire netting taut between the two end pickets.

(*d*) Tighten anchor wires so that the end pickets set back into their grooves.

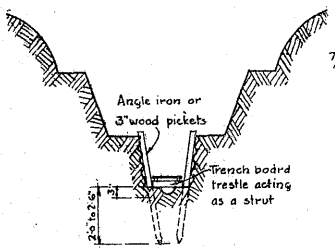


FIG 31
BRACED REVETTING PICKETS

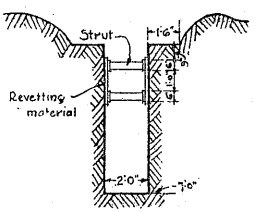


FIG 33
SHELL SLIT

(*e*) Drive the remaining pickets and anchor them back so that they set into the grooves, thus drawing the wire netting tight against the surface to be revetted.

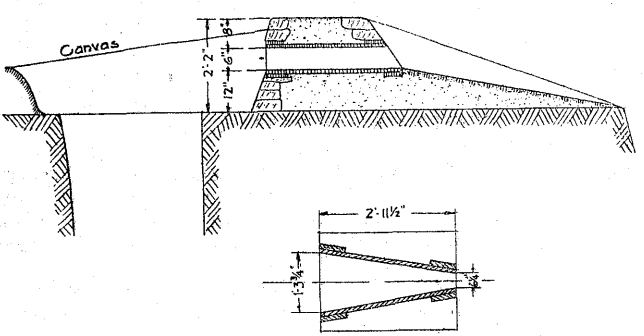


FIG 35 Loophole of Wood

732. In placing *brush revetment,* the following rules should be observed :

(*a*) Brush should be clear of leaves and is best about 3/4 inch in diameter.

(*b*) Pickets should be driven in at about 3-foot intervals, leaving from 4 to 6 inches behind them for the brush.

(*c*) When brush has been built up to the top, pickets should be firmly anchored back, drawing the brush close against the slope to be revetted.

Lookout Posts

733. When located in a trench, *lookout posts* usually consist of niches dug in the interior slope of the trench and covered

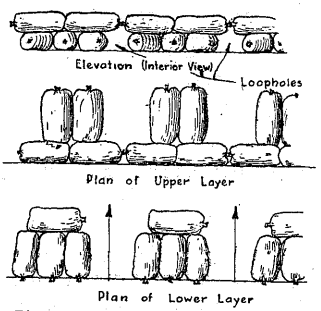


FIG 36 Loopholes of Sandbags

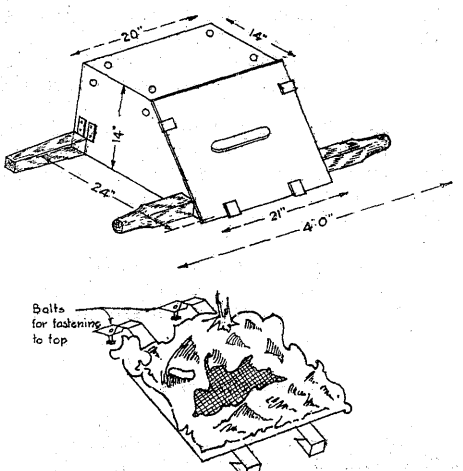


FIG 38 PORTABLE ARMORED OBSERVATION POST

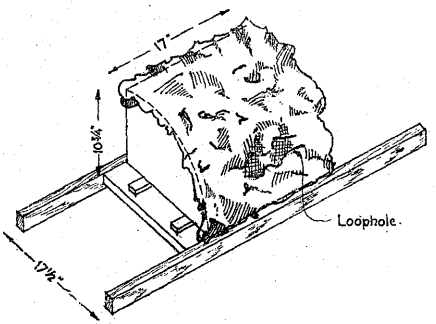


FIG 39 ROLL TOP STEEL OBSERVATION POST

from the rear by a sandbag wall and on top by a splinter-proof layer (boards or logs with a top layer of sand bags).

734. The loopholes are reserved for the lookouts for watching the enemy and for harassing fire ; during combat, the men fire over the parapet. Loopholes are made of wood, sandbags, metal shields, etc. (Figures 35, 36, 38, 39).

The exterior opening should be concealed by a cord trellis-work or other means that will allow the barrel of the rifle to protrude.

It is essential that the enemy should not be able to distinguish whether the loophole is manned or not. The loophole must not therefore have as a background the sky, or a wall, or other object whose color contrasts with that of the trench. A cloth may be hung behind the head of the lookout to furnish the background.

Whenever possible, the loophole should be oblique with respect to the enemy's trench ; the lookout is better protected, and the loophole is less visible (see Figure 56, page 139).

Miscellaneous

Plans for automatic-rifle positions, snipers posts, ammunition recess, and latrines are shown in Figures 37, 40, 41, and 42.

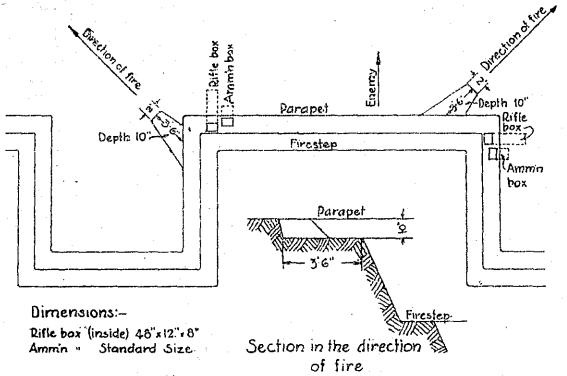


FIG 37
AUTOMATIC RIFLE POSITIONS

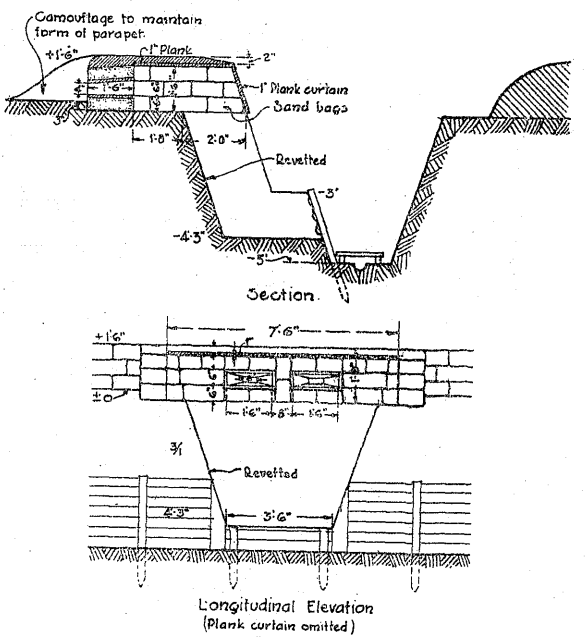
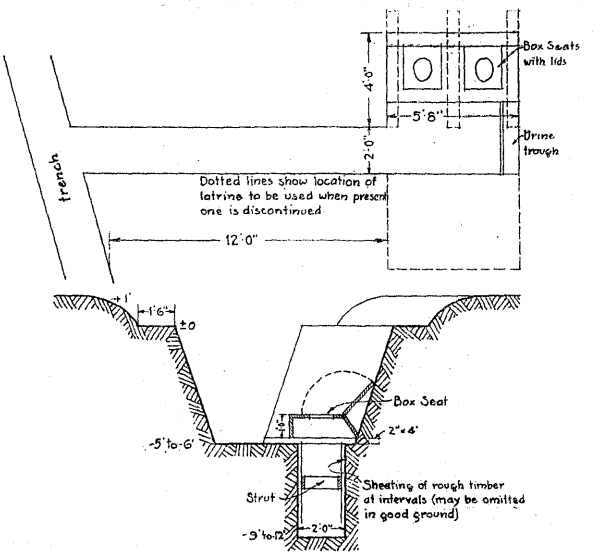
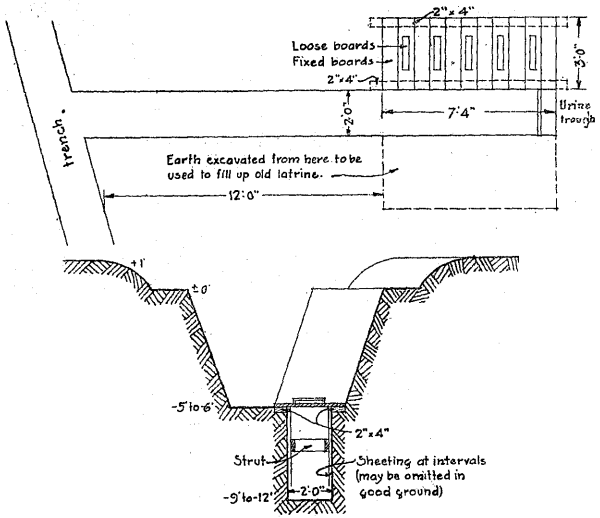


FIG 40 SNIPERS POST.



DEEP LATRINE BOX SEAT TYPE



DEEP LATRINE STRADDLE TYPE
FIG 42

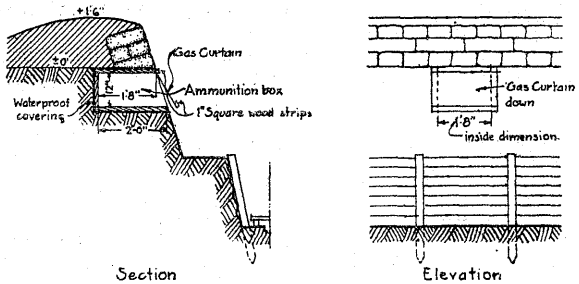


FIG 41
STANDARD AMMUNITION OR GRENADE BOX

5. WIRE ENTANGLEMENTS

735. Infantry will be trained in the construction of low wire entanglements, the double-apron fence, and portable wire obstacles (pars. 742, 743, 744).

General Principles

736. Barbed-wire entanglements should be located in accordance with the following principles :

(*a*) They must be covered at every point by our own rifle or machine-gun fire, either frontal or enfilade. Special emphasis must be laid on the principle that the entanglement and machine-gun positions should be so sited with reference to each other that the front of the entanglement is swept by the fire of machine guns. This is the most important consideration in siting barbed-wire entanglements (see Figure 43). Obstacles have no inherent value of their own; they serve only as an auxiliary to the fire power of ths troops. If the attack succeeds in neutralizing the troops behind the wire, the entanglement is valueless.

(*b*) They must not be so far from the trench that they cannot be kept under observation and control at all times, especially at night.

(*c*) They must not be so close to our own trench as to permit the enemy to approach to bombing range of the position

without being discovered. A distance varying from 30 to 60 yards will generally be most suitable.

(*d*) They must be concealed as much as possible from the enemy's observation both terrestrial and aerial, especially

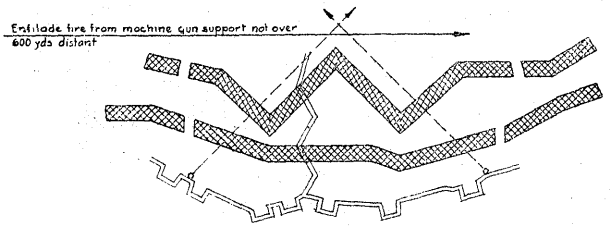


FIG 43 ENFILADE OF ENTANGLEMENT

from his ground artillery observation stations. Full advantage should be taken of depressions in the ground, tall grass, woods, and reverse slopes.

(*e*) The belt of wire should, as far as possible, avoid paralleling the fire trench ; and in addition it should be irregular in width and height. The first consideration will prevent the enemy artillery from ranging on the trenches to destroy the entanglement ; the second, from knowing definitely when the wire has been destroyed.

Special precaution must be taken in locating the entanglement to avoid indicating the manner in which the ground is occupied.

Design

737. The following principles govern the design of the entanglements :

(*a*) Within limits, a broad, thin entanglement is better than a narrow, thick one ; the former, while equally effective, is less liable to destruction by artillery fire, as well as less visible.

(*b*) Two belts of entanglements, separated by a space of from 10 to 50 yards, are better than the same amount of entanglement in one belt.

(*c*) The entanglement must be well supported and anchored to the ground by means of pickets and posts, so as to be difficult to flatten out or drag aside.

(*d*) Sufficient barbed wire must be used to prevent easy

penetration. Some loose tangled wire in the entanglement is difficult to clear aside after the wire is cut.

(*e*) The entanglement should be provided with blinded gaps for the passage of our men. A gap of about twelve feet in every fifty yards is usually left. Means to block the gaps must be at hand (Fig. 44 and 52).

(*f*) The entanglement should present in its first stages an

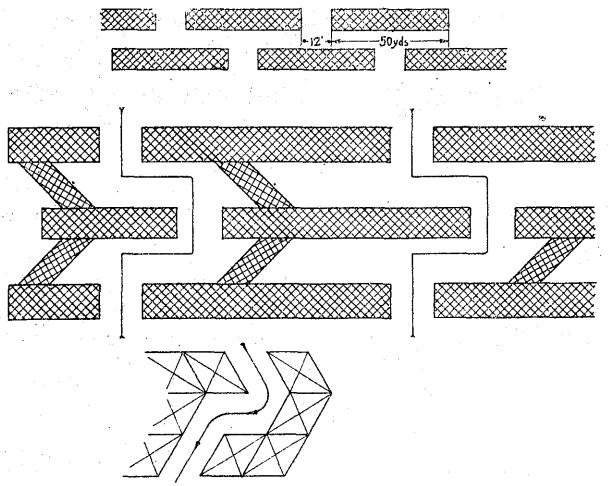


FIG 44 GAPS IN BELT OF WIRE

obstacle behind which the wiring party can work under protection and which can be subsequently added to and improved as desired.

Matériel

738. The following data is descriptive of the matériel employed in the construction of entanglements :

(1) *Barbed wire* :

(*a*) Length. — The length of wire on a reel varies from 50 yards to 100 yards. Reels will, if possible, be issued in standard 50-yard lengths.

(*b*) Weight. — The weight including drum is about 28 pounds for the 100-yard reel and 15 pounds for the 50-yard reel.

(*c*) Marking end of wire. — The plain wire securing a reel of barbed wire must be cut, and a piece of sandbag or white cloth tied to the running end, in order that there will be no difficulty in finding it at night ; the pieces of tin on the wooden drums must be broken off to prevent noise. These prepara-

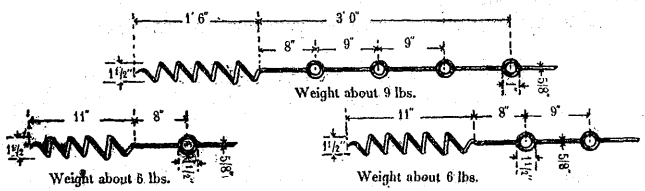


Fig. 44a.

tions must be made before the matériel is taken out for work

(2) *Pickets* :

(*a*) Wooden

	Long	Short
Length	5 ft.	2 ½ ft.
Diameter	3 to 3 ½ in.	2 ½ to 3 in.

(*b*) Screw (See Fig. 44 *a*)

	Long	Medium	Short	Anchorage
Length	5 ft.	3 ½ ft.	1 ½ ft.	
Diameter	⅝ in.	⅝ in.	⅝ in.	
Weight	9 lbs.		6 lbs.	3 lbs.

(*c*) Angle iron

Length ... 5 ft. 10 ½ in. and 3 ft. 6 in.
Weight .. 10 lbs. and 6 lbs.

(*d*) All bundles of screw and iron pickets should be prepared for carrying by being wrapped with a sand bag and secured in at least two places by a turn of plain wire with the ends twisted together. Enough wire must always be left at the ends so that it can be untwisted by hand without pliers.

(*e*) Bundles of long wooden pickets should be tied together in at least two places with plain wire. Short wooden pickets are best carried in sand bags, eight in each bag ; two bags are tied together and slung over the shoulder.

(3) *Wire cutters* :

It very seldom occurs that there are enough wire cutters to give a pair to every man in a wiring party, which consists of not more than 25 men. If stores have been properly prepared beforehand, there is no necessity for more than two pairs

to each party, which should be carried for use in emergency.

(4) *Mauls* :

Coiled rope should be fastened on end to deaden sound

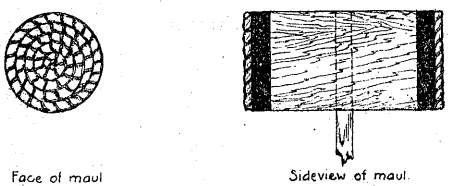


FIG 45 COILED ROPE ON MAUL

(Figure 45). Where rope is not available, sandbags should be carried for use as mufflers on heads of pickets.

739. The task of throwing loose wire into an entanglement

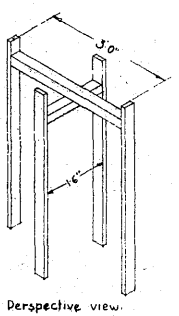


FIG 46 - FRAMEWORK FOR MAKING SPIRALS

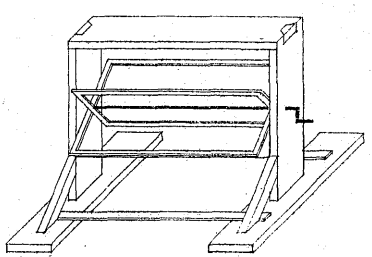


FIG 47 WINCH FOR MAKING SPIRALS

is a long and tedious one. It is made very much easier and quicker if the wire is coiled in a spiral beforehand. Spirals are prepared in accordance with the following method :

Drive two 3-foot stakes, 3 feet apart, and two more at right angles to the first two, 1.5 feet apart (Figure 46). Then wind 75 yards of barbed wire around the diamond-shaped frame work thus formed, gradually working it up the stakes in a spiral. Finally, take the spiral off the stakes and tie it together in four places with plain wire.

A man can easily carry a spiral thus made on his shoulder in a trench.

740. The following are convenient approximations of man loads :

	Number	Average total weight
Wooden pickets (long)	4	
(short)	16	
Screw pickets (long)	4	36 lbs.
(medium) ...	6	36 lbs.
Angle-iron pickets (long) ...	4	45 lbs.
(short) ..	6	27 lbs.
Barbed wire—100-yard reel	1	28 lbs.
50-yard réel	2	30 lbs.
Loose wire—spirals.....	1	20 lbs.
Anchorage pickets.....	8	26 lbs.

Time and men required

741. The following table, showing time and men required to construct the different standard entanglements, is based on the assumption that work is carried out under the following conditions, with good average parties, not picked men :

(*a*) Stores are taken up by a separate carrying party as far as the fire trench only.

(*b*) The entanglement is erected 40 to 50 yards from the fire trench ; stores have, therefore, to be carried out that distance by the wiring party.

(*c*) Men work equipped to meet attacks.

Pattern and Length	Wiring party		Carrying party		Average time by daylight	Average time by night
	N. C. O.	Men	N. C. O.	Men		
50 yards low or kneehigh wire.	1	7	1	17	30 min.	1-1 ¼ hrs.
50 yards double-apron fence	1	9	1	15	30 min.	¾-1 hr.

The size of the carrying parties should be so regulated as to avoid delaying the wiring party on account of lack of material. The carrying parties defined in above tables can carry *at one trip* sufficient stores for fifty yards of entanglement. If more than fifty yards are to be constructed and all the material is to be carried in one trip before the wiring party commences work,

the carrying parties must be proportionately increased. If for example two hundred yards of entanglement are to be constructed, a carrying party of four times the strength of that given will be necessary. If, on the other hand, the wiring party is to be supplied by *repeated trips* of the carrying party, the amount of wire carried at each trip must be sufficient to supply the wiring party until the next return of the carrying party, and the time required for the round trip to the matériel depot must therefore be considered. If, for example, the round trip to the matériel depot requires one hour and the length of the entanglement is two hundred yards or more, the strength of the carrying party required will be twice that given in the table.

For long lengths of entanglement (over 100 yards), a small additional carrying party of three or four men is formed to supply the wiring party with material from the fire trench and to serve as replacements for casualties.

Description of the Standard Obstacles

Low (or Knee-High) Entanglement

742. This entanglement (Figure 54) consists of three rows of medium pickets, a horizontal wire along the top of each row, one diagonal wire in each of the two bays formed by the three rows, and finally loose wire thrown into the bays.

It is not a very effective entanglement ; its chief value lies in the fact that it is not conspicuous. It is the slowest entanglement to erect at night, if screw pickets are used, as the latter are very hard to find. This difficulty can be overcome by laying down a spun yarn line or tracing tape.

Double-Apron Fence

743. This entanglement (Figure 55) consists of four horizontal strands on the fence, and three (including the trip wire) on each apron.

Belts of double-apron fences form an excellent framework for a wide obstacle ; loose wire can be thrown in between the bays for thickening purposes.

Portable Wire Obstacles

744. These special forms consist of various different shapes of framework upon which barbed wire is strung. They are used :

(*a*) To block gaps in the entanglement.

(*b*) As an emergency obstacle thrown out in front of the trenches.

(*c*) To barricade narrow streets in defended villages and trenches leading toward the enemy.

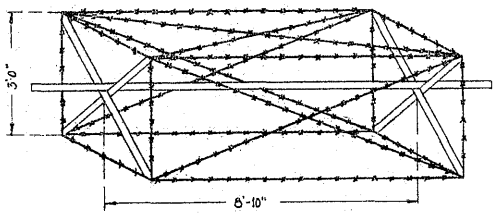


FIG 52 LARGE KNIFE REST (WOOD)

(*d*) To make emergency repairs to entanglements partially destroyed by the enemy's fire.

745. The principal form of portable obstacle for use by infantry is the knife rest. This obstacle consists of a framework

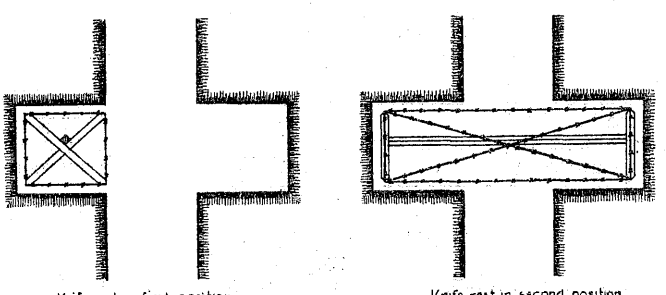


FIG 53 METHOD OF BLOCKING TRENCH WITH KNIFE REST

of wood or iron, upon which barbed wire is strung. The iron framework is collapsible and hence easier to transport than the wooden type; it has the further advantage of greater invisibility and strength. In shape, the framework of the knife rest resembles a common saw-buck. It is the most used of the portable obstacles. (See Figures 52 and 53).

Wire Drills

General Rules

746. The following general rules apply to all drills (See Figures 54 and 55).

A. Order of work :

In the following drills, all men have been given a number and the several groups a letter; the tasks should be initiated in the order in which the men are numbered, and the groups should work in echelon in the same direction, so that the men doing different tasks will not be in each other's way and groups never cross paths.

B. Pickets :

(*a*) Spacing. — The N. C. O. determines the location of the

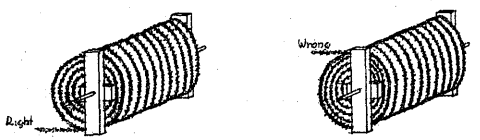


FIG 48

RIGHT AND WRONG WAY OF RUNNING OUT A COIL OF BARBED WIRE

pickets in one row by means of pacing ; in the other rows, the pickets are located by eye opposite the center of the intervals in the preceding row.

(*b*) Laying out. — Pickets should always be carried under the left arm and placed on the ground with the right hand, and in such a way that the end of the screw or the point of the picket faces the enemy, indicating the spot at which the picket is to be erected.

(*c*) Erection. — Screw pickets must be screwed in so that the loops are parallel to the length of the entanglement, and the top loop points in the direction from which the men are working, *i. e.*, toward the starting point. This rule is essential in order to facilitate placing wires.

(*d*) Anchor pickets. — Wooden pickets used as holdfasts should be driven in roughly at right angles to the stay wire attached to them, but screw anchorage pickets must be directed in prolongation of the stay wire to avoid being drawn in the direction of the strain.

C. Running out wires :

In running out barbed wire, two men work together ; one man

holds the reel, and the other stretches the wire and fastens it to the pickets. The stake on which the reel is carried must be small enough to permit the coil to revolve easily, and it must be so held that the wire runs from underneath the reel, as otherwise the wire tends to rise into the holder's face (Figure 48).

D. Fixing wires :

(*a*) Men fixing the wires must always work facing the enemy.

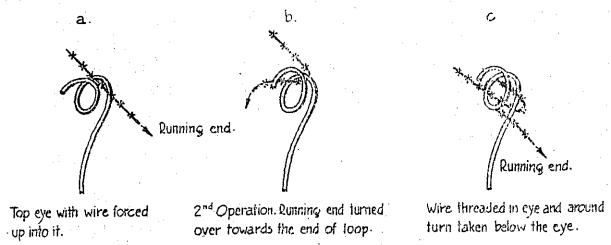


FIG 49 a,b,c.–METHOD OF FASTENING BARBED WIRE ON PICKET

(*b*) To fix wire in top eye of screw picket : Pull the standing end taut and slip the wire up into the eye, turn the running end up over the eye, thus threading the wire in the eye ; then take

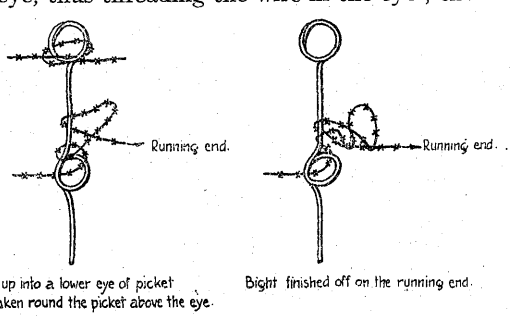


FIG 50 METHOD OF FASTENING BARBED WIRE ON PICKET

a turn with the running end around the picket below the eye (see Fig. 49).

(*c*) To fix the wire in lower eye of screw pickets when there is already a wire in the top eye :

(1) Pull the standing end taut and slip the wire up into the eye. Then take the bight on the running end, pass it around the

picket above the eye, then finish off by taking a turn with the bight on the running end (see Fig. 50).

(2) If one eye is on the opposite side of the pickets from the others, the wire must be forced down into the eye, and the bight on the running end passed around the picket under the eye.

The above rules, (*b*) and (*c*), apply in whichever way the wire men are working, from right to left or left to right ; if they are carried out, the wire is firmly fixed in the eye and cannot slip up or down the picket ; also, if one bay is cut, the wire in the bays on either side remains taut and does not slip through the eyes.

(*d*) To fix the wire to wooden pickets, take two turns around the picket, the second turn binding the first.

(*e*) To fix one wire to another adjacent to it, a short length of

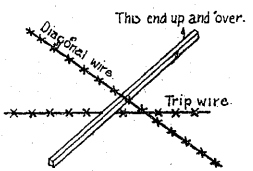


FIG 51 WINDLASSING WIRE

smooth wire may be used, or the two wires may be twisted together by means of a rack stick as shown in Figure 51. This method is known as " windlassing. "

E. Loose wire and trip wire :

The addition of loose wire and a trip wire makes the entanglement more efficient. The organization of the wiring party is so arranged as to allow two spare men for this task. If circumstances require the omission of the trip wire and the loose wire, the organization of the rest of the party is not affected.

Drill I

747. *Drill for 50-yards length standard low (or knee-high) wire entanglement.*

Materials :

(1) Nine bundles containing six medium pickets each.

(2) Two 100-yard coils and three 50-yard coils of barbed wire.

Tasks of Wiring Party :

Group	Nos	1st Task.	2d Task.	3d Task.	4th Task.	5th Task.
N. C. O.		Direction and supervision.				
A	1 2 3	Carry out 3 bundles pickets and 2 coils (100 yards) barbed wire.	Lay out and screw in center line of pickets.	Diagonal wire in enemy bay.	Diagonal wire in home bay.	
B	4 5	Carry out 3 bundles pickets and three coils (50 yards) barbed wire.	Lay out and screw in outer line of pickets.	Horizontal wire on outer line of pickets.	Horizontal wire on center line of pickets.	Horizontal wire on inner line of pickets.
C	6 7	Carry out 3 bundles pickets and 4 spirals.	Lay out and screw in inner line of pickets.	Loose wire in enemy bay.	Loose wire in home bay.	

(3) Four spirals.

Wiring party :

One N. C. O. and seven men. The N. C. O. carries cutting pliers, and each of the party a windlassing stick ; gloves as required.

Carrying party :

One N. C. O. and 17 men.

Details :

(1) The N. C. O. leads out the whole party and has all his stores dumped in some convenient place behind or near the head of the task. Each group is responsible for its own stores as detailed above ; *A* being the larger group will be ready first.

(2) When ready, the N. C. O. followed by Nos. 1, 2 and 3, paces out the center line and indicates to No. 1 where to lay pickets. As soon as No. 1 has finished his bundle, he screws in 6 pickets. The N. C. O. follows the same procedure with Nos. 2 and 3, who complete the laying out of the center line.

(3) As soon as the N. C. O. has thus laid out his center line of pickets, he returns to the head of the task and supervises the laying of the outer and inner line of pickets by *B* and *C* groups.

(4) As soon as *A* group has finished its pickets, it returns to the head of the work and puts on the diagonal in the outer bay. No. 1 runs out the coil, No. 2 fixes wire on the outer line of pickets, and No. 3 fixes the wire on the center line of pickets.

(5) As soon as *B* group has finished its pickets, it returns to the head of the work and puts the horizontal wire on the outer line of pickets ; No. 4 runs out the coil and No. 5 fixes the wire on the pickets.

(6) As soon as *C* group has finished its pickets, it throws the spiral wire into the outer bay, two spirals in each 50-yard bay.

(7) When *B* group has finished the horizontal wire on the outer line of pickets, it comes back to the head of the work and puts the horizontal wire on the center line of pickets. Similarly, *A* group and *C* group return to the head of the work and repeat in the home bay the operations described in (4) and (6).

(8) Finally *B* group puts the horizontal wire on the inner line of pickets.

Drill 2

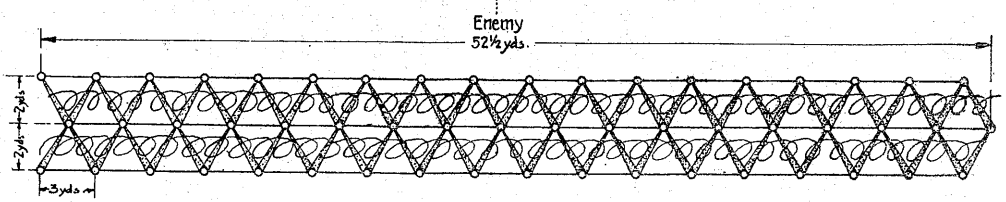
748. *Drill for 50 yards standard double-apron fence.*

Materials :

(1) Four bundles containing 4 (long) pickets each.

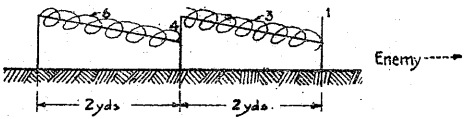
(2) Four bundles containing 8 anchorage pickets each.

50YD STANDARD LOW WIRE ENTANGLEMENT



Plan.

Inclined wire in plan.
Top end
Low end



Section (Enlarged)

Order of putting on the wire

FIG 54

(3) Fourteen 50-yard coils barbed wire (or two 100-yard coils) and ten 50-yard coils.

Wiring party :

One N. C. O. and 9 men. The N. C. O. carries cutting pliers, and each of the party a windlassing stick. Gloves as required.

Carrying party :

One N. C. O. and 15 men.

Tasks :

Group.	Nos.	1st Task.	2d Task.	3d Task.	4th Task.	5th Task.
N. C. O.		Direction and supervision.				
A	1 2 3	Carry out 3 bundles pickets.	Screw in long pickets.	Front diagonal wire.	Bottom wire on fence.	Rear diagonal wire.
B	4 5	Carry out 2 bundles anchorage pickets.	Screw in front anchorage pickets.	Front trip wire.	2d wire on fence.	Top horizontal wire on rear apron.
C	6 7	Carry out 2 bundles anchorage pickets.	Screw in rear anchorage pickets.	2d horizontal wire on front apron.	3d wire on fence.	2d horizontal wire on rear apron.
D	8 9	Carry out 1 bundle of pickets and 14 coils barbed wire.		Top horizontal wire on front apron.	Top wire on fence.	Trip wire on rear apron.

Details :

(1) The N. C. O. leads out the whole party to the head of the work, and *A*, *B*, and *C* groups undo their bundles, when ready. The N. C. O. paces out and indicates to *A* group where to lay its pickets, commencing with No. 1 and finishing with No. 3. Having done this, the N. C. O. returns to the head of the work, picks up the fourth bundle which *D* group has brought out, walks back again, and lays out this bundle ; all

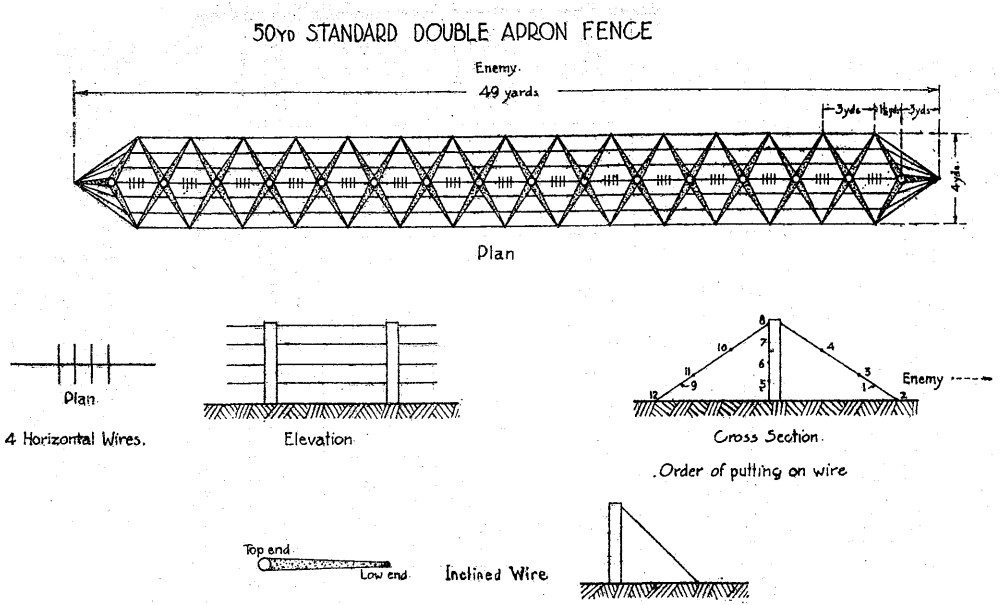

50YD STANDARD DOUBLE APRON FENCE
Enemy.
49 yards
3yds
1½yds
3yds
4yds.
Plan
Plan
4 Horizontal Wires.
Elevation
Cross Section.
Order of putting on wire
Enemy
Top end
Low end
Inclined Wire

FIG 55

numbers of *A* group, as they finish four pickets, join the N. C. O. and screw in the last four pickets.

(2) Meanwhile *B* and *C* groups, getting the direction from the center line of the long pickets, lay out and screw in the whole of the anchorage pickets, No. 4 being responsible for the anchorage picket at the head of the work, and No. 7 for the anchorage picket at the end of the work. Each number of both groups lays out and screws in his own bundle of pickets.

(3) Meanwhile, *D* group brings out the remainder of the stores and dumps them at any convenient spot indicated by the N. C. O. This requires each man to make four journeys.

(4) As soon as *A* group has finished its pickets, it returns to the head of the work and puts on the front diagonal wire. No. 1 runs out the coil, No. 2 fixes the wire on the pickets, and No. 3 fixes the wire on the anchorage pickets.

(5) As *B*, *C*, and *D* groups finish their second task (see tasks), they return to the head of the work and put the horizontal wire on the aprons. Nos. 4, 6, and 8 respectively run out the coils, while Nos. 5, 7, and 9 windlass the wires on the diagonal wire. In doing this, Nos. 5, 7, and 9 should not step over the diagonal wire but walk around the posts, lifting their wire over the posts, and then down into position on the diagonal wire.

(6) As they finish each task, the various groups return to the head of the work and take up the next task in the order given.

All men work behind the wire at all times.

Nos. 1 and 2 must be careful to put the diagonal wire on rather slack; it automatically tightens when the horizontal wires are windlassed on.

All diagonal wires and apron wires are begun and finished on the end anchorage pickets. The horizontal strands on the fence are not carried down to the end anchorage pickets.

If wooden or angle-iron pickets are used, Nos. 1 and 2, and No. 3 and the N. C. O. work together, No. 2 and the N. C. O. holding up the pickets while Nos. 1 and 3 drive them in with the maul.

6. CAMOUFLAGE

General

749. Military camouflage is work done for the purpose of deceiving the enemy as to the existence, nature, or location of our troops, matériel, or military works.

The enemy may be deceived by:

(*a*) Making an object look like something else.

(*b*) Making an object indistinguishable from its surroundings.

(*c*) Suppressing all signs of human activity near the object, or deceiving the enemy as to the purpose of this activity.

(*d*) Erecting dummies.

750. The necessity for camouflage and the methods employed will vary widely with the situation. In stabilized warfare, the most minute precautions are necessary, while in open operations, time will not be available either to the defense for taking such precautions nor to the offense for making the minute studies required, and the constantly shifting character of operations will greatly decrease the value of many of the precautions indispensable in position warfare. In open operations, camouflage against aerial photography falls off greatly in importance ; the main effort should be directed to concealment from ground observation. The employment of dummy works designed to deceive the enemy as to the location of the more important works and centers of resistance is an especially effective form of camouflage in open warfare.

751. When taking up positions in open warfare, natural and artificial cover (embankments, ditches, road cuts and fills, villages, woods, hedges, vegetation, etc.) are utilized to the fullest extent as means of concealment from observation.

752. In stabilized warfare, the camouflage erected must be proof against the following means of observation :

(*a*) Air photographs taken either from directly overhead or obliquely. These are minutely studied by specialists trained to detect and interpret the faintest marks on the photographs.

(*b*) Direct observation from the ground, from captive balloons, or from low flying airplanes. This is most important in order to prevent spotting of shots by enemy artillery observers.

The camouflage of an entire trench system or even of considerable lengths of trench is impracticable and should not be attempted. Effort should be directed toward camouflaging the more important works (*e. g.*, machine-gun emplacements, dugouts, combat emplacements, etc.) with a view to concealing from the enemy the method by which the position is held.

753. While there is some difference in the way in which a camera records a picture and the way in which the eye records it, it is usually safe to assume that perfect camouflage against air photographs will also be perfect camouflage against direct observation, excepting the close observation which is possible on works in or near the front line. In the latter case, greater attention must be paid to the choice of color so that the eye will be deceived, and to the placing of the camouflage so that observers on the ground cannot see underneath.

754. Before locating any military work which is to be camouflaged, a careful study of the air photographs of the locality should be made. When practicable, the location of the work should be such as to make the camouflage as simple as possible. Subsequent photographs should be studied so as to correct the camouflage.

755. Camouflage must be done well, as poor camouflage is usually worse than none at all.

Camouflage is a continuous process and must be constantly maintained. Frequent inspections must be made and injuries repaired. On account of the inflammable nature of much of the material used in camouflage work, it must be carefully protected against fire.

756. Dummy works include dummy trenches, false entrances to shelters, trails, piles of excavated material, etc.

Principles of Camouflage

757. The form of an object is its most dangerous element. Anything rectangular or regular in shape arrests attention. Nothing in nature appears regular, consequently anything that is regular must be the work of human hands. Regularity is manifested in two forms :

(*a*) In the shape of the camouflage and the shadow.

(*b*) In the regular spacing or alignment of similar works.

758. The shape of the camouflage must not be such as to form a geometrical figure when viewed from a considerable distance. A line such as the edge of a saw may appear broken to close view, but perfectly straight from a short distance. In broken country, camouflage of fantastic shape readily escapes detection, and even in the open, fantastic shapes given to the solid parts of camouflage screens may stave off suspicion.

759. A peculiar shape, which might escape notice if it occurs only once, will undoubtedly receive attention if repeated a few times at regular intervals. Regular spacing should, therefore, be carefully avoided.

760. Shadows may reveal the existence and form of an object, and the problem of camouflage is to avoid such shadows. If the object cannot be screened so as to eliminate the shadow, the latter should be made vague and indefinite. For this reason, camouflage screens are of irregular density, being thinned out near the edges.

761. Texture is a quality which can be compared to the lay of the nap of cloth. It is determined by the amount of shadow of each separate element which makes up the surface. Texture

causes tall grass to photograph dark, short grass lighter, and flattened grass very light. This quality is difficult to estimate, but if incorrectly estimated, it will cause artificial material to contrast with its surroundings.

762. **Footprints** made by men walking about in the vicinity of camouflaged works are the principal signs by means of which the enemy discovers the presence of the work. The reason for this is that the footprints photograph very light because of the fact that they have changed the natural texture of the surface. Every officer and soldier should be impressed with the fact that footprints about any piece of camouflage will certainly lead to its discovery. Carelessness in this respect is a serious breach of discipline and materially interferes with the success of military operations.

763. Colors should be matched as closely as possible, but a slight difference in color between the camouflage material and its natural surroundings is not very noticeable. Objects viewed from directly or obliquely overhead may show a different color than when viewed from the ground. For example, a field of young corn will appear green when viewed from the ground, because only the corn is seen, while from above, it will appear brown, because the earth between the cornstalks shows up prominently.

764. Camouflage must be made to conform to changing seasons, principally by changing its color. Complete conformity cannot always be attained, but by some repainting, by introducing new patches of color, and by the use of local materials, old camouflage can be kept up well enough to escape detection. When snow falls, camouflage which shows up must be covered with snow or with pieces of white cloth, painted with pale blue patches. Usually, only small sections need to be thus treated. Blast marks, trails, and roofs of dugouts must be especially watched.

765. To avoid tracks :

(*a*) Use existing roads and paths wherever possible.

(*b*) Build new roads and paths under cover, using natural cover as much as possible.

(*c*) Carry new roads and paths past the position to another road, a house, or a dummy position. Make sure that the road is used past the true position.

(*d*) Make the roads and paths follow existing lines, such as fences, hedges, ditches, edges of plowed fields, etc. Keep the roads narrow and avoid cutting corners.

(*e*) Hide the trail under a horizontal screen, 9 to 12 feet wide, with thinned edges, making use of hedges or similar lines.

(*f*) Confine traffic to one route. Keep this route narrow, and keep traffic on the route by the free use of trip wires.

766. The principal camouflage materials are sod, shrubbery, branches, raffia on wire netting, painted canvas screens.

767. Camouflage of machine guns must be kept as small as possible, and the spoil from the excavation must be disposed of so that it need not be camouflaged.

Forward machine guns are usually hidden behind plaster and burlap fronts, imitating earth or sandbag parapets, piles of stone, the face of a stone wall, etc, with a view to concealment from direct ground observation. The loophole should be covered by a hinged flap, which is opened only during firing.

Positions farther in rear are hidden by a light rectangular frame, covered with wire netting camouflage (grass or raffia), and capable either of moving up and down vertically, or hinged at the rear so that it will open like a trap door when the gun is to be fired. Small fish nets (10 ft. by 10 ft.) form a convenient and portable camouflage for machine guns. In favorable terrain, machine-gun positions may be disguised as piles of debris, road metal, broken timbers, etc.

768. *Short lengths of trench* may be hidden by using painted scrim or cocoanut matting. The edges of the camouflage must be broken, and the camouflage covers must not be allowed to sag.

Wire entanglements, otherwise well concealed, are sometimes recognized by paths following the wire to a gap. The formation of such paths should be prevented by trip wires.

Permanent snipers' posts require a hole for observation, which is usually covered by gauze, and a hole for firing, which should be of an irregular shape and located in a natural shadow.

Snipers' heads are used in order to spot the location of enemy snipers. They should be fastened so that they can slide up and down in a fixed frame. When an enemy sniper shoots into one of these heads, the head is lowered, and the direction from which the shot came determined.

769. Care should be taken to avoid betraying the location of the work by committing the following errors :

(*a*) A large amount of camouflage material has been prepared, but the work is begun before the camouflage is put in place.

(*b*) A work is well camouflaged; but depots of material are left unconcealed nearby.

(*c*) A shelter is very carefully concealed, the excavated material is carried away at great pains, but a periscope is left unconcealed, or smoke issues from the interior, etc.

(*d*) A trail terminating at a command observation post is used for approaching the post.

(*e*) Men observe from the open near a post.

(*f*) Men do not keep concealed but move about when a hostile airplane is overhead.

7. PIONEER PLATOON

770. The pioneer platoon will be instructed in all the duties that may be required of other pioneer troops. Especial attention will be devoted to the construction of shelters, observation posts, command posts, concrete emplacements, demolitions, and minor stream crossings.

In addition to the instruction necessary in preparation for the execution of its own peculiar duties, the pioneer platoon should serve as a regimental center of instruction in infantry pioneer service.

CHAPTER VII. — MARCHES

1. GENERAL PRINCIPLES

771. A successful march, whether in peace or war, is one that places the troops at their destination at the proper moment and in the best possible condition.

The success of operations depends in a great measure upon the skill with which marches are conducted.

The marching efficiency of a unit is judged by the amount of straggling and elongation, and the condition of men and animals at the end of the march.

Good marching is secured by careful preparation, strict discipline, and the due observance of march sanitation.

As far as compatible with other requirements, marches are conducted so as to reduce to a minimum the hardships of the troops. The men are not kept under arms longer than necessary, nor required to carry heavy burdens when transportation is available.

Special attention is paid to the feet of the men and to the hoofs and backs of animals.

The conduct of a march (forming the column or columns, distribution of troops, the start, rate, length of march, etc.) is controlled by the situation and object to be accomplished.

2. PREPARATION

772. Warning orders are issued at the earliest practicable moment in order that preparations may be made thoroughly and without haste.

773. It is the duty of the commander to see that the necessary preparations are made ; that the men and animals are in fit condition and that they are properly equipped ; that all trains accompanying the command are loaded as prescribed ; that proper measures have been inaugurated for the replenishment of supplies ; and that the necessary arrangements have been made for the care and evacuation of the sick and wounded.

774. The training of infantry should consist of systematic exercises to develop general physique and of actual marching to accustom men to the fatigue of bearing arms and equipment and to train them in observance of the rules of march discipline.

775. With new or untrained troops, the process of hardening

the men must be gradual. Immediately after muster into the service, the physical exercises and marching are begun. Ten-minute periods of vigorous setting-up exercises are given three times a day to loosen and develop the muscles. A progressive schedule of marches with full equipment is established, beginning with a distance of 4 or 5 miles and increasing the distance daily as the troops become hardened, until a full day's march under full equipment may be made without exhaustion.

776. A long march should not be made with untrained troops. If a long distance must be covered in a few days, the first march should be short, and the length progressively increased.

777. Special attention will be paid to the care of feet and the fitting of socks and shoes in compliance with existing regulations.

778. Each company and platoon commander inspects his unit before the commencement of the march and assures himself that arms and equipment are as prescribed, canteens filled, packs properly made up, supplies to be transported on wagons complete, properly marked, and prepared for transportation, etc. Commanders of units with transportation inspect the loading of wagons, adjustment of harness, etc. As far as practicable, fatigue and other details that will be required at the end of the march (digging latrines and refuse pits, pitching officers' tents, kitchen details, etc.) are made before the commencement of the march.

3. FORMATION OF THE COLUMN

779. To form the column for a march, the commander issues the necessary orders (march order).

The march order states the object of the march, gives the distribution of the troops, order of march of the main body, manner of forming the column, etc.

The method of forming the march column depends upon the size of the units, the location of their camps or quarters, and the tactical situation.

When troops are encamped or bivouacked at some distance from the road, columns of the size of a regiment and larger columns are formed by the successive arrival at, or clearing of, an initial or starting point by the subordinate units. The initial point, as a rule, is located in the direction of the proposed march. The commander fixes the initial point after considering

the position of the troops and the roads by which they can join the column. He also prescribes the hour at which the leading fraction or fractions clear the initial point, and if necessary, the routes to be followed in reaching it. To prevent needless marching, he may designate special initial points for parts of the command.

As a general rule, the larger units of a command should be camped in the order in which they will march on the following day.

In drafting march orders, the road space and rate of march of the different fractions of the command and their distances from the initial point or points must be considered. With troops in column of squads and trains in single column of carriages, the following may be assumed for approximate calculations : two men per yard for troops ; 20 yards for each wagon; 8 yards for each cart.

Commanders of subordinate units examine the route to be followed, calculate the time required, and start their commands in such manner that there will be neither delay or unnecessary waiting under arms either at the initial point or elsewhere.

When commands camp in column along the route of march, they may be assembled in march column prior to the commencement of the march. Assembly or massing of the command prior to commencement of the march may also be made necessary by uncertainty in the tactical situation when marches are conducted in proximity to the enemy.

Where several elements of a command, marching by different routes, are to unite on a single route or when their march routes cross each other, arrival at or clearing of road junction should be so timed as to prevent collision between columns.

The order of march of a column is controlled mainly : (1) by tactical considerations, which are paramount in the presence of the enemy (composition of columns in accordance with the tactical situation) ; and (2) by the rule requiring the hardships of troops to be reduced to a minimum, which controls the order of march when tactical considerations do not enter into the situation (distribution in small columns, formation of columns with reference to march rate and capacity of the several elements).

The order of regiments in brigades, battalions in regiments, and companies in battalions is generally changed from day to day ; the leading unit on any day forms at the tail on the following day.

When troops are to march to an assigned camping or billeting area, the location of the several elements of the command in the area should be considered in forming the columns.

4. THE START

780. When practicable, marches begin in the morning, ample time being allowed for the men to breakfast, animals to feed, and the wagons or animals to be packed. The time for reveille and stables should be designated the evening before. Canteens are filled, fires put out, latrines covered, and the camp policed before departure.

781. Except for urgent reasons, marches should not begin before one hour after daylight ; an earlier hour should generally be ordered when the distance to be covered would otherwise necessitate making camp at the end of the march after dark.

Night marches are difficult, slow, and exhausting. Concealment of movement and other tactical considerations will, however, frequently require such marches (see Night Operations).

The signals for striking camp and putting the command in march (the *general,* etc.) are ordered by the commanders of the larger units at the proper time. After the *general,* one or more officers of each organization superintend the preparations for the march.

The different units of the column, including those of the train, are separated at the start by distances prescribed in these regulations (Plates III, IV, V) or by the commander. These distances are temporarily increased or diminished, according to circumstances, thus facilitating uniform progress without checks and with a continual tendency to the gradual resumption of normal distances.

5. CONDUCT OF THE MARCH

782. On the march, troops keep to the right of the road, as far as practicable leaving the left free. Even when the roads are narrow, space should be left for messengers to pass freely along the column. When roads are soft with mud or heavy with sand or very dusty, it may be advisable to divide the column longitudinally so as to permit men and animals to pick their way ; the middle of the road is kept clear. Care should be taken to prevent straggling or undue lengthening of the column.

783. The habitual march formation is column of squads.

On wide roads, the march may be conducted in double column of squads when necessary ; on narrow roads or trails, in column of twos or files. In marching across country, the commander adopts the most advantageous formation.

The elements of the column cover accurately in file and keep accurately dressed toward the side of the guide. Rifles are carried either slung vertically or in such a manner on the shoulder, muzzle up and elevated, as not to interfere with the soldier next in rear.

As a rule, troops on the march pay no compliments; individuals out of ranks salute when they address, or are addressed by, a superior officer. The march is habitually at route step.

784. File closers, including officers, form additional ranks at the head and rear of the units. No one is permitted to march habitually outside of the column, which must at all times be orderly and compact.

785. An officer of each company marches at its rear in order to keep it closed up and prevent straggling.

No person is permitted to fall out without specific authority of an officer of his company. Authority is given only for the most urgent reasons. Men who fall out on account of sickness are given a written permit to be presented to the surgeon, who disposes of the case according to the necessity and notifies the company commander of the action taken.

786. Sanitary troops with combat equipment from the regimental sanitary detachment are attached to each battalion and march at the tail of the battalion. Disabled men falling out are examined, tagged and treated, and sent back to the proper transportation or otherwise disposed of as their condition requires.

The camp infirmary attached to the regiment from the divisional sanitary train marches at the tail of the regiment. On arrival in camp, the infirmary serves as a camp dispensary and as a collecting point for the evacuation of casualties.

787. In addition to the driver, only one other person is permitted to ride on a field wagon. All other personnel with the regimental trains are formed and marched in one group, under the senior present, at the tail of each battalion transportation group. All men who accompany the field trains wear their full equipment, less the pack. The latter may be carried on the train.

6. RATE AND LENGTH OF MARCHES

788. The rate of march varies with the length of the march, size of the command, condition and training of the troops, and other circumstances ; sandy, rough, muddy, or slippery roads, great heat and dust, strong headwinds, storms, and broken

country reduce the rate. If hills are to be climbed or swampy country is to be crossed or defiles passed, liberal allowances are made in time calculations.

The rate prescribed for drill is 100 yards a minute or 3.4 miles an hour; on the road, the maximum to be counted on is 88 yards a minute or 3 miles an hour; including halts this rate is equivalent to 2 1/2 to 2 3/4 miles per hour. The rate of infantry columns, under average conditions, may be assumed at 2 1/4 to 2 1/2 miles an hour.

The average march of infantry is 15 miles a day; but in extensive operations, involving large bodies of troops, the average is about 12 miles a day. Small commands of seasoned troops, marching on good roads in cool weather, can average 20 miles a day.

The rate of a wagon train varies with the class and condition of the draft animals, the load, the length of the column, and the condition of the roads. While large mules drawing light loads on good roads can cover nearly 4 miles an hour, a rate of 2 miles, including halts, is all that can be expected in long columns even under favorable conditions; small trains may make 2 1/2 miles an hour. The daily march of a wagon train is about the same as that of infantry.

The rate of march is regulated by the commander of the leading company of each regiment, or if the organizations are separated by greater than normal distances, by the commander of the leading unit of the organization. A uniform rate should be maintained. The officer setting the pace constantly checks the cadence of his stride (which has been previously measured by marching over a measured course) against the watch, in order to regulate the march rate.

A forced march is never undertaken unless the situation requires it. As a rule, forced marches are made by increasing the number of marching hours rather than by accelerating the rate.

7. HALTS

789. The halts and the starts of the units of a column are regulated by the watch and are simultaneous.

Closing up during a halt or changing gait to gain or lose distance is prohibited.

A halt of 15 minutes is made after the first half or three-quarters of an hour of marching in order to permit the men to relieve themselves or re-adjust equipment; thereafter, a halt of ten minutes in each hour. The number and length of halts may be

varied according to the weather and exertion required. The men are allowed to fall out, but remain in the immediate vicinity of their places in the column.

Halts are not made in or near towns or villages except for the purpose of obtaining supplies or water. When halts are so made, the men remain in column, and details are sent for whatever is necessary.

Halts may be made pursuant to signal or at hours specified by the commanding officer of the troops (*e. g.*, hourly halts, to be made uniformly at 10 minutes before the hour). In the latter case, all units halt and resume the march at the time specified.

When the day's march is long, a halt of an hour should made at noon, and the men allowed to eat. Places for long halts should be selected with care ; wood, water, grass, dry ground, and shade are desirable features. Arms are stacked and equipment removed.

In prolonged marches, at least one day in seven should be a day of rest.

8. STREAM CROSSINGS, DEFILES, AND OBSTACLES

790. When a cause of delay — for example, a damaged bridge — is encountered, the troops in rear are notified of the minimum length of the delay ; they then conduct themselves as at regular halts.

In ascending or descending slopes, crossing streams or other obstacles, or passing through defiles requiring a reduction of front, every precaution is taken to prevent interruption of the march of the troops in rear. If the distances are not sufficient to prevent check, units are allowed to overlap ; if necessary, streams are crossed at two or more places at the same time ; in passing through short defiles, the pace is accelerated and the exit cleared at once. If a company is delayed while crossing an obstacle, the head of the company slackens the pace or halts a short distance beyond the crossing until all of the company has passed and has closed up ; it then regains its distance, increasing the pace if necessary.

Careful examination is made of fords, boggy places, bridges of doubtful character, ice, etc., before attempting a crossing.

When necessary, an officer is designated to superintend the crossing ; his instructions must be strictly observed, the troops crossing in the formation prescribed by him. Troops crossing bridges march without cadence.

Whenever a military bridge is constructed with the bridge equipage, or if deemed necessary, in cases where improvised material is employed, a bridge-guard officer will be detailed for its care and maintenance during the period of its use. All orders, regulations, and instructions issued by this officer will be considered as emanating from the commander of the force crossing the bridge.

When roads lead through swamps or quicksand or across streams with treacherous bottoms, their limits are marked with stakes or bushes, or warnings are placed at dangerous points. At night, lanterns are hung from the stakes, and a fire is built or a lantern hung to mark the landing.

When the current is strong and the water deep, foot troops cross on as broad a front as possible, the men marching abreast and holding hands. They should not look at the water but at the opposite shore.

Fords that are at all difficult delay long columns, unless the troops cross at several places at once. The crossing of many animals or wagons may deepen a ford and render it impassable; new places may thus become necessary.

The men enter pontons or barges singly at the bow or stern, and gradually move toward the stern or bow; larger vessels may be entered in column of twos; the men retain the places assigned them so as not to interfere with the handling of the boat; in small boats when the water is rough, they sit down; when there is danger of capsizing, they are directed to remove equipments.

Horses are loaded one at a time. When there is room for a single row only, they alternate heads and tails; if in two rows, they face inward. If a horse falls into the water, it is turned loose.

Wagons are generally loaded by hand; if practicable, the teams are sent on the same vessel.

Unloading is also from the bow, in good order, without crowding; men sitting down do not rise before their turn.

When rafts are used, special precautions are necessary. The center of the raft is first occupied and then the load uniformly distributed. Unloading is carried out in inverse order, the center of the load being last to leave.

9. CARE OF TROOPS

791. On the march, commanders of the larger units keep themselves informed of the condition of their commands and of the progress of subordinate units in rear.

Sources of water supply are examined by experts and marked good or bad. In countries infected with cholera or other harmful bacteria, this examination is imperative.

The drinking of any other beverage than potable water on the march is prohibited. Thirst should be quenched before starting by frequent small sips of water. On a march of ordinary length, the use of water should be limited to rinsing the mouth or the consumption of small amounts if the exertion is considerable or weather conditions require it. The drinking of water is often a matter of habit ; under ordinary conditions, a canteen of water should last a day's march. Soldiers should be trained to be economical in the use of water and to keep a small supply until their canteens can be replenished.

Commanders afford the men ample opportunity for replenishing their canteens, but this is done by order, not by straggling from the command. In certain cases, the inhabitants may be required to place water in vessels along the line of march for the convenient use of troops. A reserve supply of water for use in emergencies is carried on water-carts or wagons. On long marches through country deficient in water or where the water is bad, special measures for the organization of the water supply will be necessary.

Rations or lunches are not consumed until permission is given by the company commander.

Animals of wagon trains are watered while in camp — before departure and after arrival — or during a long halt. If time permits, they may be watered on the march from buckets or by unhitching and riding or leading to water.

One of the greatest sources of hardship on a march, especially for infantry, is hot weather. Every precaution is taken to prevent suffering from this cause. Halting places are selected when practicable where there is shade and free circulation of air, and the men are cautioned against drinking too much water. Green leaves or moist handkerchief in the hat afford relief from the hot rays of the sun. If the men are overheated, care is taken to prevent them being chilled by exposure to cold winds or drafts.

Abraded and blistered feet should be promptly dressed. At the end of each march, company commanders will when practicable require that feet be bathed and dressed, and footgear changed.

CHAPTER VIII. — SHELTER

1. PREPARATION

792. Arrangements for sheltering troops should as far as practicable be made before their arrival. The preparations for quartering a command are made by means of quartering parties. Quartering parties are sent out not only by troops changing station but also when practicable by troops on the march, whether they are to be sheltered in billets or in camp.

793. The duties of quartering parties are :

To select the camp site or billeting area when this has not been already definitely determined, and make arrangements its occupancy with the proper authorities ;

To apportion the camping or billeting area among the subordinate units of the command, and allot to each the available facilities for its administration and supply ;

To reserve facilities for the general service of administration, supply, and command (interior guards, headquarters, infirmaries, etc.) ;

In special cases to secure supplies ;

In general to take the necessary measures to insure that all agencies of command, administration, and supply continue functioning with the least possible interruption after the arrival of the command.

794. The basis of the apportionment is the quartering capacity of the town or area obtained from the town major, the local authorities, or by other means, and the strength of each unit in officers, men, animals, and vehicles furnished by the command.

Billets are allotted by the assignment of sections of the town to units. Subordinate units re-allot subsections, streets, or houses to their component units. Companies allotted to a street should occupy both sides of the street.

Each section should have easily recognizable boundaries.

When tactical considerations are controlling, the distribution of the troops must be made with regard to combat. Machine-gun companies and one-pounder and light-mortar units should be near their carts on the side of the town opposite to the enemy.

Units with animals and transportation are billeted or camped near watering places and places suitable for the parking of wagons.

In arranging camps, bivouacs, or billets, battalions, companies, platoons and squads will be kept together in order to facilitate control.

The minimum floor space required for each man in billets is 6 ¾ feet by 2 ½ feet. Wherever space permits, each man should have 40 square feet of floor space. When space in buildings is insufficient for billeting the entire command, a portion of the command may be camped or bivouacked in gardens, public squares, etc., or outside of the town (close billets).

795. The composition of a quartering party will vary depending on the time and transportation available, and whether the command is on the march in campaign or changing station or billeting area.

796. A quartering party of a regiment on the march will comprise :

A line or tactical staff officer (quartering officer) ;

A supply officer ;

A medical officer ;

Battalion sergeant-major or other representative from each battalion ;

Mess sergeant and supply sergeant of each company.

When practicable, the quartering party will include the officer of the day, a detail of the guard, and two men of each company for fatigue.

Motorcycles, bicycles, or mounts should, when necessary, be supplied to members of the quartering party.

A quartering party of a battalion acting alone or in a detached area is similarly constituted.

The quartering officer commands the quartering party. When several units are to occupy the same area, the senior quartering officer is in command of all parties.

The quartering officer places the quartering party in charge of the senior soldier present and directs it to proceed to a designated point in or near the quartering area. Accompanied by the supply officer, medical officer, and several soldiers, he then proceeds to the quartering area. On arriving in the quartering area he arranges, in accordance with army regulations, orders or the local law, with the Town Major, the local officials, or private parties for the necessary areas, shelters, or supplies. He allots areas, sections, or districts to the battalions, the machine-gun company, headquarters company, and supply company and reserves suitable accomodations or locations for regimental headquarters, the guard, and the infirmary. He locates an assembly place for the regiment (usually outside of the town or on the side of the camp toward the enemy) and

designates water sources for men, animals and bathing. He requires the medical officer to determine and report upon the sanitary conditions of the area and its water supply. He placards contaminated water sources and forbidden areas, arranges for traffic control, police regulation, and prevention of fires. On arrival of the guard detail, he posts a guard for the proper security and control of the area (sentries over water sources, at village exits, etc.).

Battalion sergeants-major select from the area or district allotted to them suitable accommodations for battalion headquarters and staff, locate if necessary a battalion assembly place, and distribute the battalion area to the companies. Supply sergeants representing companies determine the capacity of shelters and subdivide the area among the platoons, reserving a proper place for company headquarters, officers' quarters, kitchens, stables and latrines, select a company assembly place and placard the company area so as to show all assignments. The mess sergeant secures the necessary supplies.

In the case where camps are to be established, the location of the different units and their officers' quarters, kitchens, picket lines, and latrines is established in accordance with the plan fixed by the quartering officer (Plate VIII).

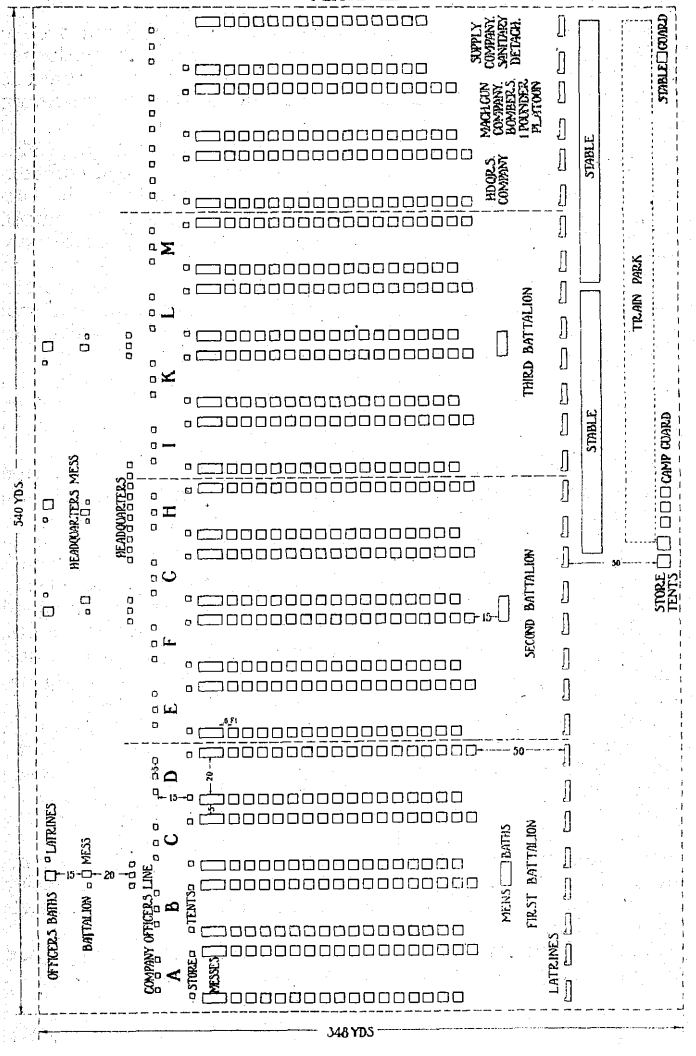
After the quartering officer has completed his dispositions, he rejoins the command, accompanied by the medical officer, and reports to the commanding officer of the troops. Battalion and company quartering parties remain in the quartering area, and when necessary and practicable, send a soldier to their organization commanders to serve as a guide.

On arriving in the quartering area, companies are marched to their assembly places, and before being marched to their quarters, the men are instructed as to the location of the company assembly place, company headquarters, and the regimental or battalion infirmary and as to messing arrangements, time of next assembly, service calls, and the local orders and regulations in force. Details for guard, fatigue, etc., are published and the sick are formed and sent to the infirmary for treatment.

When the command is to be sheltered in billets, the companies should be held at their assembly places until all billeting arrangements are completed. Each platoon leader then marches off his platoon; before dismissal, he informs his men as to the location of his own quarters and those of the captain, and as to the hour when men are to be permitted to leave the platoon area, assigns squads to their shelters, makes arrangements for lighting, preparations for extinction of fire, digging of la-

CAMP OF A REGIMENT OF INFANTRY. WAR STRENGTH.

38.8 ACRES
PLATE VIII



trines, placing of urinal buckets, etc. He inspects his area, requires it to be properly policed, and orders the necessary cleaning of arms and equipment.

797. When in close proximity to the enemy and troops must be disposed in camp or bivouac in accordance with tactical requirements, the reconnaissance of the camp site and the distribution of the units must be made by the commanding officer of troops.

798. If the area of the available ground is sufficient and suitable, the camp of the battalion or regiment should conform to Plate VIII. Under similar favorable conditions, the brigade may camp in column or in line of regiments. When the camp site has a restricted area, intervals and distances are reduced.

Under service conditions, camp sites that will permit the encampment of regiments and brigades as above indicated will not often be available, and regularity must be sacrificed to drainage, sanitation, and ease of communication.

2. ADMINISTRATION

799. When troops of different organizations are sheltered in the same town or camp, the senior line officer is the town or camp commander.

The camp or town commander regulates interior and exterior guard service, traffic control, police control of soldiers and, in hostile territory, of the inhabitants, the readiness of the command for action, and if a town major has not been assigned to the town, the distribution of quarters to incoming units, and all relations with the civil authorities. The town commander may designate an Acting Town Major when a permanent Town Major has not been assigned to the town.

800. The duties of the Acting Town Major will vary widely, depending on the length of occupancy of the billeting area by the command and on whether the area is in friendly or hostile territory. Duties which may be assigned to him include :

The conduct of all transactions between the troops and the civil authorities and inhabitants ;

The keeping of a complete and accurate list of all accommodations, showing for each building or premises the capacity in officers, men, offices, store rooms, animals and other needs to be anticipated ;

The assignment of accommodations to incoming troops and preparation of a supply of rough maps for their use ;

Location and maintenance of suitable latrines, baths, water, washing and incinerating facilities ;

Arrangements for the disposal of refuse, fire protection, and traffic regulation ;

Establishment of necessary direction signs at all points where they will be of service ;

Marking of buildings and premises as to capacity and use ;

In hostile territory, police surveillance of the inhabitants, counter-espionage measures, etc.

In regiments and larger units, a senior officer may be assigned to this duty and charged with supervision of the service of interior guards and other security measures.

801. In each camp and occupied town, an officer of the day is detailed. He reports to the camp or town commander for orders, or to the Acting Town Major when the guard is under the latter's orders. He is in command of all interior guards and is responsible for the execution of the necessary security measures, police regulations and standing orders.

In each battalion, one officer, in each company, one non-commissioned officer, are detailed to remain constantly on duty in the battalion or company. Immediately after their arrival in camp or cantonment, they report for instructions to the officer of the day. They are responsible for the maintenance of order and the execution of all regulations or orders given by the camp or town commander or the commander of their unit. They communicate all instructions received to their organization commanders at the first opportunity.

802. An interior guard is established in each camp and occupied village. Sentries should be posted at village exits, over picket lines, and wagon parks. Each unit furnishes the sentries required within its own section or area ; such sentries constitute part of the camp or town guard and are posted under its direction. The establishment of exterior guards (outguards, provost guards) may also be necessary.

The conduct of interior guards is governed by the provisions of the *Manual of Guard Duty*.

Special security measures are necessary in the case of occupied towns in hostile territory (stronger guards, patrolling in and in the vicinity of the town, guarding bridges, searching houses for telephone installations, holding of hostages, quartering of men in assembled units, closing of exits to all except military traffic, etc.).

803. When commands are billeted in towns, special precautions for the prevention of fire should be taken (provision for buckets filled with water, regulation of cooks fires, etc.).

The use of lights must be restricted and controlled, especially where there is danger of aerial bombardment.

804. When quartered in the theatre of active operations, each unit must be in such state of readiness for action that it can prepare to move on the shortest possible notice. Men sleep fully dressed, arms and equipment close at hand. On the sounding of the *Call to Arms, Assembly* or *Fire Call,* units assemble at their prescribed assembly places and proceed to the assembly place of the next higher unit or to other specially designated points.

Assembly places should be so located that units or members thereof do not cross each other's path in assembling.

805. Under circumstances where hostile aerial bombardment may be expected, concealment and dispersion of the camp in order to avoid or minimize its effects are necessary. Concealment can best be secured by camping in wooded areas; measures must be taken to prevent betraying the location of the camp through the formation of paths or trails. In permanent or semi-permanent camps or cantonments, partial protection against the effects of aerial bombardment is secured by the construction of embankments around huts or tents, by sinking the floors below the ground level, or by excavating lengths of zigzag trench to be occupied in case of alarm. Lookouts are posted to give warning of the approach of hostile aircraft, and provision made for sounding the alert. Troops at drill, when necessary, establish lookouts for the same purpose.

During concentrations prior to and during operations, troops and transportation in billets must be kept under cover from aerial observation during daylight hours.

806. The quarters of the camp or town commander should be so located that they can be easily found; at night, they should be marked by a shaded lantern. All sentries should be instructed as to the location of the commander's quarters so that messengers can be directed to it. Placards showing the name of the town and unit occupying it and the direction of routes should be posted at town exits.

807. In a prolonged occupation of a town, cantonment, or permanent camp, the provisions of the Army Regulations and orders relative to the interior economy of units in garrison apply.

3. SANITATION

The Selection of Camp Sites

808. In campaign, tactical necessity may leave little choice in the selection of camp sites, but under any conditions, the requirements of sanitation should be given every consideration consistent with the tactical situation.

809. In general, the following principles govern the selection of camp sites :

The site should be convenient to an abundant supply of pure water.

Good roads should lead to the camp. Interior communication throughout the camp should be easy.

Wood, grass, forage, and supplies should be at hand or easily obtainable.

The area should accomodate the command without crowding and without compelling the troops of one unit to pass through the area of another.

The site should be sufficiently high and rolling to drain off storm water readily, and if the season be hot, to catch the breeze. In cold weather, it should preferably have a southern exposure with woods to the north to break the cold winds. In warm weather, an eastern exposure, on ground moderately shaded by trees, is desirable.

The site should be dry. For this reason, porous soil, covered with stout turf and underlaid by a sandy or gravelly subsoil, is best. A site on clay soil or where the ground water approaches the surface is damp, cold, and unhealthful.

Alluvial soils, marshy ground, and ground near the base of hills, or near thick woods or dense vegetation, are undesirable as camp sites on account of dampness. Ravines and depressions are likely to be unduly warm and to have insufficient or undesirable air currents.

Proximity to marshes or stagnant water is undesirable on account of the dampness, mosquitoes, and the diseases which the latter transmit. The high banks of lakes or large streams often make desirable camp sites.

Dry beds of streams should be avoided ; they are subject to sudden freshet.

810. The occupation of old camp sites is dangerous, since they are often permeated by elements of disease which persist for considerable periods. Camp sites must be changed promptly when there is evidence of soil pollution or when epidemic disease threatens, but the need for frequent changes on this

account may be a reflection on the sanitary administration of the camp.

Water Supply

811. Immediately on making camp, bivouac, or billets, a guard should be placed over the water supply. If the water be obtained from a stream, places should be designated: (1) for drawing water for drinking and cooking; (2) for watering animals; (3) for bathing and washing clothing. These are located in the order stated, beginning upstream.

If the stream be small, the water supply may be increased by building a dam. Small springs may be dug out and lined with a gabion, a barrel or box with both ends removed, or with stones; the space between the lining and the earth is filled with puddled clay. A rim of clay is built around the spring to keep out surface drainage. The same method may be used in constructing small reservoirs near the borders of swamps, streams, or lakes for the purpose of increasing or clarifying the water supply.

812. Water that is not known to be pure should be purified by use of the water bag and the chemicals furnished. If these are not available, it may be boiled 20 minutes, than cooled.

813. Arrangements are made for men to draw water from the authorized receptacles by means of a spigot or other similar means. The dipping of water from the receptacles or the use of a common drinking cup is prohibited.

Improvised Kitchens

814. Camp kettles can be hung on a support consisting of a green pole lying in the crotches of two upright posts.

A narrow trench for the fire, about one foot deep, dug under the pole, not only protects the fire from the wind but saves fuel. A still greater economy of fuel can be effected by digging a similar trench slightly narrower than the diameter of the kettles, placing the kettles on the trench and filling the space between the kettles with stones, clay, etc. A flue is thus provided running beneath the kettles. The trench should be dug in the direction of the wind. The draft can be improved by building a chimney of stones, clay, etc., at the leeward end of the flue.

Four such trenches radiating from a common central chimney will give one flue for use, whatever may be the direction of the wind.

A slight slope of the flue, from the chimney down, provides for drainage and improves the draft.

815. A lack of portable ovens can be met by ovens constructed of stone and covered with earth to retain the heat. If no stone is available, an oven may be constructed by laying an empty barrel with one head out on its side and covering it with wet clay to a depth of six or more inches and then with a layer of dry earth of the same thickness. A clay flue is constructed above the closed end of the barrel, which is then burned out with a hot fire. This leaves a baked clay covering for the oven.

An oven can be similarly constructed with boards or even brushwood, supported on a horizontal pole resting on upright posts, covered and burnt out as in the case of the barrel.

An oven may be constructed by excavating a recess in a clay bank.

To bake with ovens of the type above described, first heat them and then close flues and ends.

816. Food must be protected from flies, dust, and sun. Facilities must be provided for cleaning and scalding the mess equipment of the men. Kitchens and the ground around them must be kept scrupulously clean.

817. Solid refuse should be promptly disposed of by being burned in the kitchen fire or in an improvised crematory, or by burial or by removal by scavengers.

818. In temporary camps, if the soil is porous, liquid refuse from the kitchens may be strained through gunny sacking into seepage pits dug near the kitchen. Flies must not have access to the pits. Boards or poles, covered with brush or grass and a layer of earth, may be used to cover the pits. The strainers should also be protected from flies. Pits of this kind, dug in clayey soil, will not operate successfully. When troops camp or bivouac for one night only, shallow kitchen sinks should be dug. If cooking be individual, the men should be required to build their fires on the leeward flank of the camp or bivouac.

Before marching, all sinks should be filled in, mounded, and marked.

Disposal of Excreta

819. Immediately on arrival in camp, bivouac, or billets, sinks should be dug. This is a matter of fundamental sanitary importance, since the most serious epidemics of camp diseases are spread from human excreta, by carriage of elements of disease from them by flies, or by the pollution of the water supply through drainage into it.

Sinks are usually provided for each company on the basis of one seat to each ten men, two linear feet of trench length per seat. One sink, with seats in the same proportion, is provided for the officers of each battalion. Those for the men are invariably located on the side of camp opposite the kitchens. All latrines should be at least 100 yards from any kitchen. They should be so placed that they cannot pollute the water supply or camp site as a result of drainage or overflow. For this purpose, their location and their distance from camp may be varied.

Open pits are dangerous during the fly season. The danger may be greatly reduced by requiring each individual to cover his excreta with earth or by a thorough daily burning of the entire area of the trench. Combustible sweepings or straw, saturated with oil, may be used for this purpose. When filled to within two feet of the top, sinks should be discontinued, filled in, mounded up, and marked by a proper sign.

820. For long halts or when camp is made for a single night, straddle trenches 15 inches deep, 8 to 10 inches wide, and 24 inches long, in the proportion of one to each ten men, will suffice.

In camps of longer duration, the trenches should be two feet wide, at least six feet deep, and of sufficient length to provide the proper ratio of seats to persons using them. They should be provided with a pole for a seat and a back rest and should be screened with brush or canvas.

When boards are obtainable, either a fly-proof trench cover with squatting-holes and lids or conventional box seats with hinged, falling lids should be provided.

Urinal troughs, discharging into the trenches, should be provided.

In permanent camps or billets, urinal tubs will be placed in company streets at night and removed at reveille. Their location should be plainly marked, and the tubs should be thoroughly and frequently disinfected.

4. CARE OF TROOPS

821. Insufficient rest renders troops unfit for hard work and diminishes their power of resisting disease. Commanders should therefore, whenever possible, secure for the troops their accustomed rest.

The rules of sanitation are enforced.

Men should not lie on damp ground. In temporary camps and in bivouac, they raise their beds, if suitable material such

as straw, leaves, or boughs can be obtained, or use their ponchos or slickers as a ground sheet. In cold weather and when fuel is plentiful, the ground may be warmed by fires ; the men make their beds after raking away the ashes.

When troops are to remain in camp for some time, all underbrush is cleared away, and the camp made as comfortable as possible. Watering troughs, shelter in cold weather, and shade in hot weather are provided for the animals, if practicable.

In camps of some duration, guard and other routine duties follow closely the custom in garrison. The watering, feeding, and grooming of animals take place at regular hours and under the supervision of officers.

The camp is policed daily after breakfast, and all refuse matter burned.

Tent walls are raised and the bedding and clothing aired daily, weather permitting.

CHAPTER IX. — SERVICE OF SECURITY

822. The security of a command is insured by covering detachments. During an advance, these comprise advance guards ; during a retreat, rear guards ; in camp or cantonment, outposts. The security of the flanks of a marching command is, when necessary, afforded by flank guards. The detail of a rear guard during an advance and of an advance guard during a retreat may sometimes be necessary. Patrols enter into the composition of all forms of covering detachments.

1. PATROLS

823. The following paragraphs on patrols relate in particular to the conduct of the patrol and its leader, and apply to patrols employed in covering detachments as well as in combat reconnaissance.

824. A patrol is a detachment, varying in strength from two men to a company, sent out from a command to gain information of the country or of the enemy or his defenses, or to prevent the enemy from gaining information. In special cases, patrols may be given missions other than these.

825. The commander must have clearly in mind the purpose for which the patrol is to be used in order that he may determine its proper strength, select its leader, and give the latter proper instructions.

826. The missions of patrols may be :

Before combat, to keep in touch with the enemy and observe his movements or to prevent the enemy from observing the movements of our own troops ;

During combat, to keep in touch with units on the flanks and prevent the enemy from turning or attacking the flanks of our own forces ;

After combat, to reconnoiter the enemy position or to seize tactical features in front of the line reached by the assaulting infantry ; or to cover the consolidation of the line ;

In general, to reconnoiter some portion of the enemy's forces or position, or some natural or artificial geographic feature, and obtain information relative thereto.

As a rule a patrol is sent out for one definite purpose only. Indefiniteness as to mission results in a hesitant and defensive attitude on the part of the patrol.

827. The strength of a patrol varies from two or three men to a company. It is made strong enough to accomplish its purpose and no stronger.

If the purpose is to gain information only, a small patrol is better than a large one. The former conceals itself more readily and moves less conspicuously. For observing from some point in plain view of the command or for visiting or reconnoitering between outguards, two men are sufficient.

If messages are to be sent back, the patrol must be strong enough to furnish the probable number of messengers without reducing the patrol to less than two men. If hostile patrols are likely to be met and must be driven off or if the mission be the capture of prisoners, the patrol must be strong.

In friendly territory, a weaker patrol may be used than would be used for the corresponding purpose in hostile territory.

828. The character of the leader selected for the patrol depends upon the importance of the work in hand.

For patrolling between the groups or along the lines of an outpost or for the simpler patrols sent out from a covering detachment, the average soldier will be a competent leader.

829. For a patrol sent out to gain information or for a distant patrol sent out from a covering detachment, the leader must be specially selected. He must be able to cover large areas with few men ; he must be able to estimate the strength of hostile forces, to report intelligently as to their dispositions, to read indications, and to judge as to the importance of the information gained. He must possess endurance, courage, and good judgment.

The officer sending out the patrol verifies the detail, designates a second in command, and gives the necessary instructions. His instructions are full and clear. The patrol leader is given such information of the enemy and country as may be of value to him. He is informed as to the general location of his forces, particularly of those with whom he may come in contact. He must be made to understand exactly what is required of him, where to go, when to return, and where messages are to be sent or the patrol is to report. If possible, he is given a map of the country he is to traverse, and in many cases, his route may be specified. Sentries are notified as to the patrols operating in their front.

The officer sending out the patrol must be certain that his instructions are understood.

Besides his arms and ammunition, the patrol leader, is equipped with a luminous compass, a watch, a pencil, a note book,

a flash light, and when practicable, field message blanks and a map of the country.

The patrol leader assembles the men detailed for the patrol. He inspects their arms and ammunition and satisfies himself that they are in suitable condition for the duty. He sees that none has any papers, maps, etc., that would be of value to the enemy if captured. He sees that their accoutrements do not glisten or rattle when they move. He then repeats his instructions to the patrol and assures himself that every man understands them. He explains the signals to be used and satisfies himself that they are understood.

830. No normal formation for a patrol is, or should be, prescribed. The formation and the movements of the patrol must be regulated so as to render probable the escape of at least one man in case the patrol encounters a superior force. The formation will depend upon the nature of the ground traversed and the cover afforded. The leader must adopt the formation and measures best suited to the accomplishment of his object.

In general, it should have the formation of a main body with advance, rear, and flank guards, though each be represented only by a single man.

831. The distances separating the members of the patrol vary according to the ground and the proximity of the enemy. If too close together, they see no more than one man ; if too widely separated, they are likely to be lost to the control of the leader. When at close range from an enemy whose position has been located and at night, the formation of the patrol is relatively close.

832. In general, a patrol advances from one intermediate point to another along its route of advance by bounds, successive positions being reconnoitered as far as practicable before leaving the preceding position. The country must be carefully observed as the patrol advances. In passing over a hill, the country beyond is first observed by one man ; houses, inclosures, etc., are approached in a similar manner or avoided entirely ; woods are generally reconnoitered in a thin skirmish line when the object is to determine whether they are occupied ; in passing through woods on other missions, the patrol is kept together and protected by the necessary scouting.

833 In questioning civilians, caution is observed not to disclose any information that may be of value to the enemy. Strangers are not allowed to precede the patrol. Patrol leaders are authorized to seize telegrams and mail matter and to arrest individuals when necessary.

834. When a patrol is scattered, it reassembles at some point

previously selected ; if cut off, it returns by detour or forces its way through. As a last resort, it scatters so that at least one man may return with the information.

835. The strength and the composition of hostile troops must be observed. If they cannot be counted, their strength may be estimated by the length of time a marching column consumes in passing a given point or by the area covered if in camp.

Infantry in column of squads may be assumed to occupy half a yard per man, cavalry in column of fours 1 yard per trooper, and artillery in single column 20 yards per gun or caisson. A given point is therefore passed in one minute by about 175 infantry ; 110 cavalry at walk ; 200 cavalry at trot ; 5 guns or caissons. For troops in column of twos, this estimate is reduced by one half.

Patrol leaders should if practicable know the uniforms of the various enemy organizations in order that they may be able to determine the class of troops seen when no other indications are available.

Insignia from the enemy's uniforms, picked up by patrols, often convey valuable information by indicating what troops are in the vicinity.

836. Patrols avoid fighting, except in self-defense or in order to prevent the enemy's patrols from gaining valuable information, or when necessary in order to accomplish their mission. In such cases, a patrol fights resolutely even though inferior in numbers.

837. Information gained by patrols is generally of no value unless received in time to be of use to the commander. Patrol leaders must therefore send back information of importance as soon as it is gained, unless the patrol itself is to return at once.

838. If written, messages state the place, date, hour, and minute of their dispatch. The information contained in them is clearly and concisely expressed. They are signed by the patrol leader.

The authorized message book is used, and the form therein adhered to. In pertinent cases, messages are accompanied by a sketch. Where a map reference is necessary, the name of the map is stated. The source of all information is given. Negative information may be of value.

839. If the message be verbal, the patrol leader requires the messenger to repeat it before starting back. In general, a verbal message covers but one point. Except when there is little chance of error in transmission, messages are written. The messenger must clearly understand where the message is to

be delivered and the route to be followed. Verbal messages are subsequently confirmed in writing when practicable.

840. When in friendly territory and not very far from friendly troops, one messenger is sufficient unless the message is very important. In hostile territory, either two men go together, or the message is sent in duplicate by different routes.

841. Whether the information gained is of sufficient importance to be reported at once or may await the return of the patrol is a question which must be decided in each case. In case of reasonable doubt, it is generally better to send the report promptly. If the patrol leader has received proper instructions before starting out and has the requisite ability to lead a patrol, he can generally decide such questions satisfactorily as they arise.

842. Infantry patrols are generally used for work within two miles of supporting troops, but cases arise where they must go to greater distances.

For distant patrolling, a mounted patrol under an officer is detailed.

843. For controlling the movements of the patrol, the leader makes use of the arm signals prescribed in these regulations when practicable.

On account of the short distances separating them, members of the patrol ordinarily communicate with each other quietly by word of mouth.

When a member of a patrol is sent to a distant point, communication may be effected by means of simple, prearranged signals. In addition to the signals prescribed in paragraph 43, the following signals should be clearly understood by members of a patrols :

Enemy in sight in small numbers : hold rifle above head horizontally.

Enemy in force : same as preceding, raising and lowering the rifle several times.

For communicating with the units from which they are sent out, it will often be advantageous to equip patrols with signal projectors.

2. MARCH PROTECTION

General Considerations

844. A column on the march in the vicinity of the enemy is covered by detachments called advance guards, rear guards, or flank guards. The object of these covering detachments

is to facilitate the march of the main body and to protect it from surprise or observation.

They facilitate the march of the main body by promptly driving off small bodies of the enemy who seek to harass or delay it, by removing obstacles from the line of march, by repairing roads, bridges, etc., thus enabling the main body to progress uninterruptedly in convenient marching formations.

They protect the main body by preventing the enemy from firing into it when in close formation, by holding the enemy and enabling the main body to deploy before coming under the effective fire, by preventing its size and conditions from being observed by the enemy, and in retreat, by gaining time for it to make its escape or to reorganize its forces.

845. Tactical unity is respected in making details for covering detachments.

846. The march order of the whole command explains the situation, details the commander and troops for each covering detachment, specifies the route to be taken and the approximate distance to be maintained between the main body and its covering detachments and directs such reconnaissance as the commander specially desires to have made. When practicable, the front to be covered by reconnaissance is specified.

The order of the commander of a covering detachment clearly explains the situation to subordinates, assigns the troops to the subdivisions, prescribes their approximate distances, and orders such special reconnaissance as may be deemed immediately necessary.

An advance or flank-guard commander marches well to the front, and from time to time, orders such additional reconnaissance or makes such changes in his dispositions as the circumstances of the case demand.

Advance Guards

847. An advance guard is a detachment of the main body which precedes and covers it on the march.

848. The advance-guard commander is responsible for its formation and conduct. He should bear in mind that its purpose is to facilitate and protect the march of the main body. Its own security must be effected by proper dispositions and reconnaissance, not by timid or cautious advance. It must advance at normal gait and search aggressively for information of the enemy. Its action when the enemy attempts to block it with a large force depends upon the situation and plans of the commander of the troops.

849. The strength of the advance guard varies from one-twentieth to one-third of the main body, depending upon the size of the main body and the service expected of the advance guard.

850. The formation of the advance guard must be such that the enemy will be met first by a patrol, then in turn by one or more larger detachments, each capable of holding the enemy until the next in rear has time to deploy before coming under effective fire.

851. Generally, an advance guard consisting of a battalion or more is divided primarily into a **reserve** and a **support.**

852. In an advance guard consisting of one battalion, the machine guns, if any, usually form part of the reserve. In an advance guard consisting of two or more battalions, machine guns are assigned to the support and the reserve. Light mortars, one-pounder guns, and accompanying artillery march with the reserve ; the pioneer platoon is attached to the support.

853. Connection between the elements of an advance guard s maintained from rear to front, unless otherwise expressly ordered.

854. The **support** sends forward an **advance party.** The advance party, in turn, sends a patrol called a **point** still farther to the front. Patrols are sent out to the flanks when necessary. When the distance between parts of the advance guard or the nature of the country is such as to make direct communication difficult, connecting files march between the subdivisions to keep up communication. Each element of the column sends the necessary connecting files to its front. Cyclists and mounted orderlies may often be advantageously employed for the maintenance of connection.

855. The functions of the several fractions of the advance guard determine the distribution of the advance-guard troops.

The reserve constitutes the maneuvering and offensive element of the advance guard ; it therefore comprises as large a proportion of the advance guard as is consistent with its own security and the preservation of its maneuvering power.

The function of the support is in principle the security of the reserve and the offering of such resistance at various points on the front of the advance as will enable the reserve to deploy for action at points of decisive importance. It is given sufficient strength to carry out its reconnoitering and resisting function.

The advance party constitutes the reconnoitering element of the support ; it is made strong enough to furnish the patrols required for the reconnaissance of the front of the advance,

and secure the march of the support. In addition to the reconnaissance of the advance party it will frequently be necessary to send out detached patrols from the support and reserve.

In supports of a strength equalling or exceeding three companies, a company usually constitutes the advance party. In small supports, it will frequently be advantageous to retain the entire support in one body and send out the point and other patrols directly from it.

856. The distances separating the parts of an advance guard vary according to the mission of the whole force, the size of the advance guard, the proximity and character of the enemy, the nature of the country, etc. They increase as the strength of the main body increases ; they are less when operating in rolling, broken country than in open country ; when in pursuit of a defeated enemy than against an aggressive foe ; when operating against cavalry than when against infantry.

If there be a mounted point, the infantry maintains its gait without reference to it ; the mounted point regulates its march on the infantry.

857. To afford protection to an infantry column, the country must be observed on each side of the road as far as the terrain affords positions for effective rifle fire upon the column. If the country that it is necessary to observe be open to view from the road, reconnaissance may not be necessary.

858. The advance guard is responsible for the necessary reconnaissance of the country on both sides of the line of march. Special reconnaissance may be directed by the commander of the troops, or cavalry may be reconnoitering at considerable distances to the front and flanks, but this does not relieve the advance guard from the duty of local reconnaissance.

859. Patrols are sent to the flanks when necessary to reconnoiter a specified locality and rejoin the column and their proper subdivision as soon as practicable.

Where the country is generally open to view, but localities in it might conceal an enemy of some size, reconnaissance is necessary. Where the road is exposed to fire and the view is restricted, a patrol is sent to examine the country in the direction from which the danger threatens. The object may be accomplished by sending patrols to observe from prominent points. When the ground permits and the necessity exists, patrols may be sent to march abreast of the column at distances which permit them to see important features not visible from the road.

Mounted men or cavalry, when available, are used for flank patrols.

860. Cases may arise where the best means of covering the head and flanks of the column will be by a line of skirmishers extending for several hundred yards to both sides of the road, and deployed at intervals of from 10 to 50 yards. A column may thus protect itself when passing through country covered with high corn or similar vegetation. In such case, the vegetation forms a natural protection from rifle fire beyond very short ranges.

861. Fixed rules for the strength, formation, or conduct of advance guards cannot be given. Each case must be treated to meet conditions as they exist. That solution is generally the best which, with the fewest men and unbroken units, amply protects the column and facilitates the advance. When in close contact with the enemy and passing through the zone of his artillery fire, the larger fractions of the advance guard advance in approach formation.

Rear Guards

862. A rear guard is a detachment detailed to protect the main body from attack in rear. In a retreat, it checks pursuit and enables the main body to increase the distance between it and the enemy and to re-form if disorganized.

The general formation is that of an advance guard reversed.

863. The commander takes advantage of every favorable opportunity to delay the pursuers by obstructing the road or by taking up specially favorable positions from which to force the enemy to deploy. In this latter case, care must be taken not to become so closely engaged as to render withdrawal unnecessarily difficult. The position taken is selected with reference to ease of withdrawal and ability to bring the enemy under fire at long range (see pars. 611, 612).

864. Machine guns and infantry batteries and single guns form a very important part of the rear guard.

Flank Guards

865. A flank guard is a detachment detailed to cover the flank of a column marching past, or across the front of, the enemy. It may be placed in position to protect the passage, or it may be so marched as to cover the passage.

866. The object of the flank guard is to hold the enemy in

check long enough to enable the main body to pass, or like the advance guard, to enable the main body to deploy.

Like all other covering detachments, it is made no stronger than is necessary; it is detailed only when special flank protection is required.

867. Practicable communication must exist between the flank guard and the main body.

868. The flank guard is marched in the same manner as a separate command; that is, with advance or rear guards or both, as circumstances demand, and with patrolling on the exposed flank.

869. At times it may be necessary for an advance-guard commander to send out large reconnoitering parties which temporarily assume the character and duties of a flank guard. Such parties are given specific orders as to when and where they are to rejoin the column.

870. When the direction of the advance of the main body changes, the former advance guard may become a flank guard; a new advance guard is then detailed.

3. OUTPOSTS

General Considerations

871. An outpost is a covering detachment detailed to secure a camp, cantonment, bivouac, or a defensive position against surprise, to prevent an attack upon it before the troops can prepare to resist, and to deny to the enemy observation into their dispositions and movements.

The outpost carries out such reconnaissance as is necessary for the security of the resting troops. When in contact with the enemy, it is responsible that such contact is not lost when the enemy withdraws in front of the position.

872. The size and the dispositions of the outpost will depend upon many circumstances, such as the size of the whole command, the proximity of the enemy and the situation with respect to him, the nature of terrain, etc.

A suitable strength may vary from a very small fraction to one-third of the whole force. For a single company in bivouac, a few sentinels and patrols will suffice; for a large command, a more elaborate outpost system must be provided. It should be no stronger than is consistent with reasonable security.

The most economical protection is furnished by keeping close contact with the enemy by means of outpost patrols,

in conjunction with resisting detachments on the avenues of approach.

873. In a brigade or smaller force on the march toward the enemy, the outpost is generally formed from the advance guard and is relieved the following day when the new advance guard crosses the line of outguards. In a retreat, the detail for outpost duty is generally made from the main body. The new outpost becomes the rear guard the following day.

874. When, as in large forces, an advance or a rear guard performs such duty for several days, the outpost during this period is furnished by the advance or the rear guard, and orders for the establishment of the outpost are issued by the advance or the rear-guard commander.

When the command is small and stationary for several days, the outpost is relieved daily. In large commands, the outpost will, as a rule, be relieved at intervals of several days. The period of outpost duty will largely depend on the severity of the service.

875. The positions held by the subdivisions of the outpost are generally prepared for defense, but conditions may render this unnecessary.

Troops on outpost keep concealed as much as is consistent with the proper performance of their duties ; especially do they avoid appearing on the sky line.

Outpost troops do not render honors.

Distribution of Outpost Troops

876. The outpost will generally be divided into three parts. These, in order from the main body, are the **reserve**, the **supports**, and the **outguards**.

The distances separating these parts, and their distance from the main body, will depend upon the object sought, the nature of the terrain, and the size of the command. There can be no uniformity in the distance between supports and reserve, nor between outguards and supports, even in the same outpost. The avenues of approach, facilities for observation, and other important features of the terrain will largely control their exact position.

877. The **reserve** of the outpost is held at some central point from which it can readily *support the troops in front by reinforcement or counter-attack or hold a rallying position* on which they may retire. It is generally located near the principal route leading from the enemy.

The reserve may comprise one-fourth to two-thirds of the strength of the outpost.

878. The supports constitute the line of resisting units of the outpost. They are the principal agencies of security of the outpost. In outposts equalling or exceeding the strength of a battalion, a support is usually constituted by a company.

The supports are numbered consecutively from right to left. They are placed at the more important points on the outpost line, usually on or near the line on which resistance is to be made in case of attack. Supports hold their positions, unless the orders of the outpost commander prescribe otherwise.

879. The movement of troops when not engaged in combat is for the most part confined to roads. As a general rule, therefore, roads exercise the greatest influence on the location of supports, and a support will generally be placed on or near a road. The sector which it is to cover is clearly define by means of tangible lines on the ground and is such that the support is centrally located therein.

Supports insure their own security by means of outguards and patrols.

880. The outguards comprise small detachments established by the supports for their own security and for the observation of the sector assigned to them. For convenience, they are classified as pickets, sentry squads, and cossack posts. They are numbered consecutively from right to left in each support.

Posts at a short distance from the support may be held by weak outguards (cossack posts, sentry squads) while important posts at a considerable distance must be more strongly held (pickets).

881. A picket is a group consisting of two or more squads, ordinarily not exceeding a platoon, posted in the line of outguards to cover a given sector. It furnishes patrols and one or more sentinels, double sentinels, sentry squads, or cossack posts for observation.

Pickets are placed at the more important points in the line of outguards, such as road forks. The strength of each depends upon the number of small groups required properly to observe its sector.

882. A sentry squad is a squad posted in observation at an indicated point. It posts a single or a double sentinel in observation, the remaining men resting near by and furnishing the reliefs of sentinels.

883. A cossack post consists of four men. It is an observation group similar to a sentry squad, but employs a single sentinel.

884. At night, it will sometimes be advisable to place some of the outguards or their sentinels in a position different from that which they occupy in the daytime. In such case, the ground is carefully studied before dark, and the change made at dusk. Where an outpost occupies a position for a considerable length of time in close proximity to the enemy, provision for a frequent change in the position of outguards must be made in order to avoid their capture by hostile raiding parties.

885. Sentinels are generally used singly in daytime, but at night, double sentinels will be required in most cases. Sentinels furnished by cossack posts or sentry squads are kept near their groups; those furnished by pickets may be as far as 100 yards away.

Every sentinel should be able to communicate readily with the body to which he belongs.

886. Sentinel posts are numbered consecutively from right to left in each outguard. Sentry squads and cossack posts furnished by pickets are counted as sentinel posts.

887. The arc of observation for which each sentry is responsible is clearly defined by definite terrain lines or points.

888. Instead of using outguards along the entire front of observation, part of this front may be covered by patrols only. Patrols are used to cover such sections of the front as can be crossed by the enemy only with difficulty and over which he is not likely to attempt a crossing after dark. They may also be used to supplement and extend the observation of sentries at night.

In daylight, much of the local patrolling may be dispensed with if the country can be seen from the posts of the sentinels. Patrols should, however, frequently be pushed well to the front unless the ground in that direction is exceptionally open.

889. Patrols or sentinels must be the first troops which the enemy meets, and each echelon in rear must have time to prepare for the blow. These echelons cause as much delay as possible without sacrificing themselves and gradually retire to the line where the outpost is to make its resistance.

890. Patrols must be used to keep up connection between the parts of the outpost except when, during daylight, certain fractions or groups are mutually visible. After dark, this connection must be maintained throughout the outpost except where the larger subdivisions are provided with wire communication. Wire communication should extend as far forward as the supports.

891. In addition to the ordinary outguards, the outpost commander may detail from the reserve one or more detached

posts to cover roads or areas or occupy important observation points not in the general line assigned to the supports.

In like manner, the commander of the whole force may order detached posts to be sent from the main body to cover important roads or localities not included in the outpost line.

The number and strength of detached posts are reduced to the absolute needs of the situation.

Prominent points within the outpost position in rear of the outguards which afford views over the foreground are occupied as observation posts.

892. When combat is imminent, the necessity for unity of command will usually require the establishment of separate outposts or outguards by the smaller units (regiments, battalions, or companies) in the first line. Higher commanders insure contact and cooperation between adjacent units.

When battle is interrupted by nightfall and troops bivouac on the battlefield, each first-line company insures its own security by posting outguards and sending out patrols.

Establishing the Outpost

893. The outpost is posted as quickly as possible so that the troops can the sooner obtain rest. Until the leading outpost troops are able to assume their duties, temporary protection, known as the **march outpost**, is furnished by the nearest available troops.

894. The halt order of the commander, besides giving the necessary information and assigning camp sites to the parts of the command, details the troops to constitute the outpost, assigns a commander therefor, designates the general line to be occupied, and when practicable, points out the position to be held in case of attack.

895. The outpost commander, upon receipt of this order, issues the outpost order with the least practicable delay ; it is of the first importance that the most essential measures be rapidly executed (*e. g.*, occupation of important road connections). In large commands, it may often be necessary to give the order from the map, but usually the outpost commander will have to make some preliminary reconnaissance, unless he has an accurate and detailed map.

The order gives such available information of the situation as is necessary to the complete and proper guidance of subordinates ; designates the troops to constitute the supports ; assigns their location and the sector each is to cover ; provides for the necessary detached posts ; indicates any special recon-

naissance that is to be made ; orders the location and dispositions of the reserve ; disposes of the train if same is ordered to join the outpost ; and informs subordinates where information will be sent.

896. Generally, it is preferable for the outpost commander to give verbal orders to his support commanders from some locality which overlooks the terrain. The time and the locality are so selected that the support commanders may join their commands and conduct them to their positions without causing unnecessary delay to their troops. If possible, the reserve commander receives his orders at the same time as the support commanders. Subordinates who receive orders separately are informed of the location of other parts of the outpost.

In large outposts, written orders are frequently most convenient.

After issuing the initial orders, the outpost commander inspects the outpost, completes his dispositions by more detailed orders, and sends his superior a report of his dispositions. He prescribes the degree of readiness for action and the conduct to be observed in case of attack.

He takes post where messages can most easily reach him and from which his orders can best be transmitted. His post must always be easy to find, especially at night. He must have at hand the necessary runners, cyclists, and mounted orderlies.

897. The reserve is marched to its post by its commander, who then sends out such detachments as have been ordered and places the rest in camp or bivouac, over which at least one sentinel should be posted. Connection must be maintained with the main body, the supports and nearby detached posts. The place of formation in case of alarm must be clearly designated and understood by all members of the reserve.

898. The supports march to their posts, using the necessary covering detachments when in advance of the march outpost. A support commander marches with the advanced elements of his support, reconnoiters the ground and prepares to issue his order. The order fully explains the situation to subordinates, or to the entire command, if it be small. It details the troops for the different outguards, or designates the units to furnish the outguards, and when necessary, defines the sector each is to cover and the patrolling to be carried out. It provides the necessary sentinels at the post of the support, the patrols to be sent therefrom, and arranges for the necessary intrenching, construction of barricades, etc. Connection is maintained with adjoining supports and with the outguards furnished by the support.

899. In posting his command, a support commander seeks to cover his sector in such manner that the enemy can not reach the position of his support in dangerous numbers and unobserved, or pass by it within the sector intrusted to it. On the other hand, he must economize men on observation and patrol duty, for these duties are unusually fatiguing. He must practice the greatest economy of men consistent with the requirements of practical security.

900. As soon as the posting of the support is completed, its commander inspects the dispositions and corrects defects, if any, and reports the disposition of his support, including the patrolling ordered, to the outpost commander. This report is preferably made by means of a sketch. Dispositions are also communicated to adjacent supports.

901. Each outguard is marched by its commander to its assigned station, and especially in the case of a picket, is covered by the necessary patrolling to prevent surprise.

Having reached the position, the commander explains the situation to his men and establishes reliefs for each sentinel and if possible, for each patrol to be furnished. Besides these sentinels and patrols, a picket must have a sentinel at its post.

The commander then posts the sentinels and points out to them the principal features, such as towns, roads, and streams, and gives their names. He gives the direction and location of the enemy, if known, and of adjoining parts of the outpost.

He gives to patrols the same information and the necessary orders as to their routes and the frequency with which the same shall be covered. Each patrol should, when practicable, go over its route once before dark.

The reliefs pertaining to each sentry post accompany the first relief at the original establishment of the post. The outguard commander prescribes whether they are to return to the post of the outguard or remain near the sentry on post as a sentry squad or cossack post.

902. Every picket maintains connection by patrols with outguards on its right and left. Each commander takes precautions to conceal his outguard and generally strengthens his position by entrenching.

4. SECURITY IN POSITION WARFARE

General

903. In case the position held by the front-line troops is not favorable for defensive combat or when for other reasons it is

inadvisable to offer the main resistance to a serious hostile attack in an advance position, a defensive position is selected further to the rear, and the ground in front lightly held by an outpost. This arrangement is especially necessary when the end of an engagement leaves our troops in a disadvantageous position for fighting a defensive engagement.

When an outpost zone is not held, the line of resistance is, as a general rule, preceded by a line of observation held by outguards detailed by first-line companies.

The general principles of security set forth in preceding paragraphs of these regulations are applicable to position warfare. More detailed prescriptions which are the consequence of the stationary character of position warfare are treated in succeeding paragraphs.

904. Position warfare permits of the development of a highly organized service of security and observation and requires in part the training of a specialized personnel. The organization of this service comprises : (1) guard service of the position ; (2) observation posts ; (3) night patrols in front of the accessory defenses ; (4) sniper's posts.

Guard Service

905. The first-line platoons are the principal organs of the guard service of the position. They furnish the sentry posts for the line of observation and the advanced posts.

Units in rearward echelons establish such sentries as are necessary to insure their own readiness for action and for giving the alarm in case of gas attack. At least one sentry for each shelter is posted.

906. One officer in each company and one noncommissioned officer in each platoon is constantly on duty. They are responsible to their respective commanders for the service of security of their units. They make frequent inspections to assure themselves of the vigilance of the sentries and observers and their proper instruction and ascertain whether they have any information about the enemy to report.

907. The duties of the noncommissioned officer on guard are :

To familiarize himself with the location and exact duties of each combat group of the platoon ;

To insure that sentries are alert, rifles loaded, gas-alarm apparatus in readiness ;

To verify the condition of loopholes ;

To verify the orders, written or verbal, which sentries transmit to each other ;

To make known to sentries the time of departure and return of patrols and their itinerary ;

To keep the flare pistol and fire it if suspicious noises are heard ;

To report to the officer on watch and the platoon leader all incidents of his tour and the arrival of a superior officer ;

To transmit to his successor the written or verbal orders and the panoramic sketch of the portion of the hostile position under observation.

908. Sentries may be posted directly from the first-line platoons by the noncommissioned officer on guard or from a sentry squad or cossack post.

909. Each sentry must be informed as to location of the post of his platoon leader and that of the sentry on each side and as to whether there are any patrols or working parties in front. Should there be any salients in our line, the sentry is instructed so as to avoid any possibility of his firing toward our trenches. All sentries are instructed as to the method of giving the gas alarm. At night, sentries are posted at the entrance to all shelters to arouse the occupants in case of attack or gas alarm. They are similarly posted during hostile bombardment to give warning when the enemy debouches for attack.

Sentries make as little noise as possible in challenging and advancing parties.

910. During the day, sentries observe through loopholes or by means of a periscope ; at night, they observe over the parapet.

911. Listening posts are advanced sentry posts (usually cossack posts) established at night to warn the front-line garrison of the approach of hostile raiding or attacking parties.

When the listening post is connected with the front-line trench by a communicating trench, arrangements must be made for blocking or barricading the latter by the sentinel, who falls back after giving the alarm (see Figure 53, page 84).

912. As advanced posts are easy prey for hostile raiding parties, their habitual use should be avoided and should be resorted to only when it has been impossible to precede the line of resistance by an observation parallel or for certain specific purposes such as observation of the accessory defenses when these are very wide, flanking the front of the trenches, etc.

913. Sentries are relieved every two hours except under unusual conditions. The number of sentries varies with the

proximity of the enemy's trenches, the character of the enemy, the nature of our own defenses, the field of view to the front, and the distribution of our own troops. A larger number of sentries is required at night than during the day.

914. The primary function of sentries is to insure the immediate readiness of the command in case of hostile attack and to offer the first resistance to the enemy's advance. The continuous surveillance of the hostile position for the purpose of collecting information relative to the enemy is carried out by the observation posts.

Both sentries and observers serve as lookouts.

Observation

915. The functions of observation posts are :

(*a*) To gather information relative to the enemy ; his daily life, habits, emplacements of his guns, movements carried out near the front, etc. ;

(*b*) To give the alarm in case of attack.

916. Each unit (platoon, company, battalion, etc.) furnishes the personnel for its own observation posts.

917. The posts of commanders should be established near their observation posts. The choice of the latter precedes that of the former. In each unit, a sufficient number of posts should, when practicable, be established to insure that the entire sector of the unit is under continuous observation.

918. The essentials of a good observation post are good field of view, concealment, and sufficient space for two men. The design of the post should permit of construction in a single night and the post should be rainproof and splinter proof. The equipment of the post will vary with its importance and the field of view. The more important posts should be equipped with a telescope, an alidade, map, panoramic sketch, luminous compass, protractor, luminous watch, note book and pencil.

919. Except in the first-line companies, observation posts should, when practicable, be located at some distance from the trenches so that they will not be included in the fire directed against them. Placing the observation posts near prominent points of the terrain should be avoided. Men should prohibited from walking about in the vicinity of observation posts. The posts and the passages leading to them should be carefully concealed and camouflaged. The formation of paths converging at a post should be particularly avoided.

For better protection and concealment, observation posts should when practicable be oblique to the front (Figure 56).

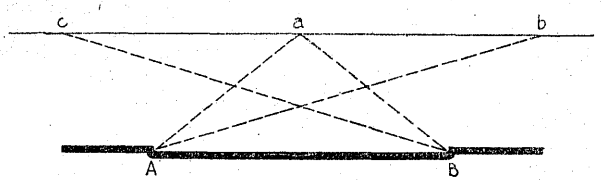


FIG 56

ab, Part of the enemy's trench observed by lookout A.
ac, " " " " " " " B.

920. Some men are naturally better qualified as observers than others ; ability is developed by practice. The training of good observers is a matter of the greatest importance. They must not only be able to see without being seen, but they must have tenacity and patience to observe. The responsibility for their training rests on the company, battalion, or regimental officers under whose daily control the observers serve.

921. Each platoon should have at its disposal at least 6 observers of keen vision who are good shots. They alternate on duty in order to insure continuity of observation and are excused from certain other duties.

922. Observers thoroughly familiarize themselves with their sectors of observation by a detailed study of the terrain, of the panorama of the observation post, of maps of the sector, and of photographs. They are instructed in the use of the matériel of the observation post.

923. The observer should be particularly on the lookout in respect to :

Enemy sentries, snipers, working parties and any points where he indicates his presence by periscopes, etc. :

Enemy trenches : saps, lookout posts, loopholes, breaches in trench, signs of reliefs, occupied sections, dugouts, new work, latrines, depots ;

Wire : gaps, new wire, tracks of patrols through wire ;

Mining : signs of soil excavated and materials carried ;

Gas and liquid fire : indications, such as the escape of gas after shelling, suspicious emplacements ;

Batteries : activity, nature of guns, shells and direction ;

Lights : signals, rockets, flares, and searchlights ;

Weather : wind (direction and force) ; visibility ;

Airplanes and balloons.

The least change in the enemy lines (obstacles, ground dug up), or any other indication of preparation for an attack should be reported to the watch officer or noncommissioned officer. Observers watch particularly the points to which their attention has been drawn by preceding observers and upon which they may hope to fire with success.

Patient, attentive observation always gives valuable information about the enemy's customs (time for reliefs, supplies, etc.).

Dust blown up by a shot, or smoke from a cigarette may reveal a loophole habitually occupied. Earth thrown up indicates that a fatigue party is constructing a dugout or field work. A small earth heap and smoke reveal the location of a dugout. Study of the battle map and of aerial photographs may show the location of crossroads and the most important communication trenches, upon which it is always advisable to fire with trench mortars at hours when they are supposed to be occupied.

Every effort should be made to locate machine guns, trench mortars, observation posts, etc., and to interpret the presence of the smallest object or any unusual sign appearing on the enemy's side. This information is indispensable in case we attack, and also to insure the daily wearing down of the enemy.

924. The observers combine their special work with giving the alarm by the means at hand in case of surprise attack or an attack preceded by a bombardment ; giving the gas alarm ; observing and repeating the prearranged signals. Observation posts must possess sure and rapid means of transmitting information to the units to be warned. Facility of communication should be considered in locating the post.

925. Observers in rearward echelons repeat signals and rockets from the first line.

Night Patrols

926. Observation is supplemented during the night by the reconnaissance of patrols detailed by the captain or the battalion commander.

The missions of night patrols may be :

To gain information relative to enemy troops or enemy defensive works ;

To capture prisoners ;

To kill or harass the enemy.

These patrols always have a definite mission : to reconnoiter such point ; to prepare an ambush at such place, etc. For the

general mission of protection of the front line, stationary listening posts are more effective than patrols.

927. The officer sending out the patrol determines the time and point at which it will leave the lines (through hidden passages prepared in the barbed wire or from a listening post), the route, and the probable time and place of return. This information is communicated to watch officers and non-commissioned officers, neighboring companies, and artillery, trench-mortar, and machine-gun units covering the sector.

928. Night patrolling should be systematically organized. For troops just commencing the occupation of a stabilized sector, the reconnaissances to be carried out should embrace :

(*a*) Our own front line and accessory defenses in front of it ;

(*b*) Shell craters and old trenches between our front line and the hostile front line ;

(*c*) Enemy wire, saps, listening posts.

These reconnaissances should as a rule be carried out in the order stated.

929. Reconnaissance of our own wire is first carried out for the purpose of ascertaining its condition and in order to locate gaps for the purposes of exit and entry. Landmarks on our own parapet are also located for purposes of subsequent orientation when operating in " No Man's Land. " By taking bearings on these landmarks, patrols will be able to determine their own position at any time and render accurate report as to the location of objects reconnoitered.

930. Shell craters and old trenches are next reconnoitered to determine whether they are occupied by the enemy, and if so, the strength of the post, the state of wire protection, practicability of raiding the post, etc.

931. In investigating the enemy's wire, it is generally best to work from one or both flanks inward. The starting point is located by taking a bearing from some point within our own lines or from a sap head. The stopping point should similarly be located by bearings on prominent objects in our own back area or within the enemy's lines. When reporting on wire, the following points should be observed :

1. Strength, height, depth, thickness or density, number of lines of wire.

2. Distance of inner line from enemy front line, distance between lines, map location of portion examined.

3. Gaps : map location, width, whether straight or zigzag, whether left purposely for passage of enemy patrols or cut by our gunfire.

4. Effect of our recent gun or trench-mortar fire.

5. Nature of construction : Apron wire, chevaux-de-frise, barbed, whether wooden or metal-screw stakes are used, etc.

6. New work : position and extent and probable date of construction.

When investigating a gap for a raid, it is imperative that the patrol leader go completely through it in order to be certain that no obstacle to the passage exists.

932. Patrols sent out to gain information should not fight unless it is necessary to do so to accomplish their mission.

These patrols should be small in numbers (2 to 5 men).

Patrols sent out for the capture of prisoners should be stronger than reconnoitering patrols (5 to 15 men).

933. Before departure, patrols should have studied the ground to be covered from maps, airplane photographs, and observation posts. In case the mission is the capture of prisoners, they should be familiar with the habits of the enemy, the routes followed by his patrols, the location of his sentries, listening posts, advanced posts, etc. The best means of capturing a hostile patrol is the preparation of an ambush along its route ; stalking hostile patrols should in principle be avoided.

Patrols for the protection of working parties should select a good covering position and avoid unnecessary movement.

934. Before departure, the patrol leader examines the equipment of the patrol to see that is makes no noise. Patrols should never wear steel helmets as they click when they hit a piece of barbed wire, show an unmistakable outline, and prevent crawling with the face on the ground. Revolvers and grenades are usually the only arms carried. Rifles are too unwieldy and noisy and soon become unserviceable due to clogging with mud. Hands and face and the outside of revolvers should be stained with mud. Men subject to cough should carry gum as a preventive ; a cough close to the enemy is certain means of detection. All forms of identification such as identity disks, insignia, and letters should be removed. Luminous watches and compasses should be covered. All men of the patrol should know the time and place of departure, the route to be followed, the time and place of return, and the signals for communication with each other.

935. For the purposes of better observation by the patrol, flares may be sent up from our front-line trench at pre-arranged times. When the time comes for the flare to be fired, the entire patrol must be in shell holes or under other cover. Care must be taken that the flare is so fired as to pass over the heads of the patrol. A flare falling behind the patrol will throw it into relief and expose it to hostile view. A light dropping just in

front of the hostile front line blinds the enemy and shows up the wire very plainly to the patrol. If the light goes beyond the hostile trench, it does not blind the enemy but still shows up the wire very plainly to the patrol. The best time to observe is while the light is still in the air and before it has passed over the hostile front line. While the patrol is out, no other flares must be fired near the place where it is working.

A patrol should remain motionless the moment a flare goes up. The best time to move is when it has just gone out.

936. The formation of the patrol will vary according to circumstances. Generally, some form of wedge formation which permits the patrol to form rapidly for action in any direction is most effective. Unless the night is very bright or many flares are being sent up, the patrol may advance by crouching or creeping to within 100 yards of the hostile line. Beyond this point, movement must be by crawling, using increasing care to within 15 or 20 yards of the enemy line, where movement is possible only by inches. During this latter stage of the advance, members of the patrol must be in constant physical touch with each other. One man must be constantly listening while the others are advancing. The route of advance selected should be in dead ground as far as possible. Care must be taken to avoid sky lines and get off the lips of shell craters as soon as possible.

The following method of crawling should be practiced :

Lie flat on the belly on the ground, heels down, left side of face on ground ; extend arms forward overhead, being careful not to raise the head. Feel the ground in front and then bring back the hands to the side of the head. Pull up right leg and push the body forward, raising very slightly on the elbows. For faster travelling when farther away from the enemy, alternate movement on right and left side. Keep the heels down.

937. The return journey of the patrol should be made by a different route from that followed in its advance.

938. Patrol duty is an excellent means of elevating a soldier's courage. Volunteers should be called for in exceptional cases only.

Sniping

939. The purpose of observation in the trenches is not only to give warning when the enemy leaves his trenches but continuously to watch for every detail which may take place within his defensive organization and take advantage of his slightest movement for inflicting losses upon him.

Fire for the purpose of wearing him down should be the

constant object of all platoon leaders and troops and should not be slackened for fear of reprisals.

940. In the execution of harassing fire, observers and snipers frequently work in pairs, the observer indicating the targets discovered to the sniper and observing the results of his fire.

941. Sniping fire may be delivered from specially constructed sniping posts, from shell craters, sapheads, or other position outside the trenches, through loopholes in the parapet, or over the parapet. The rifle may be laid in a fixed rest or on a sniperscope mounting or fired without special rest, using a telescopic sight or ordinary rifle sights modified to increase their visibility for night firing.

942. Sniping posts are so located and sectors of fire so assigned to each post as to cover the entire front. The posts must be located within 400 yards from the hostile front line. They may be in the first, second, or third trench, in approach trenches, in our own wire, in shell holes in front of our front line or between our lines or in trees or houses. For each post, at least one alternative position should be selected.

Concealment is the most important element in the construction of sniper's posts. Background must be given careful consideration. The post may be concealed by the adaptation of various objects, such as an old boot with a loophole cut in the heel ; spool of barbed wire ; dummy sandbag ; artificial tree stump, etc.

The design of snipers' posts must embody the following requisites :

The post must be capable of construction in one night ;

It must afford sufficient space for two men ;

It must be rainproof ;

It must provide room for head and shoulders ;

It must provide a rest for rifle and arm ;

Loopholes must be pointed in the proper direction ; the proper alignment may be insured by driving stakes on the line of fire ;

A cover for the loophole must be provided ;

There must be a curtain or other means of darkening the entrance.

943 The following precautions should be observed in the use of sniping posts :

The loophole should be masked when the curtain is drawn ;

Smoking must not be permitted in the post ;

Glittering objects should be kept out of sight ;

The rifle should not be allowed to project too far beyond the loophole ;

Care must be taken that shots do not kick up dust in front of the loophole and betray the location of the post;

If the post is discovered, it should be temporarily discontinued or completely abandoned, and a new location selected.

Sniping posts should be provided with a landscape sketch and a range card.

For night firing, provision must be made for blinding the flash of discharge by placing a double thickness of canvas or sandbag 18 or 20 inches in front of the muzzle. The screen should be removed before dawn.

944. The rifle may be laid by day on the objectives selected for for night firing and clamped on its line of fire.

Favorable objectives are : gaps in enemy's wire which will probably be repaired at night ; sap heads ; sentry and lookout posts; loopholes; dugouts; exposed points in approach trenches; machine guns spotted by their flashes.

945. Sniping fire may be employed in conjunction with the operations of patrols to distract the attention of the sentry at the point to be reconnoitered.

946. Targets are usually most numerous in the early morning or at dusk, and snipers should be particularly alert at these times. The sniper is at a disadvantage when he is facing the sun. He should if possible select the time for firing when the light is full on the ground where targets are expected and he himself is in a comparatively bad light. Additional protection from discovery may be secured by the use of camouflage clothing and by disguises improvised by using grass, leaves, etc., and by smearing hands, face, and equipment to harmonize with surroundings. Regular outline of any shape and abrupt movements must be avoided.

947. Provision should be made for firing on transient objectives which reveal themselves at night. For this purpose, a visible line of sight must be improvised or telescopic sights employed. A line of sight may be improvised by attaching a piece of white cotton to the front sight and a strip of white tape along the barrel from front to rear sight and by pasting a piece of white cardboard with a hole punched in center on the rear sight. An effective range of from 30 to 50 yards may be obtained in this manner. With a bright moon, effective fire at a range of 200 yards can be delivered with the telescopic sight.

948. Snipers must be skilled in working the bolt of the rifle and in loading noiselessly. To avoid long flashes, the barrel and bolt must be absolutely dry. The sniper should remain in shadow, occupy low ground, and try to get the enemy on

the sky line. To draw targets or locate hostile snipers, some sort of decoy may be successfully employed. Effort should be made to locate the direction from which hostile sniping comes. Any casualty from rifle fire should be at once reported and investigated, and snipers especially detailed to deal with hostile snipers responsible.

949. Rifle grenades are also used for the delivery of harassing fire. For night firing, the rifle is registered by day on important objectives.

5. COORDINATION AND TRANSMISSION OF INFORMATION

950. Regulations relative to coordination and transmission of information obtained through observation are contained in " Instructions for Regimental Intelligence Service ".

6. TACTICAL CONDUCT OF OUTPOSTS

951. The conduct of an outpost is essentially a defensive operation. The provisions of these regulations relative to the defensive apply to the conduct of an outpost in case of hostile attack and to the preparation of plans of outpost defense.

CHAPTER X. — SPECIAL OPERATIONS

1. NIGHT OPERATIONS

952. The object of night operations may be to effect a secret concentration before an attack ; to gain time ; to effect an approach to a hostile position with a view to launching an attack at daybreak ; to cross a zone made impassable by hostile fire by day ; to effect a withdrawal ; to deliver an attack ; to execute a reconnaissance ; or (in position warfare) to effect a relief, execute works under the cover of darkness, or bring up supplies on roads under hostile observation.

953. Night operations are characterized by :

(*a*) Decrease in the effectiveness of aimed fire and corresponding increase in the importance of the means of close combat, of the defensive fire of fixed weapons that can be laid on a definite line of fire by day (machine guns), and in general of the importance of movement.

(*b*) Difficulty in the maintenance of control and of contact and communication between units, with consequent necessity for close formations. Decrease in the effectiveness of fire permits of dense formations.

(*c*) Difficulty in the maintenance of direction and consequent necessity for limitation of objectives.

(*d*) Highly sensitive morale of troops with consequent increase in the importance of the effect of surprise on the part of the offense and of the service of security and the preparation of ambushes on the part of the defense.

954. Night marches must be carefully prepared. The column must be kept well closed up, advance and rear guard distances greatly reduced, guides stationed at cross roads to prevent the wrong route from being taken, strict march discipline maintained, and a moderate rate of march observed. Numerous connecting files should be provided. When practicable, night concentrations should be effected by motor transport. Daybreak should find the troops either in position or in concealed localities (woods, villages) and trains under cover.

In movement off roads, the route should be carefully laid out by compass bearings and the march directed by means of illuminated compasses.

In night marches where protection against the reconnaissance or attack of hostile airplanes making use of flares must be

provided, special precautionary measures are necessary. The command should march in small units and avoid main routes, taking secondary routes as far as practicable. No assembly of troops should be permitted to take place at railway stations. When a unit is illuminated, it should stop, keep to the side of the road, and remain motionless.

A night advance made with a view to making an *attack* in the course of the following day usually terminates with the hasty construction of entrenchments in the dark. Such an advance should be so timed as to allow an hour or more of darkness for entrenching.

An advance that is to terminate in an *assault* at the *break of day* should be so timed that the troops will not arrive long before the assault is to be made ; otherwise the advantage of surprise will be lost, and the enemy will be allowed to reinforce the threatened point.

955. A night attack may be delivered with a view to carrying important points necessary for the offensive of the following day or to the driving in of outposts. In the pursuit of a defeated force which seeks to cover its withdrawal by weak forces heavily equipped with machine guns, a night advance will often offer a means of avoiding the disproportionate losses incident to a daylight advance, and permit the attacker to close with the retreating force.

The time of night at which the attack should be made depends upon the object sought. If a decisive attack is intended, it will generally yield the best results if made shortly before daybreak with a view to following up immediately the success obtained and exploiting to the maximum the effect of surprise. If the object is merely to gain an entrenched position for further operations, an earlier hour is necessary in order that the position gained may be entrenched under the cover of darkness. Moonlight is especially favorable to a night attack as it greatly facilitates movement without materially increasing the efficiency of fire.

The ground to be traversed should be reconnoitered by daylight, and if practicable, at night. Features that are distinguishable at night should be carefuly noted, and their distances from the enemy, from the starting point of the troops, and from other important places should be made known.

The most favorable time for beginning the reconnaissance is shortly before dusk so that both the day and night aspects of the terrain may be studied.

The approaches should be staked out as far as practicable or outlined by luminous tape.

Orders must be formulated with great care and clearness. Each unit must be given a definite objective and direction, and care must be exercised to avoid collision between units. A distinctive badge (*e. g.*, white armband) should be worn. The conduct to be observed by each unit on carrying its objective should be prescribed.

Preparations must be made with secrecy, with a view to effecting as complete a surprise as possible. All possible precautions are taken ; arms and equipment are secured so as to make no noise ; silence is strictly enforced ; the use of whistles is prohibited ; orders are transmitted by agents in a low tone. Bayonets are fixed but pieces are not as a rule loaded.

Units are usually formed for attack in small columns (sections or squads). In each platoon, these columns are usually formed in depth, each being assigned the same objective and following the same route. They should follow one another at such distance (about 50 yards) that no two will be caught in the same ambush. The leading unit of each column acts as a covering detachment ; it is usually preceded by two or three scouts. The advance will usually be effected by short bounds ; at each halt, scouts reconnoiter for the next advance. Halts should be of the shortest possible duration ; rapidity is an essential element of the success of a night attack. As soon as a hostile post is discovered, it is rushed with fixed bayonets. If the advanced element falls into an ambush, the rearward columns move out toward the flank and endeavor to pass it. If this is impracticable, they rush the hostile resistance without hesitation ; delay after the attack is discovered is fatal.

In all cases, the attack is carried out with the bayonet without firing.

After each attack, the unit engaged is re-formed before initiating a further advance.

Immediately after the capture of the objective, the position must be rapidly organized with a view to checking counter-attacks.

In position warfare, the intensified organization of obstacles and machine-gun defense usually limits night attacks to raids by small units.

956. The principal means of defense against night attack are :

(*a*) The fire of fixed weapons and grenades.
(*b*) Obstacles.
(*c*) Illumination of the foreground.
(*d*) Counter-attack.
(*e*) Patrols and outguards.

These defensive elements are so combined as to take the attacking forces by surprise. Ambushes are created by constructing obstacles along the most probable lines of hostile advance (roads, paths, etc.), and these are swept by the fires of fixed weapons sited to a flank or to the rear. The obstacles should be so concealed that the enemy will not discover them before falling into them. While the attacker is held up in front of the obstacle, the fixed weapons open a heavy fire with a view to checking his advance and giving the alarm to troops in rear. The latter at once advance to counter-attack with the bayonet in such manner, if practicable, as to take the attacking troops in flank. Supports and reserves should be posted with this object in view or with a view to recapturing the position if lost. The distance of supports and reserves should be greatly reduced. Supports fix bayonet but do not load. Outguards provide for the security of the command; when practicable, they prepare ambushes in advanced positions with a view to breaking up an attack before it reaches the defensive position or to capturing hostile patrols.

In the use of artificial illumination, care must be taken that the location of the defensive position is not revealed.

Especial vigilance must be maintained shortly before daybreak and on moonlight nights.

Preparations to resist night attacks should be made by daylight whenever such attacks are to be feared.

Reserve units must be able to form rapidly at designated assembly positions and proceed therefrom along previously reconnoitered routes to any part of the front where they may have to intervene.

957. Offensive and defensive night operations should be practiced frequently in order that troops may learn to cover ground in the dark and arrive at a destination quietly and in good order, and in order to train officers in the necessary preparation and reconnaissance.

Troops should be trained in the necessary details (night movements, night patrolling, night marching, and communication at night, see paragraphs 159, 926-938).

958. Only well trained, thoroughly disciplined troops should be employed in a night attack.

2. COMBAT IN WOODS

959. Combat in woods partakes in a lesser degree of many of the characteristics of night combat. These are : decrease in the effectiveness of fire ; increase in the importance of close

combat and surprise; difficulty in the maintenance of direction, communication, and cohesion of the troops; effectiveness of ambushes; ineffectiveness of aerial observation.

Woods lend themselves to gas concentrations.

They are especially favorable to delaying actions by relatively small forces. They keep the attacker in ignorance of the strength of the forces confronting him.

960. The attack of a woods comprises three general phases:

(*a*) The advance over open ground to the edge of the woods;

(*b*) The advance through the woods;

(*c*) Egress from the woods.

961. The main general feature of the situation during the advance over open ground to the edge of the woods lies in the fact that the defender sees all the movements of the advancing troops while his own position is concealed. When wind and atmospheric conditions are favorable, this advantage may be neutralized by the use of smoke screens; or the approach to the edge of the woods may be effected at night.

962. The edge of the woods should be carried like any other position and employed as a departure position from which the advance through the woods is organized and launched. If the attacker attempts to advance uninterruptedly through the woods without reorganizing at the edge of the woods, great inequality in the advance of different parts of the line will unavoidably result, and the more advanced elements will be exposed to being taken in flank by the prepared ambushes of the defense.

963. In general, the advance through the woods should be methodically organized with a view to maintaining cohesion between the attacking units. The movement should be effected in a series of bounds, with halts to restore contact and cohesion either on certain predetermined lines or at prescribed periods. Paths or roads perpendicular to the line of advance are especially useful for this purpose.

Direction must be carefully maintained by means of compass bearings.

Especial measures for maintaining contact with units advancing on the flank outside the woods must be taken (strong combat patrols with machine guns).

964. The formation to be adopted depends upon the density of the woods. In sparse woods, formations resembling those employed on open ground (close line of skirmishers) are generally most suitable for the leading elements. In dense woods, the conditions more closely resemble those of night

operations, and similar formations will be most effective (section or squad columns disposed in depth and preceded by scouts). Supports should closely follow the assaulting units. Connecting files maintain contact between adjacent columns and between rearward and leading units.

965. Absolute silence must be maintained throughout the advance. Sound signals must as a rule be prohibited. When necessary, the line is marked for airplanes by Bengal flares. Rocket signals are used to indicate arrival on important terrain lines.

966. The rate of the advance depends largely upon necessity for reconnaissance and other security measures, and is necessarily slower than on open ground.

Scouts reconnoiter to the front and flanks of the advancing columns, remaining within sight of their units. As soon as the scouts have indicated that all is clear, the platoon or section advances, and the scouts move forward for further reconnaissance. If the scouts discover a hostile post, the leading columns rapidly form skirmish line facing it, and the post is rushed without hesitation. Rearward columns move to one side of the line of advance with a view to taking the hostile resistance in flank or checking a counter-attack against the flanks of the leading columns.

967. Especial care must be taken when scouts discover an obstacle across the line of advance. Reconnaissance toward the front and flanks must be carried out with a view to the discovery of any hostile post located with a view to sweeping the obstacle with frontal or flanking fire.

968. Especial provision for the protection of its flanks must be made by any unit which advances so far beyond adjacent units that its flanks are unsupported. Reconnaissance must be pushed sufficiently toward the flanks to insure that the advancing columns will not be taken under flanking fire.

969. Special precautions must be taken before debouching in clearings or on wide roads.

When advancing along a road or path, the leading columns should halt at all turns until the reconnaissance of scouts has progressed sufficiently to insure the safety of the column.

970. Before debouching from the far edge of the woods, the columns should halt and re-form far enough within the interior of the woods to be beyond the enemy's view. The position to be occupied after debouching should be reconnoitered. Machine guns and accompanying weapons should be brought up and posted so as to cover the egress. If the situation is such that heavy fire from hostile artillery registered on

the edge of the woods may be expected as soon as the units commence to debouch, the movement should be carried out in a single rush and by surprise. When greater danger is to be apprehended from close combat weapons than from artillery, the egress may be effected by infiltration; automatic riflemen rapidly build up a thin line on the new position, and under the cover of their fire, the rest of the unit forms up on the new position.

971. The methods of defense in woods are similar to those in night defense.

The defense aims to take the attacking units under flanking fire and by surprise. It therefore makes extensive employment of prepared ambushes. By the establishment of carefully concealed strong points and obstacles at intervals along the front in the interior of the woods, it endeavors to break up the continuity of the attacking line. Ambushes, echeloned to the rear of the strong points, are so established as to take under flanking fire hostile elements penetrating through the intervals between the strong points. Obstacles are constructed in rear of the intervals in such manner as to hold the penetrating elements under the fire of the troops in ambush. Supports and reserves are so posted as to take in flank by counter-attack hostile elements held up in front of the strong points or penetrating through the intervals. Roads and paths are swept by the fire of machine guns and automatic rifles.

972. The advanced line of strong points should be established at a short distance from the edge of the woods. Tiers of fire may be created and the field of fire extended by posting sharpshooters and machine guns in trees. Arrangements for flanking the edge of the woods should be made. The defense of clearings is similarly organized.

973. Sound signals are employed by the defense to give warning of the enemy's approach.

974. Woods are especially favorable to covering a withdrawal as they force the pursuer to a deliberate advance. A weak rear guard can delay the advance of large hostile forces until the main body has withdrawn beyond reach of pursuit. By its movement in withdrawal, a skillfully handled rear guard can often attract the enemy in a direction favorable to counter-attack.

975. Troops must be carefully trained in the maintenance of direction in woods. Exercises in which widely separated units are assigned a common rendezvous at the far edge of the woods should be held for training in keeping direction by compass bearings.

3. WITHDRAWAL

976. When it is no longer possible to give the action a favorable turn and the necessity for withdrawal arises, every effort must be made to place distance and a rear guard between the enemy and the defeated troops.

977. A withdrawal by daylight involves such heavy losses and so great a degree of disorganization that it is as a rule preferable to hold out at all cost until nightfall and effect the withdrawal under the cover of night. Rearward echelons only can as a rule be withdrawn by day.

Any order for withdrawal from an uncertain source must be disregarded. Orders for withdrawal are especially suspicious when passed along a line of skirmishers.

978. The steps involved in withdrawal are in general :

(*a*) Selection of a covering position for supports and reserves.

(*b*) Selection of an assembly position where the several units will assemble when withdrawn and form in column of route ; or of a defensive line on which resistance will be renewed.

(*c*) Withdrawal of transportation and evacuation of such stores as can be removed and destruction of unremovable supplies.

(*d*) Withdrawal of rearward echelons (supports and reserves) to the covering position.

(*e*) Withdrawal of the combat echelon.

979. When the withdrawal takes place by day, troops in the first line are withdrawn by successive echelons and placed in reserve as soon as the supports and reserves have occupied the covering position. The fire of the echelons remaining in position, the overhead fire of machine guns and artillery, and the use of smoke screens are the most effective means of covering the movement of the withdrawing troops.

980. When withdrawal is effected at night, supports, reserves and the greater part of the combat echelon are successively withdrawn to the covering or the assembly position. The front lines are held by weak elements, which by simulating great activity (heavy firing from different positions, reconnaissances of strong combat patrols, numerous flares and rockets), endeavor to create the impression of heavily held lines. These advanced elements are withdrawn toward daybreak, leaving the position vacant.

The movement in withdrawal takes place in small columns (sections or platoons) which pass the covering position and move toward the designated rendezvous. Platoon and company organization should be restored during the movement

so that battalions will be well in hand on reaching the assembly position.

981. The covering position should be far enough to the rear to prevent the troops occupying it from being influenced by the withdrawal but sufficiently near to exert an influence on the action as soon as the withdrawal begins (1000-3000 yards). It should give the covering troops a good field of fire at mid and long ranges and should facilitate their own safe and timely withdrawal. The selection of other successive covering positions in rear of the first may become necessary.

982. The route to be followed by each unit in reaching the assembly position should be prescribed. Guides should be furnished when necessary.

983. Routes must be cleared by the timely movement of all transportation.

984. The strength of the troops on the covering position should be as small as possible. They should be plentifully supplied with machine guns and infantry guns (artillery pieces). These remain in position until the last moment if necessary; the infantry guns fire over open sights against the advancing enemy.

985. The assembly position should be far enough to the rear to enable the advanced lines to free themselves completely from contact with the enemy and insure sufficient time for undisturbed reorganization. When practicable, this position should be protected by natural obstacles, such as woods, watercourses, etc. The position should be selected with regard to the routes leading to the rear.

986. In small units, a limited withdrawal may sometimes be effectively employed as a means of drawing a pursuing enemy in a direction such that he will come under heavy flanking fire or expose himself to being counter-attacked from the flank.

4. MINOR WARFARE

987. Minor warfare embraces both regular and irregular operations.

Regular operations consist of minor actions involving small bodies of trained and organized troops on both sides.

The tactics employed are in general those prescribed for the smaller units.

988. Irregular operations consist of actions against unorganized or partially organized forces, acting in independent or semi-independent bodies. Such bodies have little or only

crude training and are under nominal and loose leadership and control. They assemble, roam about, and disperse at will. They endeavor to win by stealth or by force of superior numbers, employing ambuscades, sudden dashes or rushes, and hand-to-hand fighting.

Troops operating against such an enemy usually do so in small units, such as platoons, detachments, or companies, and the tactics employed must be adapted to meet the requirements of the situation. Frequently the enemy's own methods may be employed to advantage.

In general, such operations should not be undertaken hastily; every preparation should be made to strike suddenly and to inflict the maximum punishment.

989. In general, the service of information will be insufficient; adequate reconnaissance will rarely be practicable. March and bivouac formations must be such as to admit of rapid deployment and fire action in any direction.

990. In open country, where surprise is not probable troops may be marched in column of squads preceded, within sight, by a squad as an advance party.

991. In close country, where surprise is possible, the troops must be held in a close formation. The use of flank patrols becomes difficult. Occasionally, an advance party, never less than a squad, may be sent out. In general, however, such a party accomplishes little, since an enemy intent on surprise will permit it to pass unmolested and will fall upon the main body.

Under such conditions, especially when the road or trail is narrow, column of twos or files is a convenient formation; the officers place themselves in the column so as to divide it into nearly equal parts. If rushed from a flank, such a column will be in readiness to face and fire toward either flank or it may form toward both flanks with the ranks back to back; if rushed from the front, the head of the column may deploy, the rest of the column closing up to support it and to protect its flanks and rear.

992. The column may often be broken into two or more approximately equal detachments, separated on the march by distances of 50 to 100 yards. As a rule, the detachments should not consist of less than 25 men each. With this disposition, it will rarely be possible for an enemy to close simultaneously with all of the detachments as one or more will be left unengaged and available to support those engaged or to inflict severe punishment upon the enemy when he is repulsed.

993. The site for camp or bivouac should be selected with

special reference to economical and effective protection against surprise. Double sentinels are posted on the avenues of approach, and the troops sleep in readiness for instant action. As far as practicable, troops should be instructed in advance as to what they are to do in case of attack at night.

994. Night operations are frequently advisable. With the small forces employed, control is not difficult. Irregular troops rarely provide proper camp protection, and they may frequently be surprised and severely punished by a properly conducted night march and attack.

CHAPTER XI. — CEREMONIES AND INSPECTIONS

1. CEREMONIES

General Rules

995. The order in which the troops of the various arms are arranged for ceremonies is prescribed by Army Regulations.

When forming for ceremonies, the companies of the battalion and the battalions of the regiment are posted from right to left in line and from head to rear in column, in the order of rank of their respective commanders, the senior on the right or at the head, unless otherwise directed by the proper commanding officer.

The commander faces the command; subordinate commanders face to the front.

996. At the command present arms, given by the commanding officer of the troops, his staff salutes; the major's staff salutes at the major's command; other staffs salute with their commanders; the lieutenant-colonel salutes with colonel's staff.

997. At the assembly for a ceremony, companies are formed on their own parades and informally inspected.

At adjutant's call, except for ceremonies involving a single battalion, each battalion is formed on its own parade, reports are received, and the battalion presented to the major. At the second sounding of adjutant's call, the regiment is formed.

998. Formations for ceremonies may be modified to suit the ground.

999. The formations of the machine-gun and supply companies (when formed with guns, carts, and transportation) are as follows (Plates V, VI, and VII):

Regiment	*Machine-Gun Company*	*Supply Company*
Line of masses.... Column of masses.	Line	Formed in depth of 3 wagons.
Column of battalion close lines..	Close line.....	Formed on frontage of 6 wagons.
Line of battalion columns	Close column	Formed in depth of 6 wagons.
Line of battalions in column of company close lines	Column of squads.	Formed on frontage of 3 wagons.

The formation of one-pounder and light-mortar units with guns and ammunition carts is similar to that shown for a ma-

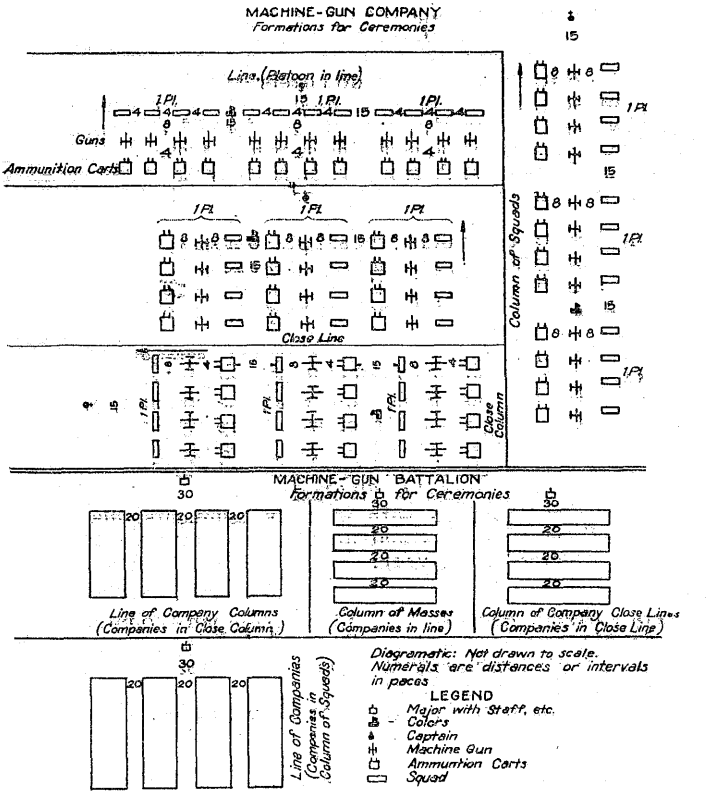


PLATE VI

chine-gun platoon (Plate VI). In ceremonies involving more than one regiment, they are attached to the machine-gun company and formed as an additional platoon or platoons; the

remainder of the headquarters company (less band, noncommissioned staff and mounted men) is attached to a rifle battalion and formed as an additional company or distributed by platoons to rifle companies as required by the nature of the formation (Plate VII).

When formed without guns, carts, and transportation in regimental ceremonies, the headquarters company (less band, noncommissioned staff, and mounted men), the machine-gun company, and the supply company are formed as prescribed for rifle companies in the positions shown in Plate V ; in ceremonies involving more than one regiment they are commanded as a provisional battalion and formed as prescribed for a rifle battalion.

For regimental ceremonies, the supply company, when formed with transportation, is, as nearly as practicable, divided into units of a frontage and depth of 3 wagons. The units are formed with wagons at intervals of 15 paces, and distances of 5 paces.

1000. In commands in which the average strength of companies is less than 9 squads, each unit will adopt the formations prescribed for the next lower unit, *i. e.*, the company will be formed as a platoon, the battalion as a company, etc.

For ceremonies, members of company headquarters detachments are posted in the line of file closers, or formed as an extra squad of a platoon, or used to fill blank files.

1001. When reviewed with infantry regiments, machine-gun battalions with guns and ammunition carts are formed as follows (Plates VI and VII) :

Regiment	*Machine-Gun Battalion*
Line of battalion columns	Line of company columns.
Column of masses	Column of masses.
Column of battalion close lines	Column of company close lines.
Line of battalions in column of company close lines.....	Line of companies.

Reviews

General Rules

1002. The adjutant posts men or otherwise marks the line of march of the column in such manner that its flank in passing will be about 20 paces from the reviewing officer.

The post of the reviewing officer is indicated by a marker.

Officers of the same grade as the reviewing officer or of higher

grade, and distinguished personages invited to accompany him place themselves on his left or as otherwise indicated; their staffs and orderlies place themselves respectively on the corresponding side of the staff and the orderlies of the reviewing officer; all others who accompany the reviewing officer place themselves on the left of his staff or as otherwise indicated, their orderlies in rear. A staff officer is designated to escort distinguished personages and to indicate to them their proper positions.

1003. While riding around the troops, the reviewing officer may direct that his staff, flag, and orderlies remain at the post of the reviewing officer, or that only his personal staff and flag accompany him; in either case, the commanding officer alone accompanies the reviewing officer. While passing around the troops, the commanding officer rides on the flank of the reviewing officer away from the command. If the reviewing officer is accompanied by his entire staff, the staff officers of the commander place themselves on the side of the staff of the reviewing officer corresponding to the position of the commander.

The reviewing officer and others at the reviewing stand salute the color as it passes; when passing around the troops, the reviewing officer and those accompanying him salute the color when passing in front of it.

The reviewing officer returns the salute of the commanding officer of the troops only. Those who accompany the reviewing officer do not salute.

1004. In passing in review, each staff salutes with its commander.

1005. After saluting the reviewing officer in passing in review, the commanding officer of the troops turns out of the column and takes post on the side of the reviewing officer toward the direction of march of the command; the members of his staff accompanying him take post on the corresponding side of the reviewing officer's staff. When the rear element of his command has passed, the commanding officer of the troops, without changing his position, salutes the reviewing officer; he and the members of his staff accompanying him then rejoin the command. The commanding officer of the troops and the members of his staff are the only ones who turn out of the column and take post at the side of the reviewing officer.

1006. If the person reviewing the command is not mounted, the commanding officer and his staff, on turning out of the column after passing the reviewing officer, dismount preparatory to taking post. In such case, the salute of the commanding

officer, prior to rejoining his command, is made with the hand before remounting.

1007. When the rank of the reviewing officer entitles him to the honor, each regimental color salutes at the command present arms, given or repeated by the major of the battalion with which it is posted ; and again in passing in review.

1008. The band of an organization plays while the reviewing officer is passing in front, and in rear, of the organization.

During the march in review, each band turns out of the column, takes post as hereinafter prescribed or as otherwise directed, continues to play until its regiment has passed, then ceases playing and follows in rear of its regiment ; the band of the following regiment commences to play as soon as the preceding band has ceased.

While marching in review, but one band in each brigade plays at a time, and but one band at a time when within 100 paces of the reviewing officer.

In large commands, bands may be massed and posted as directed by the commanding officer.

1009. If the rank of the reviewing officer entitles him to the honor, the band plays the prescribed national air or the field music sounds to the color, march, flourishes, or ruffles when arms are presented. When passing in review, at the moment the regimental color salutes, the musicians posted with the band sound to the color, march, flourishes, or ruffles.

1010. The present arms and the ride around the line by the reviewing officer may be dispensed with.

1011. Troops march in review with the guide toward the flank on which the reviewing officer is posted.

1012. Troops pass in review in quick time only.

1013. In reviews of regiments or larger commands, each battalion and special unit after the rear has passed the reviewing officer 50 paces, takes the double time for 100 yards in order not to interfere with the march of the column in rear ; if necessary, it then turns out of the column and returns to quarters by the most practicable route.

When review is to be followed by muster or inspection, units reform in their original places or as otherwise directed, after passing in review.

1014. In a brigade or larger review, a regimental commander may cause his regiment to stand at ease, rest, or stack arms, and fall out and resume attention, so as not to interfere with the ceremony.

1015. When an organization is to be reviewed before an inspector junior in rank to the commanding officer, the com-

manding officer receives the review and is accompanied by the inspector, who takes post on his left.

1016. The march in review may commence from either flank of the command. When the march is to commence with the left flank, the command should be formed from left to right. The march in review is described in these regulations as commencing with the right flank; appropriate changes in commands and movements are made when the movement is to commence with the left flank.

Battalion Review

1017. The battalion having been formed in line or in line of close columns, the major faces to the front ; the reviewing officer moves a few paces toward the major and halts ; the major turns about and commands : 1. Present, 2. ARMS, and again turns about and salutes.

The reviewing officer returns the salute ; the major turns about, brings the battalion to order arms, and again turns to the front.

The reviewing officer approaches to about 6 paces from the major, the latter salutes, takes post on his right, and accompanies him around the battalion. The band plays. The reviewing officer proceeds to the right of the band, passes in front of the captains to the left of the line and returns to the right, passing in rear of the file closers and the band.

On arriving again at the right of the line, the major salutes and halts, and the reviewing officer with his staff proceeds to his post in front of the center of the battalion. When the reviewing officer and his staff have passed him, the major moves directly to his post in front of the battalion, faces it, and commands : 1. Pass in review, 2. MARCH.

At the first command, the band changes direction, if necessary, and halts.

The second command is given when the band has changed direction.

Being in line : At the major's first command, each captain commands : Squads right. At the major's second command, the band and the battalion move off, the band playing ; without command from the major, the column changes direction at the points indicated, and column of platoons at full distance is formed successively to the left at the second change of direction. Captains take post eight paces in front of their leading platoons after the second change of direction.

Being in line of close columns: At the major's first command, the captain of the right company commands : Squads right.

At the major's second command, the band and the right company move off, the band playing ; without command from the major, the band changes direction at the points indicated, and the company forms close column at the first change of direction and close line at the second change. The other companies successively execute squads right in time to follow the preceding company at 30 paces, form close column to the left, and pass in review in close line.

The major takes his post 15 paces in front of the band immediately after the second change of direction : the band, having passed the reviewing officer, turns to the left out of the column, takes post in front of and facing the reviewing officer, and remains there until the review terminates.

The major and staff salute when the major is 6 paces from the reviewing officer and terminate the salute when the major has passed 6 paces beyond him (see pars. 1060 and 1083).

If passing in review in column of platoons, each captain and the second in command execute and terminate the salute in the same manner and when in the same relative positions with respect to the reviewing officer as prescribed for the major and his staff. Each platoon leader, without facing about, commands : 1. Eyes, in time to add, 2. RIGHT, when at 6 paces from the reviewing officer, and commands FRONT when at 6 paces beyond him.

If passing in review in close line, all units of the company execute eyes right and front at the command of the captain ; each captain commands : 1. Eyes, in time to add, 2. RIGHT, when at 6 paces from the reviewing officer, and FRONT, when 20 paces beyond him (pars. 1059 and 1083).

Non-commissioned staff officers and the drum major execute and terminate the salute at the points prescribed for the major. Guides charged with the step, trace, and direction, do not execute eyes right.

If the reviewing officer is entitled to a salute from the colors, the regimental color salutes when at 6 paces from him and is raised when at 6 paces beyond him.

The major, having saluted, takes post on the right of the reviewing officer and remains there until the rear of the battalion has passed, then salutes, and rejoins his battalion.

The review terminates when the rear unit has passed the reviewing officer ; the band then ceases to play, and unless otherwise directed by the major, returns to the position it occupied before marching in review, or is dismissed ; the major rejoins the battalion. The battalion then executes such move-

ments as the reviewing officer may have directed, or is marched to its parade ground and dismissed.

1018. At battalion review, the major and his staff may be dismounted in the discretion of the commanding officer.

Regimental Review

1019. The regiment is formed in line of masses.

The review proceeds as in the battalion, substituting "colonel" for "major" and "regiment" for "battalion."

At the colonel's command: Present arms, the major of the center battalion commands: 1. Present. 2. ARMS. The other majors successively from the center bring their battalions to present arms. Order arms is similarly executed.

To march the regiment in review the colonel commands, orders or signals: Pass in review. The major of the right battalion then commands: 1. Column of close lines, first company squads right, 2. MARCH. Other majors successively move their battalions by similar commands in time to follow the preceding battalion at sixty paces. The band and companies change direction without command from the majors and pass in review as prescribed for battalion review.

At the second change of direction each major takes post 15 paces in front of his leading company.

The headquarters company (less band, noncommissioned staff, mounted men, and one-pounder and light-mortar platoons) moves to the front in close column, marches to the right in close line on the ground originally occupied by the right company, forms close column to the left, and passes in review in close line in rear of the battalions as prescribed for a rifle company. The one-pounder and light-mortar platoons and the platoons of the machine-gun company (with guns and carts) move successively to the front in line and march to the right in column of squads in time to follow the preceding unit at 30 paces, form line to the left, and pass in review in column of squads (Plate VI) with guns and carts on the left. The captain of the machine-gun company takes post 15 paces in front of his leading platoon after the last change of direction before passing in review. The units of the supply company (with transportation — see par. 999) move successively to the front in time to march by the flank and follow the preceding unit at 40 paces; at the several changes of direction, they march by the flank as prescribed for other units of the regiment. The captain of the supply company takes post 15 paces in front of his company after the last change of direction before

passing in review. The captains of the machine-gun and supply companies salute as prescribed for the major of a rifle battalion.

The commands, eyes right and front, are given by one-pounder, light-mortar and machine-gun platoon leaders as prescribed for the captain of a rifle company.

The rear of the column having passed the reviewing officer, the battalions and special units, unless otherwise directed, are marched to their parades and dismissed.

1020. The review of a small body of troops, composed of different arms, is conducted on the principles laid down for the regiment. The troops of each arm are formed and marched so as to conform as nearly as practicable to the movement of the infantry.

Reviews of Large Commands

1021. The principles of regimental review are observed as far as applicable.

1022. A command, consisting of one regiment or less and detachments of other arms, is formed for review as ordered by the commanding officer.

1023. In the review of a brigade or larger command, regiments are formed in line of battalion columns, column of masses, column of battalion close lines, or line of battalions in column of company close lines (Plate V). The particular formation to be chosen depends chiefly upon the method adopted for passing the command in review. Transportation is usually massed and posted in rear or on a flank of the command.

The basic units of movement are the rifle battalion, the machine-gun company, and the field artillery battery.

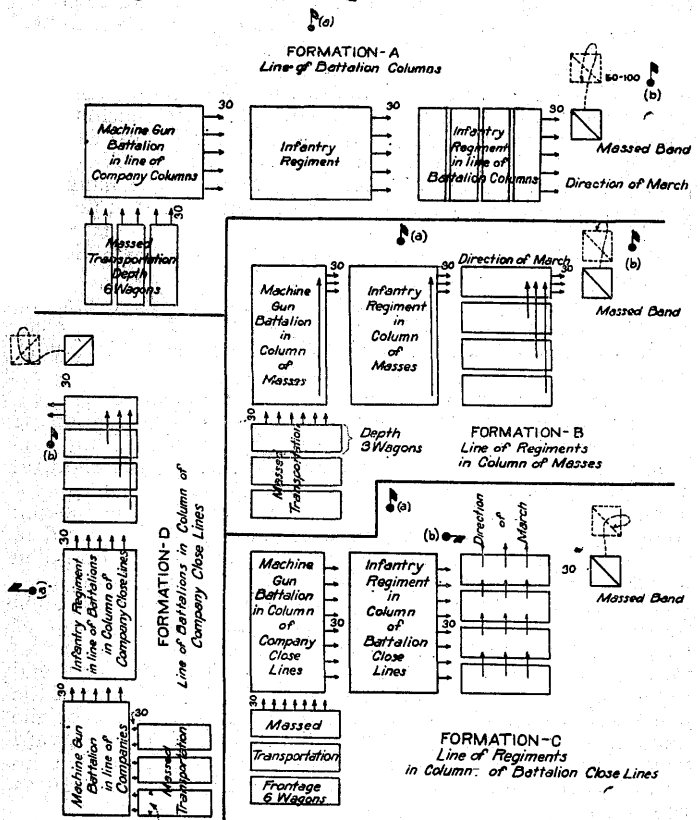
1024. The reviewing officer takes post opposite the center of the command. The commanding officer of the troops commands : Present arms. Battalions and other units are presented and brought to the order successively from the center as prescribed for regimental review. Only the commanding officer of the troops and battalion commanders give the command present arms. Brigade and regimental commanders and their staffs salute as soon as their last battalions have been presented.

1025. One of the following formations for review of brigades and larger commands will be adopted whenever practicable :

Formation A : Line of battalion columns (see Plate V, paragraphs 999 and 1001, and Plate VII).

The reviewing officer receives the present at (*a*) (Plate VII).

After passing around the command, he takes post at (*b*). The commanding officer of the troops commands : **Pass in review.**



The band moves forward playing, countermarches, and takes post 50-100 paces to the right of the reviewing officer. The major of the right battalion commands : 1. **Squads right,**

2. MARCH, and moves his battalion directly by the flank in close line with guide left. The other battalions and the machine-gun company of the right regiment move successively by the flank in time to follow the preceding battalion in close line at 30 paces. The right battalion of each succeeding regiment and the right company of the machine-gun battalion move by the flank in time to follow the preceding unit in close line at 60 paces. The other rifle battalions and machine-gun companies move successively by the flank and follow the preceding unit in close line at a distance of 30 paces. The transportation moves forward in time to march by the flank and follow the rear of the column as soon as the ground in its front has been cleared.

Eyes left is executed at the command of rifle battalion and machine-gun company commanders.

This formation and procedure in passing in review may be adopted when there is sufficient space on the flank of the command to permit the leading units to clear the field without blocking the march of those in rear.

Formation B : Line of regiments in column of masses.

Posts of the reviewing officer and band as in Formation *A*. At the command : Pass in review, the major of the leading battalion of the right regiment commands : 1. Squads right, 2. MARCH, and moves his battalion directly by the flank in column of close lines. The other battalions and the machine-gun company of the right regiment move successively forward in time to march by the flank and follow the preceding battalion at 30 paces. The leading battalion of each succeeding regiment and the leading company of the machine-gun battalion move by the flank in time to follow the preceding unit at 60 paces. Other rifle battalions and machine-gun companies move successively forward in time to march by the flank and follow the preceding unit at 30 paces. The leading unit of the massed transportation moves forward in time to march by the flank and follow the preceding unit at 60 paces. Rearward transportation units move successively forward in time to move by the flank and follow the preceding unit as soon as the latter has cleared its front.

Eyes left is executed at the command of captains of rifle companies and leaders of one pounder, light-mortar, and machine-gun platoons.

This formation and procedure in passing in review may be employed when troops are to march by the flank in review and there is not sufficient space for the use of Formation *A* ; it may also be employed when the march past is to take place

without change of post of the reviewing officer, the leading battalion of the right regiment moving straight to the front and then by the flank so as to pass the reviewing post in column of close lines, other battalions, machine-gun companies, and transportation units following the leading battalion as already described.

Formation C : line of regiments in column of battalion close lines.

The reviewing officer receives the present at (*a*) (Plate VII). After passing around the command, he takes post at (*b*). The commanding officer of the troops commands : **Pass in review.** The major of the leading battalion of the right regiment commands : 1. **Forward,** 2. **MARCH.** 3. **Guide left,** and marches his battalion in review in close line. The band moves out playing with the leading battalion, changes direction to the right when opposite the reviewing officer, countermarches, and takes post facing him. Other battalions and the machine-gun company of the right regiment move successively forward in time to follow the preceding battalion at 30 paces and pass in review in close line. The leading battalions of other regiments and the leading company of the machine-gun battalion move by the flank in time to march to the front and follow the preceding unit in the same formation as soon as the latter has cleared the front of the formation. Other rifle battalions and machine-gun companies move successively by the flank in time to march to the front and follow the preceding unit at 30 paces, and pass in review in close line. The massed transportation moves forward as soon as its front has been cleared, marches by the flank when its leading elements have reached the original front of the formation so as to follow the rear of the column, and again moves by the flank so as to pass in review on the same ground as the rifle battalions and machine-gun companies.

Eyes left is executed at the command of rifle-battalion and machine-gun company commanders.

This formation may be employed when there is more suitable ground for passing the command in review to the front of the formation than toward the flank.

Formation D : line of battalions in column of company close lines.

Posts of reviewing officer and band as in Formation *C*.

The right battalion moves to the front and passes in review in column of close lines. Other battalions and the machine-gun company of the right regiment move successively by the flank and to the front in time to follow the preceding battalion at a

distance of 30 paces. The right battalions of other regiments and the right company of the machine-gun battalion move by the flank and to the front in time to follow the preceding unit at 60 paces. The other rifle battalions and machine-gun companies move successively by the flank and to the front in time to follow the preceding unit at 30 paces. The right unit of the massed transportation moves forward as soon as the preceding unit has cleared its front, marches by the flank so as to follow the rear of the column and again moves by the flank so as to pass in review on the same ground as the rifle battalions and machine-gun companies. The other transportation units move successively forward as soon as the tail of the unit on their right has cleared the front on which the transportation was originally formed, march by the flank, and pass in review as prescribed for the right unit.

Eyes left is executed at the command of rifle-company and one-pounder, light-mortar and machine-gun platoon commanders.

This formation may be employed when there is not sufficient space for passing the command in review on a battalion front as in Formation *C*.

Formations *C* and *D* are especially adapted to the massing of a large command in a very restricted area.

The command may be passed in review by the left flank (Formations *A* and *B*) or to the front of the left unit (Formations *C* and *D*) when required by the condition of the ground.

The above formations are described for reference only when required.

Parades

General Rules

1026. If dismounted, the officer receiving the parade and his staff stand at parade rest, with arms folded, while the band is sounding off ; they resume attention with the adjutant. If mounted, they remain at attention.

1027. At the command **report**, given by a battalion adjutant, the captains in succession from the right salute and report: **A (or other) company, present or accounted for ; or, A (or other company, (so many) officers or men absent.**

Battalion Parade

1028. At **adjutant's call**, the battalion is formed in line or line of close columns but is not presented. The major takes

post at a convenient distance in front of the center and facing the battalion.

The adjutant, from his post in front of the center of the battalion, commands : 1. **Parade**, 2. **REST** ; the battalion executes **parade rest.** The adjutant directs the band : **SOUND OFF.**

The band, playing in quick time, passes in front of the line of captains to the left of the line and back to its post on the right, when it ceases playing. At evening parade, when the band ceases playing, retreat is sounded by the field music, and following the last note and while the flag is being lowered, the band plays the **Star Spangled Banner.**

Just before the last note of retreat, the adjutant comes to attention, and as the last note ends, commands : 1. **Battalion**, 2. **ATTENTION**, 3. **Present**, 4. **ARMS**, and salutes, retaining that position until the last note of the National Anthem. He then turns about, salutes, and reports : **Sir, the parade is formed.** The major directs the adjutant : **Take your post, Sir.** The adjutant moves at a trot (if dismounted, in quick time), passes by the major's right, and takes his post.

The major commands : 1. **Order**, 2. **ARMS**, and adds such exercises in the manual of arms as he may desire. Officers, noncommissioned officers commanding platoons or armed with the with the saber, and the color guard, having once executed order arms, remain in that position during the exercises in the manual.

The major then directs the adjutant : **Receive the reports, Sir.** The adjutant, passing by the major's right, advances at a trot (if dismounted, in quick time) toward the center of the line, halts midway between it and the major, and commands : **REPORT.**

The reports received, the adjutant turns about, and reports : **Sir, all are present or accounted for** ; or **Sir, (so many) officers or men are absent,** including in the list of absentees those from the band and field music reported to him by the drum major prior to the parade.

The major directs : **Publish the orders, Sir.**

The adjutant turns about and commands : **Attention to orders** ; he then reads the orders, and commands : 1. **Officers**, 2. **CENTER**, 3. **MARCH.**

At the command **center**, captains face to the center. At the command **march**, they close to the center and face to the front ; the adjutant turns about and takes his post.

The captains, having closed and faced to the front, the senior commands : 1. **Forward**, 2. **MARCH.** The captains advance,

the band playing ; the senior captain is the guide, and marches on the major ; the captains are halted at 6 paces from the major by the senior who commands : 1. Officers, 2. HALT. They halt and salute. The major then gives such instructions as he deems necessary, and commands :

1. Officers, 2. POSTS, 3. MARCH.

At the command posts, captains face about.

At the command march, they step off with guide as before, and the senior commands : 1. Officers, 2. HALT, so as to halt 8 paces from the line ; he then adds : 1. Posts, 2. MARCH.

At the command posts, captains face outward, and at the command march, step off in succession at 4 paces distance, and resume their posts.

The music ceases when the captains have resumed their posts.

The major then commands : 1. Pass in review, 2. MARCH.

The battalion marches according to the commands and principles of review ; when the last company has passed, the ceremony is concluded.

The band continues to play while the companies are in march upon the parade ground. After passing in review, companies are marched to their respective parades by their captains.

When the captains have saluted the major, he may direct them to form line with staff, in which case they move individually to the front, passing to the right and left of the major and staff, halt on the line established by the staff, face about, and stand at attention. The music ceases when the captains join the staff. The major causes the companies to pass in review under the command of the seconds in command by the same commands as before.

Regimental Parade

1029. The regiment is formed in line of masses.

The parade proceeds as for the battalion with the following exceptions :

" Colonel " is substituted for " major ", " regiment " for " battalion " in the description, and " battalions " for " battalion " in the commands.

The battalions execute present arms, order arms, parade rest, and come to attention at the command of execution of their commanders, successively from the center battalion.

Exercises in the manual of arms and reports are omitted.

After publishing the orders, the adjutant commands : 1. Officers, center, 2. MARCH.

Company commanders remain at their posts with their companies.

The field and staff officers form one line, closing on the center. The senior commands : 1. Forward, 2. MARCH. The senior major is the guide and marches on the colonel.

After being dismissed, each major moves individually to the front, turns outward, and followed by his staff, resumes his post by the most direct line.

The colonel gives the necessary commands, orders, or signals for marching the regiment in review. The regiment marches according to principles of review.

Presentation of Decorations

1030. When practicable, a review will be held on occasion of the presentation of the Medal of Honor, the Distinguished Service Cross, the Distinguished Service Medal or the decoration of the colors.

The persons to receive the award assemble in single rank in front of the center of the command on line with the captains; colors to decorated take post 5 paces in front of the center of the line of persons. After the reviewing officer has ridden around the line and resumed his post in front of the center of the command the persons and colors to be decorated are marched line to a point 12 paces from the reviewing officer by the commanding officer of the troops. The colors not to be decorated follow the center of the line of the persons to be decorated. The commanding officer of the troops advances toward the reviewing officer, salutes, and reports : Sir, the persons to be decorated are present. The reviewing officer returns the salute and directs that the command be presented. The band then plays the Star Spangled Banner, or if only field music is present, To the Colors is sounded. On completion of the music, the commanding officer of the troops brings the command to order arms. The persons to be decorated and the colors salute and terminate the salute at the commands present arms and order arms respectively of the commanding officer of the troops.

A designated staff officer then reads the order announcing the awards. After the reading of the order, the reviewing officer, accompanied if necessary by his staff or designated members thereof, advances toward the colors and the line of persons to be decorated and fastens the appropriate streamer to the

staff of the color, and pins the decoration awarded on the left breast of each person. He then directs the commanding officer of the troops to march the command in review and resumes his post. The persons decorated then form line on the left of reviewing officer or as otherwise directed, and the colors return to their post.

Escorts

Escort of the Color

1031. The regiment being in line of masses, the colonel details a company, other than the color company, to receive and escort the national color to its place. During the ceremony, the regimental color remains with the color guard at its post with the regiment.

The band moves straight to its front until clear of the line of field officers, changes direction to the right, and is halted ; the designated company forms column of platoons in rear of the band, the color bearer in the line of file closers of the center platoon.

The escort then marches without music to the colonel's office or quarters and is formed in line facing the entrance, the band on the right.

The color bearer, preceded by the senior first lieutenant and followed by a sergeant of the escort, then goes to obtain the color.

When the color bearer comes out, followed by the lieutenant and sergeant, he halts before the entrance, facing the escort ; the lieutenant places himself on the right, the sergeant on the left of the color bearer ; the escort presents arms, and the field music sounds to the color ; the first lieutenant and the sergeant salute.

Arms are brought to the order ; the lieutenant and the sergeant return to their posts ; the company is formed in column of platoons, the band taking post in front of the column ; the color bearer places himself in the center of the interval in rear of the center platoon ; the escort marches in quick time, with guide left, back to the regiment, the band playing ; the march is so conducted that the escort arrives at 50 paces in front of the right of the regiment, marching parallel to its front ; when the color arrives opposite its place in the formation of the regiment, the escort is formed in line to the left ; the color

bearer, passing between the platoons, advances and halts 12 paces in front of the colonel.

The color bearer having halted, the colonel, who has taken post 30 paces in front of the center of his regiment, faces about, commands : **Present arms,** faces to the front, and salutes ; the field music sounds to the color.

The colonel then faces about and brings the regiment to the order ; the color bearer then takes his post with the color company.

The escort presents arms and comes to the order with the regiment, at the command of the colonel, after which the captain forms it again in column of platoons, and preceded by the band, marches it to its place, passing around the left flank of the regiment.

The band plays until the escort passes the left of the line, when it ceases playing and returns to its post on the right, passing in rear of the regiment.

The regiment may be brought to rest when the escort passes the left of the line.

1032. Escort of the color is executed by a battalion according to the same principles.

Escorts of Honor

1033. Escorts of honor are detailed for the purpose of receiving and escorting personages of high rank, civil or military. The troops detailed for this duty are selected for their soldierly appearance and superior discipline.

The escort forms in line, opposite the place where the personage is to present himself, the band on the flank of the escort toward which it is to march. On the appearance of the personage, the honors due to his rank are rendered. The escort then forms column of platoons or squads and takes up the march, the personage with his staff or retinue taking position in rear of the column ; when he leaves the escort, line is formed, and the same honors are rendered as on his arrival.

When the position of the escort is at a considerable distance from the point where the personage is to be received, as for instance, where a courtyard or wharf intervenes, a double line of sentinels is posted from that point to the escort, facing inward ; the sentinels successively salute as he passes and are then relieved and join the escort.

An officer is designated to attend the personage and bear such communication as he may have to make to the commander of the escort.

Funeral Escort

1034. The composition and strength of the escort are prescribed in Army Regulations.

The escort is formed opposite the quarters of the deceased, the band on the flank of the escort toward which it is to march.

Upon the appearance of the coffin, the commander commands : 1. Present, 2. ARMS, and the band plays an appropriate air ; arms are then brought to the order.

The escort then forms column of platoons or squads ; escorts of the strength of a platoon or less may form line. The procession forms in the following order :

1. Music, 2. Escort, 3. Clergy, 4. Coffin and pallbearers, 5. Mourners, 6. Members of the former command of the deceased, 7. Other officers and soldiers, 8. Distinguished persons, 9. Delegations, 10. Societies, 11. Civilians. Officers and soldiers (Nos. 6 and 7), with side arms, are in the order of rank, seniors in front.

When the procession has been formed, the commander of the escort puts it in march.

The escort marches slowly to solemn music ; when the column arrives opposite the grave, line is formed facing it.

The coffin is then carried along the front of the escort to the grave ; arms are presented, and the music plays an appropriate air ; when the coffin has been placed over the grave, the music ceases, and arms are brought to the order.

The commander next commands : 1. Parade, 2. REST. The escort executes parade rest, officers and men inclining the head.

When the funeral services are completed and the coffin lowered into the grave, the commander causes the escort to resume attention and fire three rounds of blank cartridges, elevating the muzzles of the pieces. When the escort is larger than a company, one company is designated to fire the volleys.

A musician then sounds taps.

The escort is then formed into column, marched in quick time to the point where it was assembled, and dismissed.

The band does not play until it has left the inclosure.

When the distance to the place of interment is considerable, the escort, after leaving the camp or garrison, may march at ease in quick time until it approaches the burial ground, when it is brought to attention. The music does not play while marching at ease.

The field music may alternate with the band in playing.

1035. At the funeral of a person entitled to the honor, the band plays the prescribed national air, or the field music sounds

to the color; march, flourishes, or ruffles, according to the rank of the deceased, when arm are presented; on conclusion of the musical honors, the band plays an appropriate air.

1036. At the funeral of a mounted officer or soldier, his horse, in mourning caparison, follows the hearse.

1037. Should the entrance of the cemetery prevent the hearse from accompanying the escort to the grave, the column is halted at the entrance long enough to take the coffin from the hearse, when it is again put in march.

1038. When necessary to escort the remains from the quarters of the deceased to the church before the funeral service, arms are presented upon receiving the remains at the quarters and also as they are borne into the church.

1039. Prior to the funeral, the commander of the escort gives the clergyman and pallbearers all needful directions.

2. INSPECTIONS

Company Inspection

1040. The company being in column of platoons at full distance, the captain commands: 1. **Prepare for inspection,** 2. **MARCH.**

At the first command, each platoon leader commands: **Open ranks.**

At the command march, the front rank of each platoon executes right dress; the rear rank and the file closers march backward 4 steps, halt, and execute right dress.

Each platoon leader aligns the front rank, rear rank, and file closers of his platoon, takes post 3 paces in front of the right guide, facing to the left, and commands: **Front,** and faces to the front.

The captain then commands: **Rest,** and commencing at the head of the column, makes a minute inspection of the arms, accouterments, dress, and ammunition of the personnel of the several platoons and company headquarters. As he approaches each platoon, its leader faces to the left and commands: 1. **Platoon,** 2. **ATTENTION,** 3. **PREPARE FOR INSPECTION,** and faces to the front; as soon as inspected, he accompanies the captain.

The inspection is from right to left in front, and from left to right in rear, of each rank and of the line of file closers.

Each man, as the captain approaches him, executes **inspection arms.**

The captain takes the piece, grasping it with his right hand just above the rear sight (Model-1903 rifle) or the lower band

(Model-1917 rifle), the man dropping his hands. The captain inspects the piece, and with the hand and piece in the same position as in receiving it, hands it back to the man, who takes it with the left hand at the balance and executes **order arms.**

Men successively execute **inspection arms,** as the inspecting officer returns the piece to the man on their right.

Should the piece be inspected without handling, each man executes **order arms** as soon as the captain passes to the next man.

Enlisted men armed with the pistol execute **inspection pistol** by drawing the pistol from the holster and holding it diagonally across the body, barrel up, and 6 inches in front of the neck, muzzle pointing up, and to the left. The pistol is returned to the holster as soon as the captain passes.

Upon completion of the inspection of each platoon, its leader takes post facing to the left, 3 paces in front of the right guide, and commands : 1. **Close ranks,** 2. **MARCH,** and adds **Rest,** after the ranks have been closed.

At the command **MARCH,** the rear rank closes to 40 inches, each man covering his file leader ; the file closers close to 2 paces from the rear rank. The platoon leader then resumes his post in front of the center of the platoon.

The company may be inspected in line according to similar principles.

1041. If the company is dismissed, rifles are put away. In quarters, headdress and accouterments are removed, and the men stand near their respective bunks ; in camp, they stand covered but without accouterments, in front of their tents.

If the personal field equipment has not been inspected in ranks and its inspection in quarters or camp is ordered, each man arranges the prescribed articles, on his bunk if in quarters or permanent camp, in front of his half of the tent if in shelter-tent camp, in the same relative order as prescribed in paragraph 1042.

The captain, accompanied by the platoon leaders, then inspects the quarters or camp. The first sergeant precedes the captain and calls the men to attention on entering each squad room or on approaching the tents ; the men stand at attention but do not salute.

1042. If the inspection is to include an examination of the equipment while in ranks, the captain, after the inspection of arms has been completed, causes the platoons to stack arms, march backward 4 paces in rear of the stacks, and take intervals. He then commands : 1. **UNSLING EQUIPMENT,** 2. **OPEN PACKS.**

At the first command, each man unslings his equipment and places it on the ground at his feet, haversack to the front, the pack 1 foot in front of toes.

At the second command, pack carriers are unstrapped, packs removed and unrolled, the longer edge of the pack along the lower edge of the cartridge belt. Each man exposes shelter tent pins and pole, removes meat can, knife, fork, and spoon from the meat-can pouch, and places them on the right of the haversack, knife, fork, and spoon in the open meat-can ; removes the canteen and cup from the cover and places them on the left side of the haversack ; unstraps and spreads out the haversack so as to expose its contents ; folds up the carrier so as to uncover the cartridge pockets ; opens the pockets ; unrolls toilet articles and places them on the outer flap of the haversack ; places underwear carried in pack on the left half of the open pack, with round fold parallel to front edge of pack ; opens first-aid pouch and exposes contents to view. Special articles carried by individual men, such as flag kit, field glasses, compass, steel tape, notebook, etc., are arranged on the right half of the open pack. Each man then resumes the attention.

The captain then passes along the ranks and file closers as before, inspects the equipment, returns to his position in front of the center of the leading platoon, and commands: **CLOSE PACKS.**

Each man rolls up his toilet articles and underwear, straps up his haversack and its contents, replaces the meat can, knife, fork, and spoon, and the canteen and cup ; closes cartridge pockets and first-aid pouch ; restores special articles to their proper receptacles ; rolls up and replaces pack in carrier ; and leaving the equipment in its position on the ground, resumes the attention.

All equipments being packed, the captain commands : **SLING EQUIPMENT.**

The equipments are slung, and belts fastened.

The captain then causes the platoons to assemble and take arms. The inspection is completed as already explained.

1043. The noncommissioned officer or private in charge of company headquarters prepares the detachment for inspection as prescribed for platoon leaders, posting his detachment at ten paces from the rear platoon before opening ranks.

1044. The captain may direct the platoon leaders to make the detailed inspection of the arms, equipment, etc., of the men of their platoons.

The second in command accompanies the captain throughout the inspection or makes such part of the inspection as the captain may direct.

1045. Should the inspector be other than the captain, the latter, after commanding REST, faces to the front. When the inspector approaches, the captain faces about, brings the company to attention, faces to the front, and salutes. As soon as inspected, he faces about, commands : REST, and accompanies the inspector. The inspection proceeds as before.

Battalion Inspection

1046. If the formation is to include both inspection and review, the inspection may either precede or follow the review.

The battalion is formed in line of close columns (Plate IV), all officers dismounted. The major causes the companies to extend to full distance ; the band, noncommissioned staff and colors conform to the movement of the companies.

The major commands : 1. Prepare for inspection, 2. MARCH.

At the first command, each captain commands : Open ranks.

At the command march, ranks are opened in each company as in the inspection of the company.

Buglers join their companies.

The band opens ranks.

The inspector inspects the major, and accompanied by the latter, inspects the staff officers.

The major then commands : REST, and with his staff, accompanies the inspector.

If the major is the inspector, he commands : REST, and inspects his staff, which then accompanies him.

The inspector, commencing at a flank of the battalion, then makes an inspection of the arms, accouterments, dress, and ammunition of each soldier of the band, the several companies, the color guard, and the noncommissioned staff.

The adjutant gives the necessary commands for the inspection of the band, the color guard, and the noncommissioned staff.

When the inspector approaches the band, the adjutant commands : PREPARE FOR INSPECTION.

As the inspector approaches him, each man raises his instrument in front of the body, reverses it so as to show both sides, and then returns it. Buglers execute inspection similarly.

The band plays during the inspection of the companies.

As the inspector approaches each company, its captain commands : 1. Company, 2. ATTENTION, and faces to the front ; as soon as inspected, he faces about, commands : REST and accompanies the inspector. The inspection proceeds as in company inspection. At the completion of the inspection of

the noncommissioned staff and each company, the major directs their dismissal, unless otherwise directed by the inspector.

1047. If the inspection will probably last a long time, the companies not under inspection may be permitted to stack arms and fall out; as the inspection of the preceding company nears completion, they fall in and take arms.

1048. At the inspection of quarters or camp, the inspector is accompanied by the captain, followed by the other officers or by such of them as he may designate. The inspection is conducted as described in company inspection.

Regimental Inspection

1049. The commands, means, and principles are the same as described for a battalion.

The regiment is formed in line of masses or such other suitable formation as required by the ground and the space available.

Before opening ranks, companies are extended to full distance.

On the approach of the inspector, each major brings his battalion to attention. Battalion inspection follows. Inspection of special units follows that of the battalions.

3. MUSTER

1050. The company is formed for muster in line or close column. The captain is provided with the roll of company and a list of absentees, alphabetically arranged, showing cause and place of absence.

As the mustering officer approaches, the captain salutes. The mustering officer returns the salute and directs the captain to prepare his company for muster. The captain commands: 1. Right shoulder, 2. ARMS, 3. Attention to muster.

The mustering officer or the captain then calls the names on the roll; each man as his name is called answers here and brings his piece to order arms.

After muster, the mustering officer verifies the presence of men reported in hospital, on guard, etc.

Muster is so conducted as to interfere as little as possible with the instruction of the troops.

4. HONORS AND SALUTES

1051. Further rules governing honors, courtesies, etc., are prescribed in Army Regulations.

1052. (1) Salutes are exchanged between officers and soldiers not in a military formation, nor at drill, work, games, or mess, on every occasion of their meeting, passing near or being addressed, the officer junior in rank or the soldier saluting first.

(2) When an officer enters a room where there are several soldiers, the warning " attention " is given by some one who perceives him, when all rise, uncover, and remain standing at attention until the officer leaves the room or directs otherwise. Soldiers at meals stop eating and remain seated at attention.

(3) A soldier, if seated, rises on the approach of an officer, faces toward him, stands at attention, and salutes. If standing, he faces an officer for the same purpose. If the parties remain in the same place or on the same ground, such compliments need not be repeated. Soldiers actually at work do not cease work to salute an officer unless addressed by him.

(4) Before addressing an officer, a soldier executes the prescribed salute with the weapon with which he is armed, or if unarmed, with the right hand. He salutes after receiving a reply.

(5) In uniform, covered or uncovered, but not in formation, officers and soldiers salute military persons as follows: With arms in hand, the salute prescribed for that arm (sentinels on interior guard duty excepted); without arms, the right-hand salute.

(6) In civilian dress, covered or uncovered, officers and soldiers salute military persons by executing the right hand salute.

(7) Officers and soldiers render the prescribed salutes in a military manner, the officer junior in rank, or the soldier, saluting first. When several officers in company are saluted, all entitled to the salute return it.

(8) Except in the field under campaign or simulated campaign conditions, a mounted officer or soldier dismounts before addressing a superior not mounted.

(9) A man in formation does not salute when directly addressed, but comes to attention if at rest or at ease.

(10) Saluting distance is that within which recognition is easy. In general, it does not exceed 30 paces.

(11) When an officer entitled to the salute passes in rear of

a body of troops, it is brought to attention while he is opposite the post of the commander.

(12) In public conveyances, such as railway trains and street cars, and in public places, such as theatres, honors and personal salutes may be omitted when palpably inappropriate.

(13) Soldiers at all times and in all situations pay the same compliments to officers of the Army, Navy, Marine Corps, and Volunteers, and to officers of the National Guard as to officers of their own regiment, corps, or arm of service.

(14) Sentinels on post doing interior-guard duty conform to the foregoing principles but salute by presenting arms when armed with the rifle. They do not salute if it interferes with the proper performance of their duties.

1053. (1) Commanders of detachments or other commands salute officers of higher grades by first bringing the unit to attention and then saluting as required by subparagraph (5), paragraph 1052. If the person saluted is of a junior or equal grade, the unit need not be at attention in the exchange of salutes.

(2) If two detachments or other commands meet, their commanders exchange salutes, both commands being at attention.

1054. Salutes and honors, as a rule, are not paid by troops actually engaged in drill, on the march, or in the field under campaign or simulated campaign conditions. Troops on the service of security pay no compliments whatever.

1055. A company in line or close column, or a larger unit in line or line of columns, at a halt (not in the field) and armed with the rifle, is brought to present arms before its commander salutes in the following cases : When the National Anthem is played, or when to the color is sounded during ceremonies, or when a person is saluted who is its immediate or higher commander or a general officer, or when the national or regimental color is saluted.

1056. At parades and other ceremonies, under arms, the command renders the prescribed salute and remains in the position of salute while the National Anthem is being played ; also at retreat and during ceremonies when to the color is sounded, if no band is present . If not under arms, units are brought to attention at the first note of the National Anthem or to the color, and the salute rendered by the officer or noncommissioned officer in command.

1057. Whenever the National Anthem is played at any place where persons belonging to the military service are present, all officers and enlisted men not in formation stand at attention

facing toward the music (except at retreat, when they face toward the flag). If in uniform, covered or uncovered, or in civilian clothes, uncovered, they salute at the first note of the anthem, retaining the position of salute until the last note of the anthem. If not in uniform and covered, they uncover at the first note of the anthem, holding the headdress opposite the left shoulder and so remain until its close, except that in inclement weather the headdress may be slightly raised.

The same rules apply when to the color is sounded as when the National Anthem is played.

When played by an Army band, the National Anthem is played through without repetition of any part not required to be repeated to make it complete.

The same marks of respect, prescribed for observance during the playing of the National Anthem of the United States, is shown toward the national anthem of any other country when played upon official occasions.

1058. Officers and soldiers passing the uncased color render honors as follows : if in uniform, they salute as required by subparagraph (5), paragraph 1052 ; if in civilian dress and covered, they uncover, holding the headdress opposite the left shoulder with the right hand ; if uncovered, they salute with the right-hand salute.

1059. In rendering honors at ceremonies, officers and leaders of platoons and equivalent subdivisions, without arms in hand, execute the first motion of the hand salute at the command arms of present arms and the command right (left) of eyes right (left). They execute the second motion at the command arms of order arms and at the command front. Noncommissioned officers commanding platoons and equivalent subdivisions and armed with the rifle execute present arms and order arms with their platoons ; during exercises in the manual, they remain at order arms ; in executing eyes right (left), they execute the first motion of the rifle salute at the command right (left) and the second motion at the command front. For salutes with the saber, see paragraph 1083.

1060. Officers and noncommissioned officers saluting individually when passing in review at ceremonies execute eyes right (left) at the first motion of the hand salute ; they return to front when the salute is terminated.

CHAPTER XII. — MANUALS

1. THE COLOR

1061. The word " color " implies the national color ; it includes the regimental color when both are present.

The rules prescribing the colors to be carried by regiments and battalions on all occasions are contained in Army Regulations.

1062. In garrison the colors, when not in use, are kept in the office or the quarters of the colonel and are escorted thereto and therefrom by the color guard. In camp the colors, when not in use, are in front of the colonel's tent. From reveille to retreat, when the weather permits, they are displayed uncased ; from retreat to reveille and during inclement weather, they are cased.

Colors are said to be cased when furled and protected by the oil-cloth covering.

1063. The regimental color salutes in the ceremony of escort of the color and in rendering honors to an officer entitled to the salute of the color, but in no other case.

If marching, the regimental color salutes when at 6 paces from the officer entitled to the salute, and resumes the carry when 6 paces beyond him.

The national color renders no salute.

The Color Guard

1064. The color guard consists of two color sergeants, who are the color bearers, and two experienced privates selected by the colonel. The senior color sergeant carries the national color, the junior color sergeant the regimental color. The regimental color, when carried, is always on the left of the national color, in whatever direction they may face.

1065. The color guard is formed and marched in one rank, the color bearers in the center. It is marched in the same manner and by the same commands as a squad, substituting, when necessary, guard for squad.

1066. When battalions are formed abreast, the color company is the center company of the center battalion. When

battalions are disposed one behind the other, the color company is the center company of the leading battalion. The color company at the original formation of the battalion or regiment remains the color company during subsequent movements unless otherwise directed.

1067. The post of the color guard in the several formations of the battalion is as shown in Plate IV. During movements involving changes of formation, the color guard conforms to the plates and maintains its position with reference to the flank or end of the color company on which it was originally posted in accordance with the principles of paragraph 22. In all changes of directions at ceremonies, the color guard moves in such manner as not to interfere with the march of units in its rear.

1068. In line (Plate IV), the color guard is in the center of the interval on the left of the color company on line with the front rank.

In line of close columns (Plate IV), the color guard is in the center of the interval on the left of the leading platoon of the color company on line with the front rank.

In close line (Plate IV), the color guard is in the center of the interval on the left of the color company on line with the leading guides.

When the regiment is formed in line of battalion columns or line of battalions in column of company close lines (Plate V) in the ceremonies of large commands, the color guard forms in the center of the interval on the left of the leading company of the center battalion. It rejoins the color company when the regiment changes formation.

1069. When with a battalion that takes the battle formation, the color guard joins the regimental reserve ; the reserve commander directs the color guard to join a designated company.

1070. The color guard executes neither loadings nor firings ; in rendering honors, it executes all movements in the manual ; in drill, all movements unless specially excused.

To Receive the Color

1071. The color guard presents arms on receiving and parting with the color at the command of the senior color sergeant. After parting with the color, the color guard is brought to order arms by command of the senior member who is placed as the right man of the guard.

1072. At drills and ceremonies in which the color is to part-

icipate, excepting escort of the color, the color is received by the color company prior to the formation of the battalion.

The formation of the color company completed, the captain faces to the front ; the color guard, conducted by the senior sergeant, approaches from the front and halts at a distance of 10 paces from the captain, who then faces about, brings the company to the present, faces to the front, salutes, again faces about and brings the company to the order. The color guard executes the present and the order with the color company, and is then marched by the color sergeant directly to its post on line with the front rank of the company (in line) or of the leading platoon (close column), 5 paces from the guide of the company or platoon.

1073. When the battalion is dismissed, the color guard escorts the color to the office or quarters of the colonel.

Manual of the Color

1074. At the carry, the heel of the pike rests in the socket of the sling ; the right hand grasps the pike at the height of the shoulder.

At the order, the heel of the pike rests on the ground near the right toe, the right hand holding the pike in a vertical position.

At parade rest, the heel of the pike is on the ground, as at the order : the pike is held with both hands in front of the center of the body, left hand uppermost.

The order is resumed at the command attention.

The left hand assists the right when necessary.

The carry is the habitual position when the troops are at shoulder, port, or trail arms.

The order and the parade rest are executed with the troops.

The color salute : Being at the carry, slip the right hand up the pike to the height of the eye, then lower the pike by straightening the arm to the front.

2. THE BAND

1075. The band is formed in two or more ranks with sufficient intervals between the men and distances between the ranks to permit of the free use of the instruments.

The field music, when united, forms with, and in rear of, the band ; when the band is not present, the posts, movements, and duties of the field music are the same as prescribed for the band ; when a musician is in charge, his position is on the right

of the front rank. When the battalion or regiment turns about by squads, the band executes the countermarch; when the battalion or regiment executes right, left, or about face, the band faces in the same manner.

In marching, each rank dresses to the right.

In executing open ranks, each rank of the band takes a distance of 3 paces from the rank next in front; the drum major verifies the alignment.

The field music sounds the march, flourishes, or ruffles, and to the color at the signal of the drum major.

1076. The post of the drum major is 3 paces in front of the center of the front rank. He gives the signals or commands for the movements of the band as for a squad, substituting in the commands band for squad.

Signals of the Drum Major

1077. Preparatory to a signal, the staff is held with the right hand near the head of the staff, hand below the chin, back of the hand to the front, ferrule pointed upward and to the right.

Prepare to play: Face toward the band and extend the right arm to its full length in the direction of the staff. **Play**: Bring the arm back to its original position in front of the body.

Prepare to cease playing: Extend the right arm to its full length in the direction of the staff. **Cease playing**: Bring the arm back to its original position in front of the body.

To march: Turn the wrist and bring the staff to the front, the ferrule pointing upward and to the front; extend the arm to its full length in the direction of the staff.

To halt: Lower the staff into the raised left hand and raise the staff horizontally above the head with both hands, the arms extended; lower the staff with both hands to a horizontal position at the height of the hips.

To countermarch: Face toward the band and give the signal to march; each front-rank man to the right of the drum major turns to the right about, each front-rank man to the left turns to the left about; each front-rank man is followed by the men covering him. The drum major passes through the center.

To oblique: Bring the staff to a horizontal position, the head of the staff opposite the neck, the ferrule pointing in the direction the oblique is to be made; extend the arm to its full length in the direction of the staff.

To march by the right flank: Extend the arm to the right, the staff vertical, ferrule upward, back of the hand to the rear.

To march by the left flank : Extend the arm to the left, the staff vertical, ferrule upward, back of the hand to the front.

To diminish front : Let the ferrule fall into the left hand at the height of the eyes, right hand at the height of the hip.

To increase front : Let the ferrule fall into the left hand at the height of the hip, right hand at the height of the neck.

The march, flourishes, or ruffles : Bring the staff to a vertical position, hand opposite the neck, back of the hand to the front, ferrule pointing down.

To the color : Bring the staff to a horizontal position at the height of the neck, back of the hand to the rear, ferrule pointing to the left.

When the band is playing in marching, the drum major beats the time with his staff and supports the left hand at the hip, fingers in front, thumb to the rear.

The drum major, with staff in hand, salutes by bringing his staff to a vertical position, head of the staff up and opposite the left shoulder.

At a halt, when the band not playing, the drum major holds his staff with the ferrule touching the ground about 1 inch from the toe of the right foot, at an angle of about 60°, ball pointing upward to the right, right hand grasping staff near the ball, back of the hand to the front ; left hand at the hip, fingers in front, thumb to the rear.

3. THE SABER

General Rules

1078. An officer or noncommissioned officer, supervising the formation of a unit, draws saber on taking post for that purpose. An officer in command of a unit draws saber after receiving the report of the officer or noncommissioned officer supervising the formation.

1079. The saber is drawn whenever troops are at attention. It is carried in the scabbard or at will when troops are marching at ease or at route step or standing at rest or at ease.

1080. The saber is held at the carry when giving commands, marching at attention, or changing position in quick time.

1081. The saber, when drawn, is held in the position of order when troops are standing at attention except as prescribed in paragraph 1080. When arms are brought to the order, officers and enlisted men with the saber drawn execute order saber.

1082. *In publishing orders, calling the roll, etc., the saber is held suspended from the right wrist by the saber knot; when the saber knot is used, it is placed on the wrist before drawing saber and taken off after returning saber.

1083. In rendering honors with troops, officers execute the first motion of the present at the command present or eyes and the second motion at the command arms or right (left); noncommissioned officers armed with the saber execute the first motion at the command arms or right (left) and omit the second motion. At the command front, officers and noncommissioned officers armed with the saber return to the carry.

Officers saluting individually when passing in review execute eyes right (left) at the second motion of present saber and front when returning to the carry. Non-commissioned officers, saluting individually when passing in review, execute eyes right (left) at the first motion of present saber and omit the second motion; they execute front when returning to the carry.

1084. At reviews, the commanding officer of the troops returns saber after taking post on the left of the reviewing officer and draws saber before rejoining his command and after saluting the reviewing officer; the staff of the commanding officer of the troops returns and draws saber with him.

1085. After marching to the front and center and saluting the major at battalion parade, officers return to the carry with the major.

1086. At battalion parade, the major draws saber after receiving the report of the adjutant and returns saber after giving the command for passing the battalion in review. Officers posted on line with the major's staff return saber with him.

1087. At inspection, the commanding officer of the troops comes to carry saber after saluting the inspecting officer; other officers come to carry saber on the approach of the inspecting officer. All officers who accompany the inspecting officer during his inspection return saber after being inspected.

Manual of the Saber

1088. 1. Draw, 2. SABER.

At the command draw, unhook the saber with the thumb and the first two fingers of the left hand, thumb on the end of the hook, fingers lifting the upper ring; grasp the scabbard with the left hand at the upper band, bring the hilt a little forward, seize the grip with the right hand, and draw the blade 6 inches

out of the scabbard, pressing the scabbard against the thigh with the left hand.

At the command **saber**, draw the saber quickly, raising the arm to its full extent to the right front at an angle of about 45° with the horizontal, the saber, edge down, in a straight line with the arm ; make a slight pause and bring the back of the blade against the shoulder, edge to the front, arm nearly extended, hand by the side, elbow back, third and fourth fingers back of the grip ; at the same time, hook up the scabbard with the thumb and first two fingers of the left hand, thumb through the upper ring, fingers supporting it ; drop the left hand by the side.

This is the position of carry saber dismounted.

1089. Officers and noncommissioned officers armed with the saber unhook the scabbard before mounting ; when mounted, in executing the first motion of **draw saber**, they reach with the right hand over the bridle hand, and without the aid of the bridle hand, draw the saber as before ; the right hand at the **carry** rests on the right thigh.

On foot, the scabbard is carried hooked up.

1090. Being at the order or carry: 1. **Present**, 2. **SABER** (or **ARMS**). At the command **present**, raise and carry the saber to the front, base of the hilt as high as the chin and 6 inches in front of the neck, edge to the left, point 6 inches farther to the front than the hilt, thumb extended on the left of the grip, all fingers grasping the grip.

At the command **saber** or **arms**, lower the saber, point in prolongation of the right foot and near the ground, edge to the left, hand by the side, thumb on left of grip, arm extended. If mounted, hold the hand behind the thigh, point of the saber a little to the right and front of the stirrup.

1091. Being at the carry : 1. **Order**, 2. **SABER** (or **ARMS**).

Drop the point of the saber directly to the front, point on or near the ground, edge down, thumb on back of grip.

Being at the present saber, should the next command be **order arms**, officers and noncommissioned officers armed with the saber **order saber** ; if the command be other than **order arms**, they execute **carry saber**.

When arms are brought to the order, officers or enlisted men with the saber drawn **order saber**.

1092. Being at the order : 1. **Parade**, 2. **REST.**

Take the position of parade rest, except that the left hand is uppermost and rests on the right hand, point of saber on or near the ground in front of the center of the body, edge to the right.

At the command attention, resume the order saber and the position of the soldier.

1093. In marching in double time, the saber is carried diagonally across the breast, edge to the front ; the left hand steadies the scabbard.

1094. Officers and noncommissioned officers armed with the saber, on all duties under arms, draw and return saber without waiting for command. All commands to soldiers under arms are given with the saber drawn.

1095. Being at the carry : 1. Return, 2. SABER.

At the command return, carry the right hand opposite to and 6 inches from the left shoulder, saber vertical, edge to the left ; at the same time, unhook and lower the scabbard with the left hand and grasp it at the upper band.

At the command saber, drop the point to the rear and pass the blade across and along the left arm ; turn the head slightly to the left, fixing the eyes on the opening of the scabbard, raise the right hand, insert and return the blade ; free the wrist from the saber knot (if inserted in it), turn the head to the front, drop the right hand by the side ; hook up the scabbard with the left hand and drop the left hand by the side.

Officers and noncommissioned officers armed with the saber, when mounted, return saber without using the left hand ; the scabbard is hooked up on dismounting.

1096. At inspection, enlisted men with the saber drawn execute the first motion of present saber and turn the wrist to show both sides of the blade, resuming the carry when the inspector has passed.

4. TENT PITCHING

Shelter Tents

1097. Being in single or double column of platoons, the captain commands : FORM FOR SHELTER TENTS.

The soldiers of company and platoon headquarters form additional files on one or both flanks of the platoons, as directed by company and platoon commanders ; blank files are filled by file closers or by men taken from the front rank.

1098. The captain then causes the company to take intervals as described in the School of the Squad, and commands : PITCH TENTS.

At the command pitch tents, each man steps off obliquely to the right with the right foot and lays his rifle on the ground, the butt of the rifle near the toe of the right foot, muzzle to the front, barrel to the left, and steps back into his place ; each front-rank man then draws his bayonet and sticks it in the ground by the outside of the right heel.

Equipments are unslung, packs opened, shelter half, poles and pins removed ; each man then spreads his shelter half, triangle to the rear, flat upon the ground the tent is to occupy, the rear-rank man's half on the right. The halves are then buttoned together. Each front-rank man joins his pole, inserts the top in the eyes of the halves, and holds the pole upright beside the bayonet placed in the ground ; his rear-rank man, using the pins in front, pins down the front corners of the tent on the line of bayonets, stretching the canvas taut ; he then inserts a pin in the eye of the guy rope and drives the pin at such distance in front of the pole as to hold the rope taut. Both then go to the rear of the tent ; the rear-rank man adjusts the pole and the front rank man drives the pins. The rest of the pins are then driven by both men, the rear-rank man working on the right.

As soon as the tent is pitched, each man arranges his equipment and the contents of his pack in the tent and stands at attention in front of his own half on line with the front guy-rope pin.

To have a uniform slope when the tents are pitched, the guy ropes should all be of the same length.

1099. To pitch double shelter tents, the commands are the same as prescribed in paragraph 1098 except that half intervals (2 paces) are taken at the command **Take half interval,** and tents are pitched at the command **Pitch double tents.** Only the odd numbers of the front rank mark the line with the bayonet.

The tent is formed by buttoning together the square ends of two single tents. Two complete tents, except one pole, are used to form a double tent. Two guy ropes are used at each end ; the guy pins are placed in front of the corner pins.

The tents are pitched by Nos. 1 and 2, and by No. 3 and 4, front and rear rank.

All men spread their shelter halves on the ground the tent is to occupy. The halves of front-rank men are placed with the triangular ends to the front. All four halves are then buttoned together, first the ridges and then the square ends. The front corners of the tent are pinned by the front-rank men ;

the odd number holds the poles, the even number drives the pins. The rear-rank men similarly pin the rear corners.

While the odd numbers steady the poles, the even number of the front rank takes his pole and enters the tent; assisted by the even number of the rear rank, he adjusts the pole to the center eyes of the shelter halves in the following order: (1) the lower half of front tent; (2) the lower half of the rear tent; (3) the upper half of the front tent; (4) the upper half of the rear tent. The guy ropes are then adjusted.

The tents having been pitched, the triangular ends are turned back, contents of the rolls arranged, and the men stand at attention, each opposite his own shelter half and facing outward.

1100. When the pack is not carried, the company is formed for shelter tents, intervals are taken, arms are laid aside or on the ground, the men are dismissed and proceed to the wagon, secure their packs, return to their places, and pitch tents as heretofore described.

Single Sleeping Bag

1101. Spread the poncho on the ground, buttoned end at the feet, buttoned side to the left; fold the blanket once across its short dimension and lay it on the poncho, folded side along the right side of the poncho; tie the blanket together along the left side by means of the tapes provided; fold the left half of the poncho over the blanket and button it together along the side and bottom.

Double Sleeping Bag

1102. Spread one poncho on the ground, buttoned end at the feet, buttoned side to the left; spread the blankets on top of the poncho; tie the edges of the blankets together with the tapes provided; spread a second poncho on top of the blankets, buttoned end at the feet, buttoned side to the right; button the two ponchos together along both sides and across the end.

To Strike Shelter Tents

1103. The men standing in front of their tents: STRIKE TENTS.

Equipments and rifles are removed from the tent; the tents are lowered, packs made up, and equipments slung, and the men stand at attention in the places originally occupied after taking intervals.

Common and Wall Tents

1104. To pitch all types of army tents, except shelter and conical wall tents : Mark the line of tents by driving a wall pin on the spot to be occupied by the right (or left) corner of each tent. For pyramidal tents, the interval between adjacent pins should be about 30 feet, which gives a passage of two feet between tents. If the tripod is used, spread it on the ground where the center of tent is to be. Spread the tent on the ground to be occupied, door to the front, and place the right (or left) front wall loop over the pin. The door (or doors, if more than one) being fastened and held together at the bottom, the left (or right) corner wall loop is carried to the left (or right) as far as it will go and a wall pin driven through it, the pin being placed in line with the right (or left) corner pins already driven. At the same time, the rear corner wall loops are pulled to the rear and outward, so that the rear wall of the tent is stretched to complete the rectangle. Wall pins are then driven through these loops. Each corner pin should be directly in rear of the corresponding front corner pin, forming a rectangle. Unless the canvas is wet, a small amount of slack should be allowed before the corner pins are driven. According to the size of the tent, one or two men, crawling under the tent if necessary, fit each pole or ridge or upright into the ring or ridge pole holes, and such accessories as hood, fly, and brace ropes are adjusted. If a tripod be used, an additional man goes under the tent to adjust it. The tent, steadied by the remaining men, one at each corner guy rope, is then raised. If the tent is a ward or storage type, corner poles are next placed at the four corners. The four corner guy ropes are then placed over the lower notches of the large pins which are driven in prolongation of the diagonals at such distance as to hold the walls and ends of the tent vertical and smooth when the guy ropes are drawn taut. A wall pin is then driven through each remaining wall loop, and a large pin for each guy rope is driven in line with the corner guy pins already driven. The guy ropes of the tent are placed over the lower notches of the pins, while the guy ropes of the fly are placed over the upper notches, and are then drawn taut. Brace ropes, when used, are then secured to stakes or pins suitably placed.

Conical Wall Tent

1105. Drive the door pin and center pin, 8 feet 3 inches apart. Using the hood lines with the center pin as center, describe two concentric circles with radii, 8 feet 3 inches, and

11 feet 3 inches. In the outer circle, drive two door guy pins, 3 feet apart. At intervals of about 3 feet, drive the other guy pin.

In other respects, conical tents are erected practically as in the case of pyramidal tents.

To Strike Common, Wall, Pyramidal, and Conical Wall Tents

1106. STRIKE TENTS.

The men first remove all pins except those of the four corner guy ropes or (conical wall tent) the four quadrant guy ropes. The pins are neatly piled or placed in a receptacle.

One man holds each guy, and when the ground is clear, the tent is lowered and folded, or rolled and tied, the poles, or the tripod and pole, fastened together, and the remaining pins collected.

To Fold Tents

1107. In folding common, wall, hospital, and storage tents: Spread the tent flat on the ground, folded at the ridge so that bottoms of side walls are even, ends of tent forming triangles to the right and left; fold the triangular ends of the tent in toward the middle, making it rectangular in shape; fold the top over about 9 inches; fold the tent in two by carrying the top fold over clear to the foot; fold again in two from the top to the foot; throw all guys on the tent except the second from each end; fold the ends in so as to cover about two-thirds of the second cloths; fold the left end over to meet the turned-in edge of the right end, then fold the right end over the top, completing the bundle; tie with the two exposed guys.

Method of Folding Pyramidal Tent

The tent is thrown toward the rear, and the back wall and roof canvas pulled out smooth. This may be most easily accomplished by leaving the rear-corner wall pins in the ground with the wall loops attached, one man at each rear-corner guy and one holding the square iron in a perpendicular position and pulling the canvas to its limit away from the former front of the tent. This leaves the three remaining sides of the tent on top of the rear side, with the door side in the middle.

Next carry the right-front corner over and lay it on the left-rear corner. Pull all canvas smooth, throw guys toward the square iron, and pull the bottom edges even. Then take the

right-front corner and return to the right, covering the right-rear corner. This folds the right side of the tent on itself, with the crease in the middle and under the front side of tent.

Next carry the left-front corner to the right and back as described above ; this when completed will leave the front and rear sides of the tent lying smooth and flat and the two side walls folded inward, each on itself.

Place the hood in the square iron which has been folded downward toward the bottom of tent, and continue to fold around the square iron as a core, pressing all folds down flat and smooth, and parallel with the bottom of the tent. If each fold is compactly made and the canvas kept smooth, the last fold will exactly cover the lower edge of the canvas. Lay all exposed guys along the folded canvas except the two on the center width, which should be pulled out and away from bottom edge to their extreme length for tying. Then, beginning at one end, fold toward the center on the first seam (the one joining the first and second widths), and fold again toward the center so that the already folded canvas will come to within about 3 inches of the middle width. Then fold over to the opposite edge of middle width of canvas. Then begin folding from opposite end, folding the first width in half, then making a second fold to come within about 4 or 5 inches of the part of the tent already folded, turn this fold entirely over that part. Take the exposed guys and draw them taut across each other, turn bundle over on the under guy, cross guys on top of bundle, drawing them tight. Turn bundle over on the crossed guys, and tie lengthwise.

When properly tied and pressed together, the package thus made will be 11 by 23 by 34 inches, requiring about 8,855 cubic inches to store or pack.

Stencil the unit designation on the lower half of the middle width of canvas in the back wall.

5. THE BUGLE

Warning Calls

1108. First call, guard mounting, full dress, overcoats, drill, stable, water, and boots and saddles precede the assembly by such interval as may be prescribed by the commanding officer.

Mess, church, and fatigue, classed as service calls, may also be used as warning calls.

First call is the first signal for formation for roll call and for all ceremonies except guard mounting.

Guard mounting is the *first* signal for guard mounting.

The field music assembles at first call and guard mounting.

In a mixed command, boots and saddles is the signal to mounted troops that their formation is to be mounted; for mounted guard mounting or mounted drill, it immediately follows the signal guard mounting or drill.

When full dress or overcoats are to be worn, the full dress or overcoat call immediately follows first call, guard mounting, or boots and saddles.

Formation Calls

1109. Assembly: The signal for companies or details to fall in.

Adjutant's call: The signal for companies to form battalion; also for the guard details to form for guard mounting on the camp or garrison parade ground; it follows the assembly at such interval as may be prescribed by the commanding officer. It is also used as a signal for the battalions to form regiment, following the first adjutant's call at such interval as the commanding officer may prescribe.

To the color: Sounded when the color salutes.

Alarm Calls

1110. Fire call: The signal for the men to fall in, without arms, to extinguish fire.

To arms: The signal for the men to fall in, under arms, at their company assembly places as quickly as possible.

To horse: The signal for mounted men to proceed under arms to their horses, saddle, mount, and assemble at a designated place as quickly as possible. In extended order, it is used as a signal for troops to remount.

Service Calls

1111. Tattoo, taps, mess, sick, church, recall, issue, officers', captains', first sergeants', fatigue, school, and the general.

The general is the signal for striking tents and loading wagons preparatory to marching.

Reveille precedes the assembly for roll call; retreat follows

the assembly, the interval between the calls being only that required for formation and roll call, except when there is parade.

Taps is the signal for extinguishing lights ; it is usually preceded by call to quarters by such interval as prescribed by Army Regulations.
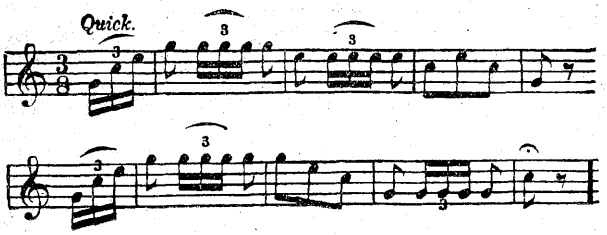
Assembly, reveille, retreat, adjutant's call, to the color, the flourishes, ruffles, and the marches are sounded by all the field music united ; the other calls, as a rule, are sounded by the bugler of the guard or the orderly bugler ; they may also sound the assembly when the buglers are not united.

The morning gun is fired at the first note of reveille, or if marches be played before reveille, it is fired at the commencement of the first march.
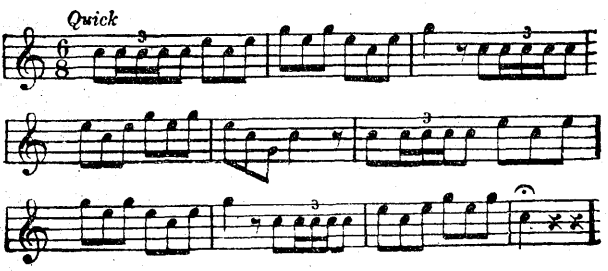
The evening gun is fired at the last note of retreat.

BUGLE CALLS
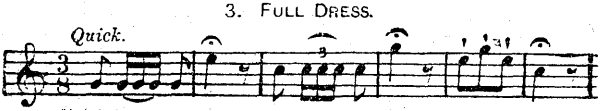
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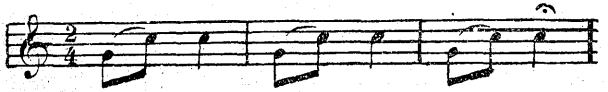


2. GUARD MOUNTING.



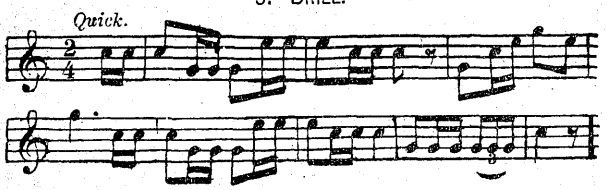
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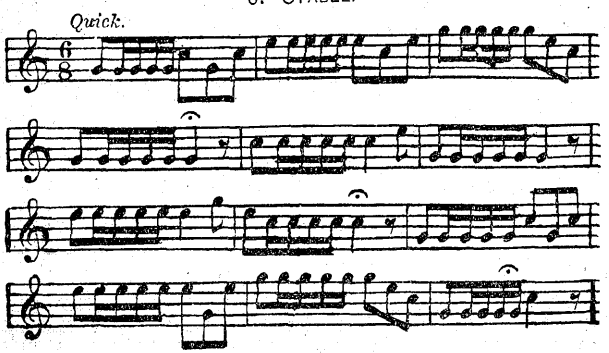


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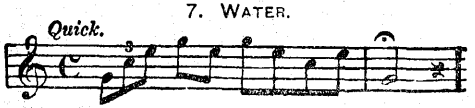
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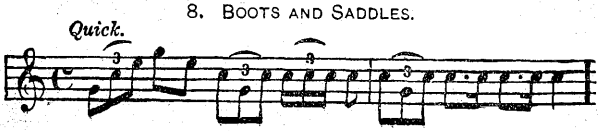


6. STABLE.



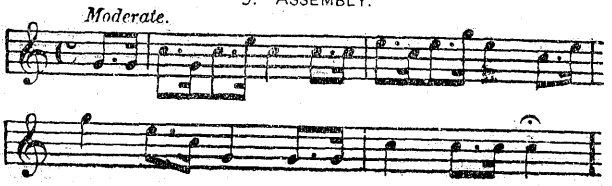
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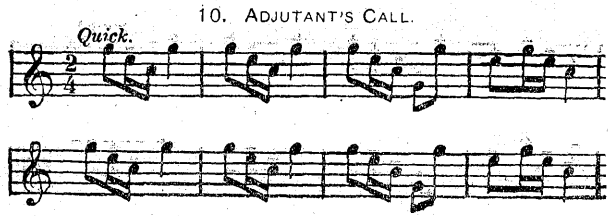
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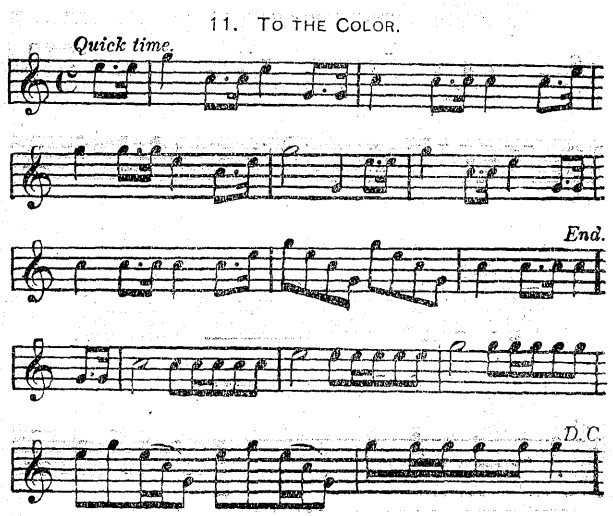


9. ASSEMBLY.
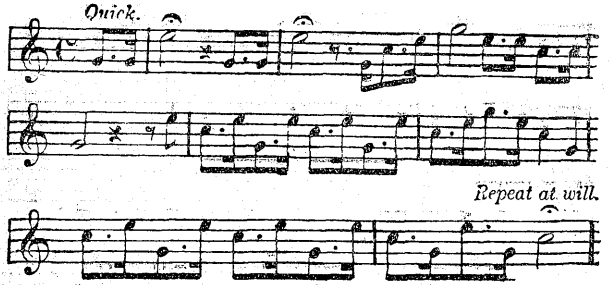


10. ADJUTANT'S CALL.
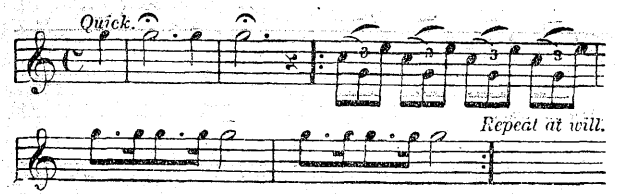


11. TO THE COLOR.



12. FIRE.
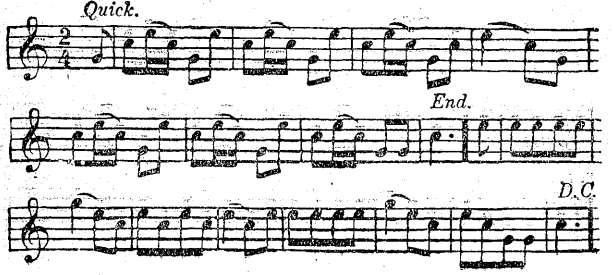


13. TO ARMS
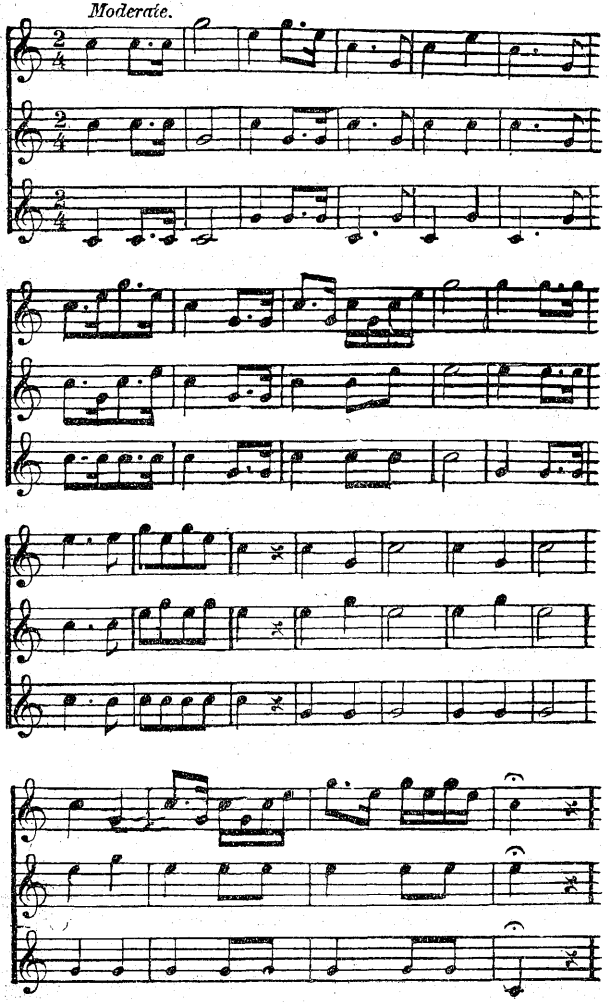


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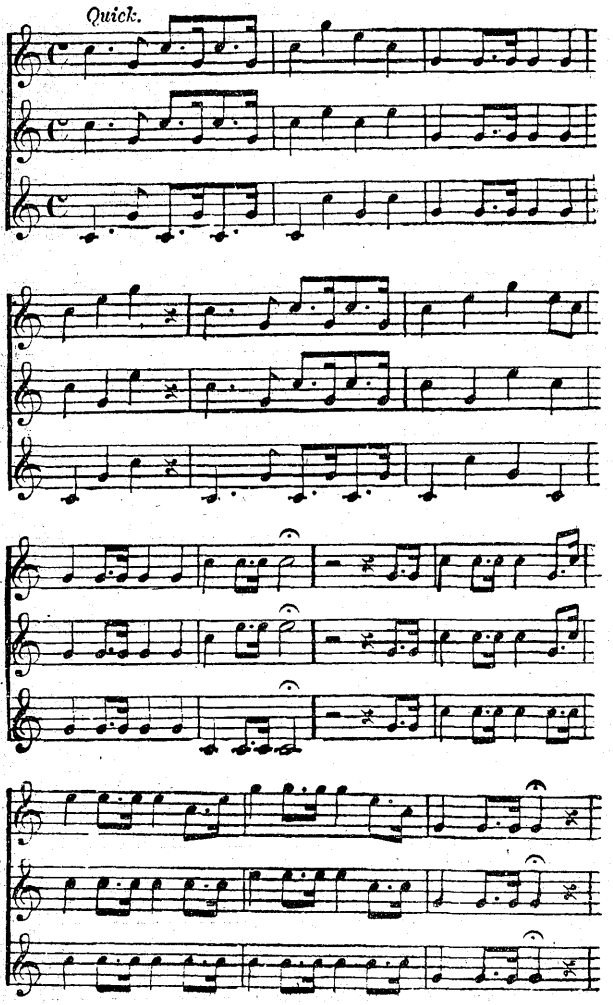


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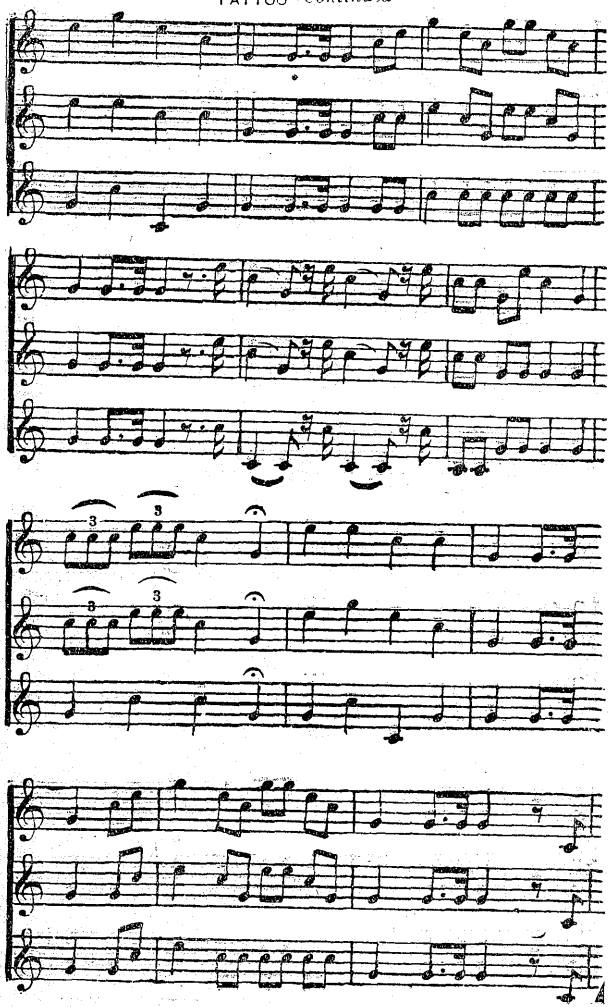


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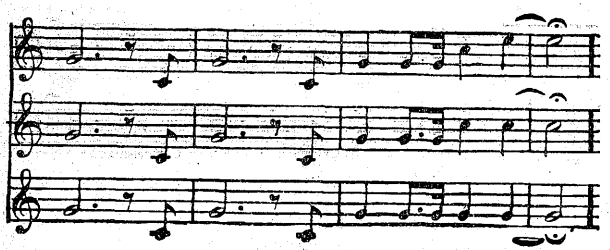


17. TATTOO.



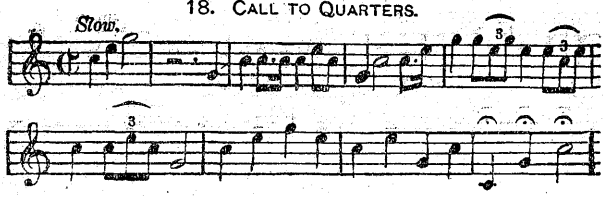
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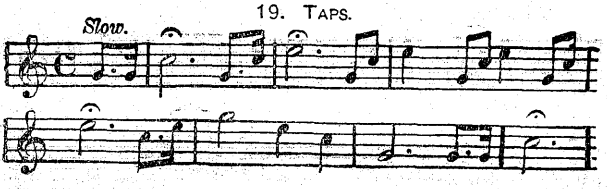


TATTOO—*Concluded.*
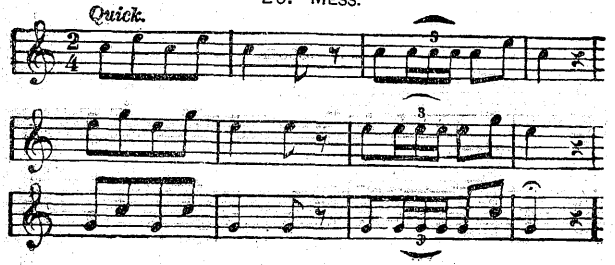


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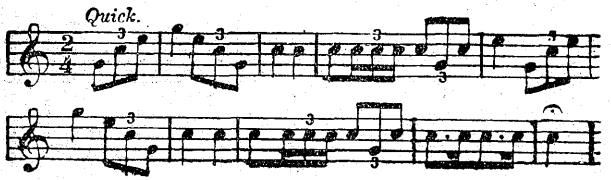


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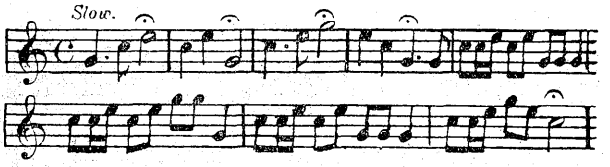


20. MESS.



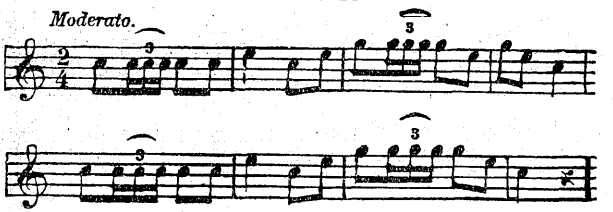
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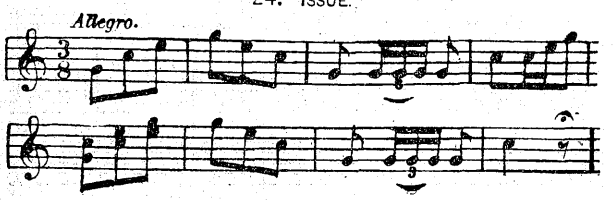
22. CHURCH.
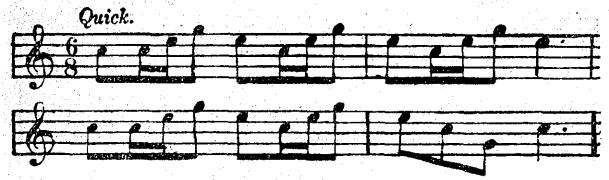


23. RECALL.



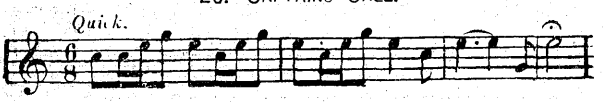
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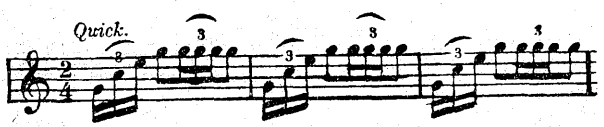


25. OFFICERS' CALL.
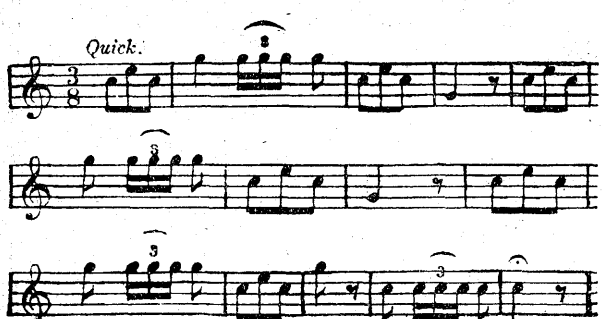


26. CAPTAINS' CALL.
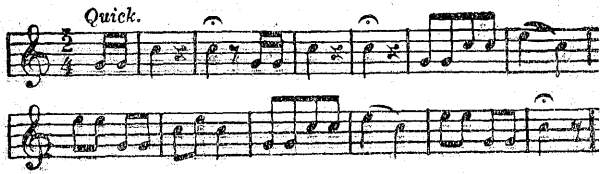


27. FIRST SERGEANTS' CALL.



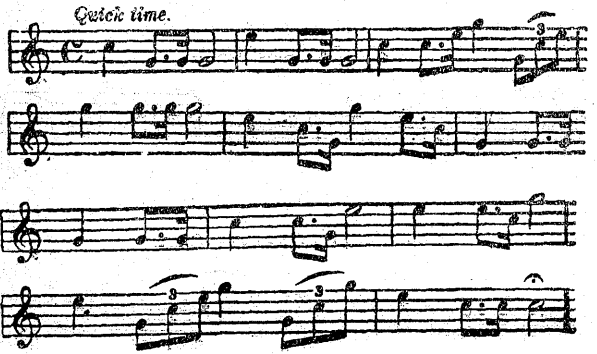
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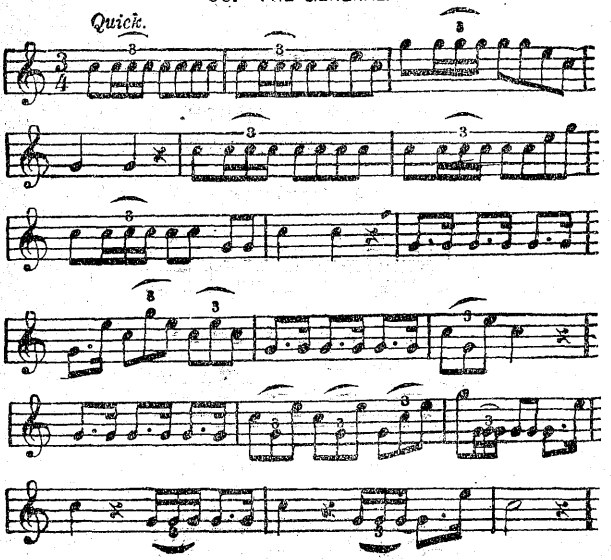


29. SCHOOL.



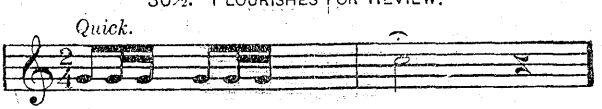
29½ THE GENERAL'S MARCH.



30. THE GENERAL.



30½. FLOURISHES FOR REVIEW.

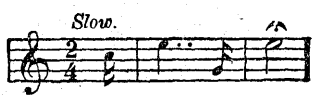


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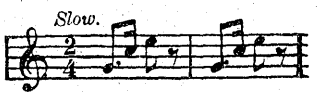
(See paragraph 41).

31. ASSEMBLE. MARCH.
Same as *Assembly*, No. 9.

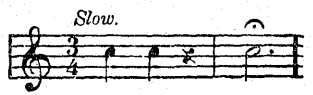
32. ATTENTION.



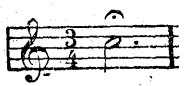
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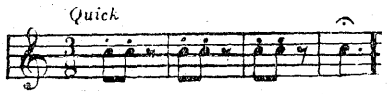


34. FORWARD. MARCH.



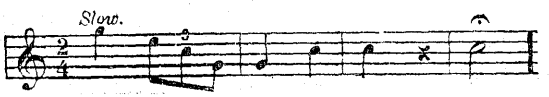
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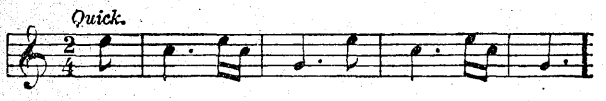


36. DOUBLE TIME. MARCH.



37. TO THE REAR. MARCH.
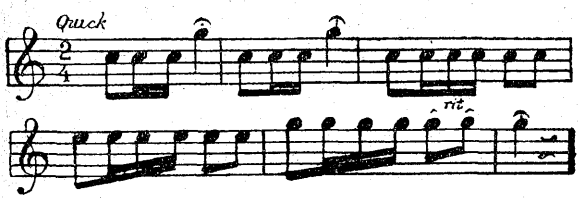


38. COMMENCE FIRING.



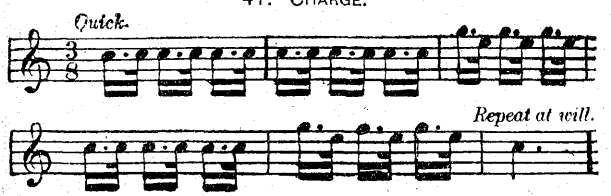
39. CEASE FIRING.



40. FIX BAYONETS.



41. CHARGE.



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INFANTRY
DRILL REGULATIONS
(PROVISIONAL)

AMERICAN EXPEDITIONARY FORCES

PART II

1918

(WITH AMENDMENTS TO PART I)

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Infantry Drill Regulations

(PROVISIONAL)

AMERICAN EXPEDITIONARY FORCES

Part II

1918

(WITH AMENDMENTS TO PART I)

PARIS
IMPRIMERIE E. DESFOSSÉS
13, QUAI VOLTAIRE

PREFACE

Part II, Provisional Infantry Drill Regulations, American Expeditionary Forces, with amendments to Part I, is published for the information and guidance of the American Expeditionary Forces.

The Provisional Infantry Drill Regulations, 1918, (Parts I and II), supersede the following previously published regulations and instructions:

Instructions for the Offensive Conduct of Small Units, January 2, 1918, (War Department Document N° 802).

Instructions for the Defensive Combat of Small Units, N° 1312, July, 1918.

Infantry Drill Regulations, United States Army, 1911, (War Department Document N° 394).

By command of General Pershing:

JAMES W. McANDREW,

Chief of Staff.

Official:

ROBERT C. DAVIS,

Adjutant General.

GENERAL HEADQUARTERS AMERICAN EXPEDITIONARY FORCES, FRANCE, *May* 8, 1919.

AMENDMENTS PART 1

INFANTRY DRILL REGULATIONS, A.E.F., 1918

6th subparagraph, paragraph **75**, amended to read :

Fourth. The bayonet is not fixed except in bayonet exercise, on guard, at ceremonies, or for combat.

Paragraph **273** : Amended to read :

The formations of the battalion (Plate IV) are : line (companies in line), line of close columns (companies in close column), close column (companies in close column), close line (companies in close line), column of close lines (companies in close line), and column of squads.

The column of squads is the only formation that has any application in campaign. It is extended for approach march or combat in the formation required by the situation.

The formation in line is employed only for ceremonies in which a single battalion participates.

For ceremonies involving two or more battalions, the batta, lion is formed in line of close columns, close column, close line- or column of close lines.

Plate IV amended as shown in revised Plate IV, page 6.

1st subparagraph, paragraph 280, amended to read :

For battalion ceremonies or when directed, the battalion is formed in line or line of close columns.

Paragraph **291** amended to read as follows :

The formations of the regiment (Plate V) are : line of masses (battalions in line of close columns), line of battalion columns (battalions in close column), column of masses (battalions in line of close columns), column of battalion close lines (battalions in close line), and line of battalions in column of company close lines.

Of these formations, the column of squads is the only one that has any application in campaign. The battalions are extended and deployed in special formations required by the situation.

The line of masses is the ordinary formation for regimental ceremonies.

The line of battalion columns, column of masses, column

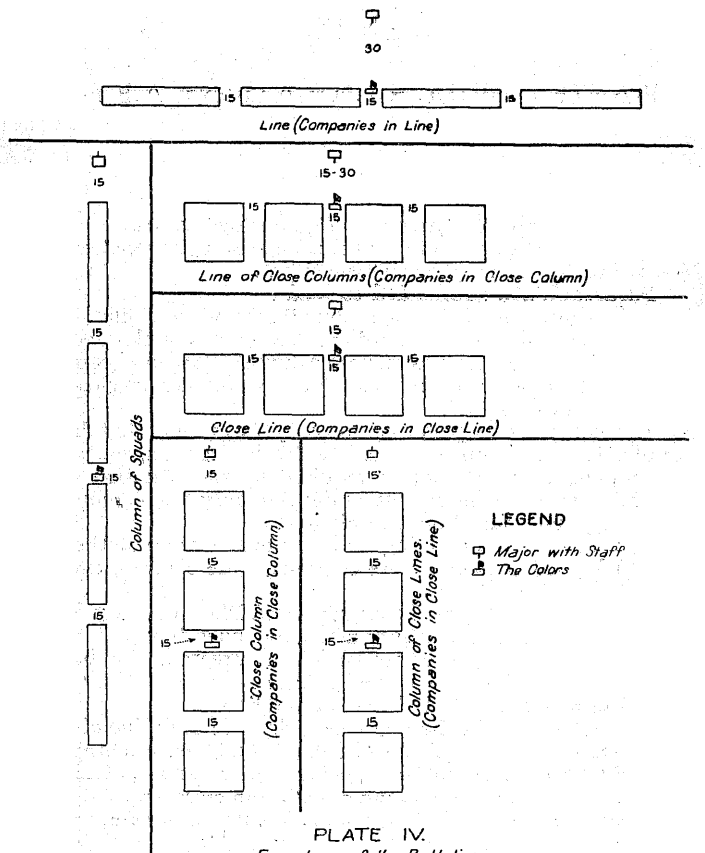


PLATE IV.

Formations of the Battalion.

Diagramatic:- Not drawn to scale.

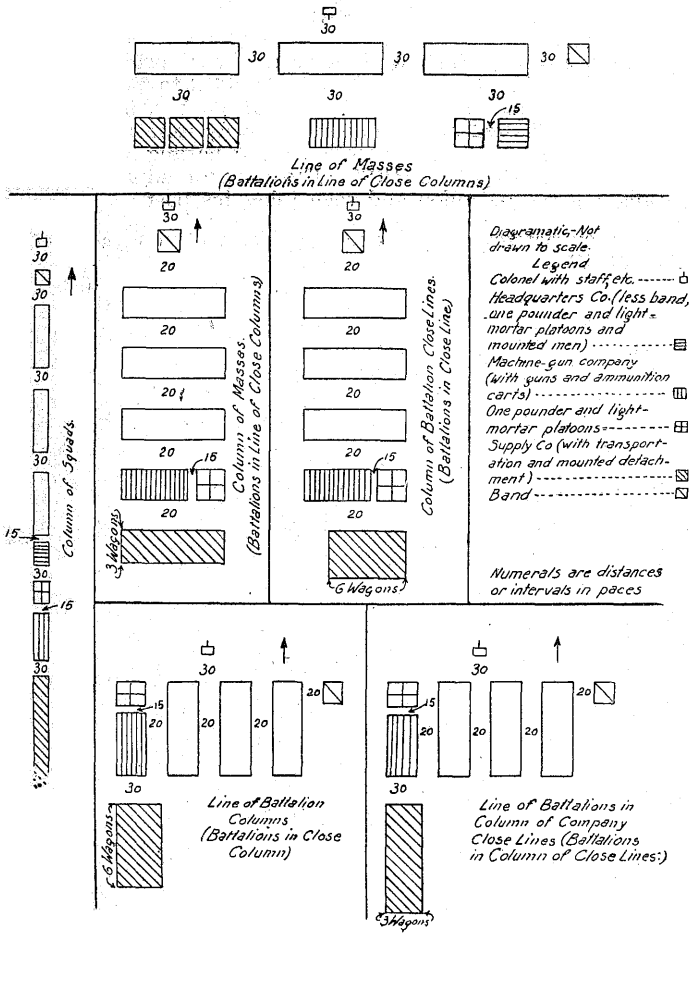
Numerals are distances or intervals in paces

All intervals and distances are measured between guides.

Distance of Major's post in front of center of battalion in line of Close Columns: 30 paces in formations of a single battalion: 15 in formations of a Regiment or larger unit.

PLATE - V

Formations of the Regiment.



of battalion close lines, and line of battalions in column of company close lines are employed in ceremonies of large commands (see paragraph 1025). These formations are described for convenience in designating the method of forming large commands for ceremonies and for reference when required. They have no other value.

Plate V amended as shown in revised Plate V, page 7.

4th subparagraph, paragraph **295**, amended to read :

The battalions, arriving from the rear, each **in line of close columns**, are halted on the line successively from right to left in their proper order and places. Upon halting, each major commands: 1. Right, 2. DRESS. The battalion adjutant assists in aligning the battalion and then takes his post.

Between paragraphs 534 and 535, insert heading MORTAR BATTERY.

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INFANTRY DRILL REGULATIONS

AMERICAN EXPEDITIONARY FORCES 1918

PART II

CHAPTER V. — DEFENSIVE COMBAT

1. GENERAL PRINCIPLES

552. The defensive is a form of action to be deliberately chosen only for the purpose of economizing troops on a front where a decision is not sought in order to concentrate superior forces at the point of decisive action. The defensive may, however, be imposed by the situation.

The economy of force effected by a *limited* defensive is the means of preserving the initiative of the commander.

On a defensive front, economy of force (holding out of reserves) is the means of enabling the defender to meet the attackern initiative and of transforming a defensive attitude into as' offensive.

Whatever may be the character of the defense (voluntary or imposed), the tactics of defensive action are essentially the tactics of holding extensive fronts with relatively weak forces.

553. All successful defense is based upon the vigilance and fighting power of the troops. The principles of defense serve only to give these qualities the best opportunity for their development; they have no inherent value of their own. The defensive forces must quickly discover a hostile attack, promptly form for action, and open fire without delay on the most important objectives.

554. The defense, no less than the offense, must, wherever possible, act by surprise. The visible lines of a defensive system must not betray the defensive dispositions, but rather act as a mask that conceals the real defensive organization.

555. The defense must be mobile. Mobility is acquired either by the holding out of large reserves as units of maneuver, or by distribution of the defenses in depth.

The holding out of large reserves as units of maneuver endows the defensive force with mobility by enabling it to meet the attack wherever it develops and to counter-attack in force at points of decisive importance.

The distribution of defenses in depth contributes to defensive mobility by permitting of the offering of resistance to the flanks as well as to the front. Depth of defenses must, however, be adjusted to the situation (see paragraph 561).

556. The defense must be **aggressive.** The counter-attack is the decisive element of defensive action. It is impossible to hold any defensive system by a merely passive resistance. The defense as well as the offense must act by **movement** as well as by **fire.**

Unless all unit commanders seize every opportunity for counter-attack, the attacking force must eventually succeed in driving the defenders out of their positions.

557. The defense must be **flexible.** The dispositions dictated by a stabilized situation are not adapted to the first contact of opposing forces nor to the moving warfare consequent on the break-up of stabilization. In stabilized warfare, the large force of artillery which the attacker can mass to support his attack requires thinly held front lines and such distribution in depth that concentrated targets will not be offered to hostile artillery. In the war of movement, neither this mass of artillery nor the unlimited supply of ammunition will be available, and inability of our own artillery to recognize and shell the hostile lines will increase the importance of the action of the infantry in resisting the attack. The front lines may and should be therefore more densely held.

Under different situations and at different stages of the occupation of the same position, defensive dispositions will present wide degrees of variance.

The defensive organization will tend toward the line or an area depending on the relative importance to be attached to frontal field of fire and hostile artillery fire effect. It is the task of the commander to adapt his dispositions to the situation with which he is confronted.

558. The **tactical principles of open warfare** must be the basis of the organization of units for defense. Whatever elaboration the stationary character of operations may at any time permit, must not disrupt this organization or produce tactical groupings which will be dissolved the moment the enemy effects a rupture in the defensive dispositions.

Any defensive disposition that presumes the indefinite continuance of stabilized conditions is necessarily defective.

2. ORDERS

559. The general principles of these regulations relative to the character of orders for the attack apply in large measure to the defense (see paragraphs 337-342). Due, however, to the more complete organization of which defensive action is capable, orders may go into greater detail as to the defensive conduct of units than in the case of the attack. But the temptation to concentrate all initiative in the hands of higher commanders and to build up an elaborate system based on the technique of the various weapons and the several arms must be strenuously resisted. Such a system will dissolve the moment any rupture in the defensive system occurs and will render a rapid change to the offensive impossible. Tactical unity must be the basis of defense as well as of offense.

See Pg 14 - Field Fortification Manual

3. SELECTION OF THE POSITION

560. Regard being had to the special requirements of any situation, the material factors that exercise the greatest influence on the selection of a defensive position are the **communications to the rear** and the **facilities for observation.** The features of the terrain that control these factors determine the *general lie* of the defensive position.

Local circumstances determine the more exact location of the position (field of fire, cover, etc., see paragraphs 563-567).

561. The depth of the defensive zone is dependent on the tactical situation, which under all circumstances is controlling. Where a violent bombardment by massed hostile artillery must be reckoned with, the depth of the position must be sufficiently great to force the enemy to scatter his fire over a wide area and so minimize its effects that he will be unable to neutralize the entire defensive system by his preparatory fire. In addition, a second position at such distance from the front line (6,000-8,000 yards) that it cannot be taken under fire by the artillery firing on the first position will generally be organized. This will be the most usual disposition in position warfare.

When less weight is to be attributed to the factor of artillery bombardment, the defense will concentrate its means in a shallower zone in order to avoid undue dispersion of its forces and exposure to defeat in detail. The main defense will be made on a *line* of resistance. In rear of the line of resistance and within supporting distance from it, a reserve line, designed to limit the effect of a hostile penetration of the line of resistance,

may sometimes be organized. This will be the most usual disposition in open warfare, where the attacker will not have at his disposal the mass of artillery, the unlimited supply of ammunition, or the exact knowledge of the defensive dispositions and of the location of his own attacking infantry that will usually be available in position warfare.

562. The value of frontal field of fire varies between wide limits, depending on the situation. A long frontal field of fire usually carries with it exposure to hostile view and hostile artillery fire. In the early stages of an engagement in open warfare, however, before the attacker has been able to acquire exact information as to the defensive dispositions and to mass the fire of his artillery against them, the importance of opening fire on the advancing troops at long range and subjecting them to demoralizing losses during their advance, will outweigh these disadvantages. Since at this stage of defense, all infantry fire is necessarily frontal, the initial deployment for defense should as a rule be made with a view to the development of maximum frontal fire effect.

The close approach of the attacking forces deprives the advanced defensive position of an extensive frontal field of fire and consequently increases the importance of flanking action. Rearward defensive lines may retain the full value of frontal field of fire. During a prolonged contact of the opposing forces, the more exact knowledge acquired by the attacker of all defensive dispositions exposed to direct observation and the mass of artillery which he can assemble to support his attack, may, however, neutralize the advantage of an extensive frontal field of fire for all defensive lines within range. It may therefore be necessary to sacrifice frontal field of fire in order to escape direct hostile observation; the loss is compensated for by the organization of a dense flanking fire with automatic weapons.

The importance of flanking fire increases with the decrease in frontal field of fire, *i. e.*, in direct ratio with the proximity of the enemy.

It also increases with an increase in the intervals between supporting points (see paragraphs 564 and 582).

The above considerations determine the order of construction of the elements of a defensive position (see paragraph 578).

563. Figure 4 shows the advantages and disadvantages of the various sites for lines of defense; the site to be selected will vary according to the relative weight to be assigned the various factors of the situation, which are in the main: field of fire, artillery support, hostile artillery fire effect, concealment of

defensive dispositions, protection of communications to the rear, and observation of the foreground of the position.

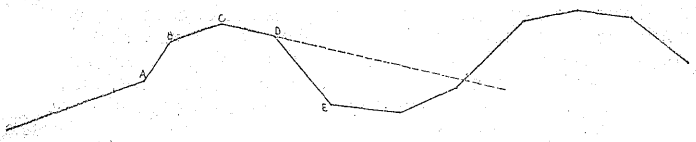


FIG 4

(*a*) At *A* (foot of forward slope), there is an extensive field of fire and grazing fire effect. The hostile ground is well observed, and artillery support is good. However, hostile artillery sees the trench *A* and the ground *A*-*B*-*C*. The enemy can direct accurate fire on the position and effectively support his infantry. Communications and the movement of troops in rear of the position are difficult.

(*b*) At *B* (military crest), there is a good field of fire and distant observation, but artillery support is very difficult on the slopes in front of *B*. Field artillery can effectively reach the slopes close in front of the advance line only by batteries placed in flanking positions. Moreover, hostile artillery readily sees the trench *B* and the ground *B*-*C*. The slope *A*-*B* permits the enemy to support his infantry to within a very short distance of the trench *B*.

(*c*) At *C* (topographical crest), there is distant observation, but the field of fire *C*-*B* is usually short. All terrain in rear of *C* is concealed from hostile observation. Communications are protected. Artillery support on the terrain *C*-*B* is very difficult as this terrain is seen only from *C*.

(*d*) At *D* (reverse slope), distant observation of the enemy is entirely lost. The field of fire *D*-*C* is short, but there are no difficulties of close artillery support. The enemy has distant observation from *C*, but beginning at *D*, the terrain has a large dead angle screened from enemy observation. Hostile artillery will have difficulty in firing on the slope *D*-*C*.

(*e*) At *E* (foot of reverse slope), there is the benefit of good support by artillery, and on the other hand, hostile artillery support will be difficult. All ground in rear of *E* is subjected to hostile observation and fire.

No absolute rule as to which position should be occupied can be prescribed. It will sometimes be advisable to establish

the line of resistance on the reverse slope with a line of observation on the forward slope or to place the line of resistance on the forward slope (foot of forward slope or military crest) and a reserve line on the reverse slope.

A reverse-slope position can as a rule be effectively defended only when points affording the observation required for the effective action of the supporting arms of the defense are retained and those giving views into the defensive dispositions are denied to the enemy. Such a disposition permits of the full development of the fire of the supporting arms of the defense and reduces the effectiveness of the fire of the supporting arms of the attack. When a reverse-slope position is held, the loss of frontal field of fire must be compensated by the organization of a dense flanking fire by automatic arms. The supporting arms must be able to prevent the enemy from occupying the crest in front, or the infantry must be capable of at once ejecting by counter-attack any hostile element which succeeds in effecting a lodgment on it.

The conditions required for the effective defense of a reverse-slope position will often be difficult to realize.

4. DEPLOYMENT FOR DEFENSE

564. A position should not as a rule be defended by an occupation in uniform density along the entire front, but rather by holding in strength the tactical localities which constitute the key-points of the position and by providing for the main defense of the intervals between such points by flanking fire and counter-attack. The key points of a defensive system are, in the main, points that control the communications of the defense and are therefore indispensable to the sustained progress of the attack (road centers, villages, etc.), and the features of the terrain which afford extensive views either into the defensive position or over the foreground. Features of the terrain that afford cover or concealment or good fields of fire and flankings constitute minor tactical localities.

By strongly holding these tactical localities as supporting points, the defense aims to limit the hostile penetration of its position and overwhelm the penetrating elements by counter-attack at a time when they are at a relative disadvantage in respect to supporting fire and to communications and supply. The superiority of the defense in this respect should be pronounced since the penetrating force will have lost in large measure the support of its artillery and will dispose only of

such communications as it is able to improvise in the stress of battle while the supporting fire and the communications of the defense are unimpaired.

If the defender succeeds in holding the flanks of the gap so strongly as to resist all attempts to widen it, it will be difficult for the attacker to maintain himself in the deep salient with a narrow base which the penetration has created.

565. The line of resistance is the line which must be held by the troops assigned to the defense of the position. It is not essential that the actual resistance be offered *on* the line of resistance; the defense may sometimes be most effectively made over a zone of resistance in which the actual line of resistance is included, and combat delivered in and about the assigned line for its possession. The conclusion of the engagement must in any case find the assigned line of resistance in the possession of the defending force. When a position is to be held by the defense of a zone, the lines to be held by each of the echeloned elements must be clearly defined in orders of the proper commanders.

Resistance is therefore offered on a series of tactical localities organized as supporting points, and separated by such lateral intervals and echeloned in such depth as circumstances of the particular situation may require.

The assignment of a line of resistance defines the mission of the defending force.

566. The troops of the defense are disposed in a depth varying with the tactical situation. The objects to be accomplished by the distribution in depth are:

(*a*) To provide security and gain time for manning the defenses of the main line of resistance;

(*b*) To avoid concentrations which would expose the defensive forces to excessive losses and neutralization by hostile fire;

(*c*) To limit the effect of surprise attacks and to permit the offering of lines of resistance to a flank as well as to the front.

567. When the main defensive position is preceded by an outpost zone, the larger infantry units, regiments and brigades, are generally deployed in sectors extending over both zones, battalions and smaller units over one zone only. The deployment in depth is, however, dependent on the frontage assigned to the unit; units assigned a narrow frontage deploy in relatively great depth.

When the defensive organization comprises one zone of resistance only, each battalion in the first line furnishes the outguards for its own front.

Unity of command and tactical control exercise an import

ant influence on the nature of the deployment. A unit assigned to an area in which the depth as compared with the frontage is very great is more effectively controlled by disposing the component units in depth (in column), while in the inverse case, control is more effectively insured by disposing them abreast.

568. Whether disposed over one or two zones, combat under any particular situation is delivered for the defense of one main line of resistance only. Where two zones are held, no doubt must exist as to the zone in which the principal resistance is to be offered. When the principal resistance is not to be offered in the advanced zone, the function of the first-line units is that of an outpost, *i. e.*, the security of the command, the repulse of minor attacks and raids, and the prevention of the occupation of the foreground of the position by the enemy. The strength of the outpost should not exceed that required for the security of the combat troops. The outpost holds its position in case of attack unless a withdrawal is ordered by higher commanders.

Under circumstances where an overwhelming bombardment of the position may be expected, the line of resistance is held by the defense of a zone in which the resisting elements are disposed in echelon (checkerboard formation), each flanking the front or covering the flanks of the others (see paragraph 619). Whether the position is held by defense on a line or over a zone, the aim in either case must be the same : to unify all means of defense and to avoid dispersion of effort.

Distribution in depth does not imply dispersion of force. The successive elements of the defense must be within supporting distance of each other. Supporting distance is such as will permit of effective support by fire and counter-attack.

569. Units assigned to the defense of any position are generally deployed in two echelons : a holding garrison designed for the immediate defense of a portion of the position and a support or reserve which has the mission of counter-attack or of reinforcing the holding garrison.

When defenses are distributed over a considerable depth, extreme localization of supports will often be necessary ; a platoon will frequently hold out a support.

570. When troops are deployed over two zones of defense, units in the outpost zone are deployed into supports (security echelon) and a reserve. Units in the battle zone are deployed into a combat echelon and a reserve; the echelons are similarly designated when deployed on a single line or over one zone of defense.

571. The strength of the forces held in reserve depends upon the character of the defense, whether passive or seeking a decision. In a defense of either character, the total strength of the forces assigned to purely holding missions remains practically constant; the character of the defense is indicated by the strength of the reserves. In a passive defense, the forces available for counter attack are made large enough only for expelling hostile troops which may penetrate the position, while in the defense seeking a decision as large a counter-attacking reserve as possible is held out with a view to striking a telling blow and winning a decisive victory.

In a passive defense or delaying action, supports and reserves may therefore be relatively weak.

572. Contact detachments, including machine guns, are assigned the mission of reinforcing the defense on sector boundaries and of maintaining tactical contact between adjacent units. They vary in strength from a squad to a company. These detachments are, where practicable, assigned a definite sector of defense. Their mission is either to counter-attack and drive out any hostile elements penetrating in their sector along the boundaries between units or to limit the effect of a hostile penetration by holding an oblique switch line connecting an advanced position with a rearward position on the flank; in either case, to protect the flank of the unit in case of hostile penetration of the adjacent sector. Contact detachments are usually detailed by battalions and larger units. They operate under the orders of the unit by which they are detailed.

573. The distribution of machine-gun units is dependent upon the tactical situation and varies with distribution of the troops which the machine guns support. When the main defensive position is preceded by an outpost zone, machine guns are not as a rule located in advance of the outpost line of resistance. A certain number participate in the defense of the outpost zone by delivering flanking fire through the intervals between supporting points or overhead fire from commanding positions in rear. The greater part of the machine guns are employed in the defense of the battle zone, and are distributed throughout the battle zone and over a limited zone of depth in its rear. When employed in the defense of a zone, machine guns are echeloned in checkerboard formation in such manner that each element flanks the front or covers the flanks of adjacent elements, and when practicable, is capable of delivering overhead fire over the defensive elements in its front.

The distribution in depth of machine guns decreases with the general contraction of the defensive zone. As the organization

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of the defenses approaches the linear, a larger number of machine guns are concentrated farther forward, and machine guns may be emplaced in or near the line of resistance. A considerable number should even in this case be distributed over a limited zone in rear of the line of resistance.

574. The machine guns form the skeleton of the defensive organization. They are so sited that as nearly as practicable, they cover the entire width and depth of the zone of resistance with continuous bands of fire. Infantry combat groups are so disposed that they cover the ground which is dead to machine-gun fire and are, at the same time, independently of the machine guns, capable of covering the field of fire to their front and in front of the intervals between them and adjacent combat groups. Light mortars are so sited as to cover dead ground in the bands of machine-gun fire or other important dead spaces, or to supplement the artillery barrage in case a barrage is contemplated.

While the automatic rifle is most effective when employed in a flanking direction and should be so employed when opportunity offers, it cannot, due to the absence of a fixed mount, be laid on a definite line of fire like the machine gun. The automatic rifle will not, as a general rule, be restricted to definite lines of fire; it will execute frontal fire on an enemy advancing directly toward it and flanking fire against troops advancing on adjacent units, as the occasion requires. It should always be so sited that it can deliver flanking fire across the front of the adjacent combat group.

The one-pounder gun is not assigned a definite zone of fire; it is rather employed as a weapon of opportunity against hostile tanks and machine guns. It is preferably emplaced where it can cover the principal approaches to the defensive position.

The assignment of attached artillery, machine guns, one-pounders, light mortars, etc., to battalions in the defense is made in accordance with the same general principles as in the attack (pars. 464,473, 531, 532).

575. Artillery units or single pieces are attached to infantry units and placed under the orders of the infantry commanders. Their missions are close support of infantry in defense, anti-tank defense, and accompaniment of counter-attacks. The principles of the employment of such artillery are in general the same as those of infantry batteries and accompanying artillery in the offense. During periods of stabilization, a certain proportion are held as silent guns, which open fire only in case of attack, against hostile infantry, machine guns, and tanks, while others are employed for daily firing on targets which are

particularly troublesome to the infantry. The divisional artillery retains responsibility for the supply of ammunition and stores to artillery units attached to the infantry. Attached artillery remains under the orders of its higher commanders for administration and discipline.

In the attachment and detachment of artillery units, orders must leave no doubt as to the commander under whose control they are to serve and as to the time when they come under and pass from his control.

576. In deployment for defense as well as for offense, the integrity of tactical units must be maintained. It is prohibited to segregate men of rifle companies into groups of specialists (auto-riflemen, riflemen, hand bombers, rifle grenadiers, etc.). Such groupings can only be effective so long as a stabilized defense can be maintained and will dissolve as soon as a rupture in defensive dispositions occurs or it becomes necessary to take the offensive. Infantry on the defense will fight as on the offense in combat groups of uniform composition (squads, sections, and platoons).

5. TACTICAL ORGANIZATION OF THE GROUND

577. In principle, infantry on the defensive intrenches. The extent of the defensive works depends upon the time available for their construction.

In the hasty occupation of a position, it is first of all important to locate the troops so as best to take advantage of the features of natural strength. Fortifications are constructed with a view to increasing the natural strength of the position as permitted by the time available.

578. The defense is made on a series of supporting points (linear or echeloned). In the initial deployment for defense, supporting points will be disposed in an approximately linear distribution. In a protracted defense, they will be echeloned in depth as well as in width. The organization of the supporting points themselves will also vary widely at different stages of the defense. At first, they will consist of simple lengths of trench sited for frontal and flanking fire and paralleled by cover or fire trenches for local supports and reserves. As soon as practicable, these are connected with each other by communicating trenches and developed into closed works capable of all-around defense.

The first immediate necessity in the construction of a line of supporting points is the front line with a continuous obstacle and cover for supports and reserves.

In a prolonged occupation of the defensive position, splinter and bomb-proof shelters are constructed, and numerous alternative combat emplacements are developed. Dummy trenches are constructed to divert the fire of hostile artillery.

579. In combat exercises when it is impracticable to construct the trenches appropriate to the exercise, their trace may be outlined by bayonets, stakes, or other markers, and the responsible officers required to indicate the profile selected, method and time of construction, garrisons, etc.

580. The distance between the several lines of trenches or combat emplacements parallel to the front should when practicable be such that :

(*a*) The garrisons of the rearward lines are able to cover by fire the flanks of the combat emplacements of the line immediately in front of them.

(*b*) The garrison of each rearward line does not fall within the zone of dispersion of hostile fire directed on the line immediately in its front, and friendly artillery can fire on hostile troops which have occupied one line without endangering our own troops in another. The safe zone of light artillery is 100 yards. That of heavy artillery is 300 yards.

(*c*) Rapid counter-attacks against the flanks of hostile elements penetrating the position are facilitated.

581. All lines should when practicable be sited and constructed with a view to recapture by counter-attack or to rendering them untenable to the enemy by fire from rearward lines.

582. The general direction of parallels and approaches is determined by the general direction of the front to be defended ; their site by the considerations set forth in paragraphs 561-565 ; their trace by the field of fire, frontal, oblique or flanking, to be covered.

In general, the trace follows the contour of the ground. Salients and reentrants are created only to the extent required for the efficient action of such flanking weapons as are to be emplaced in the trenches. As far as practicable, the natural salients formed by the ground forms are utilized as the flanking salients of field works.

The main flanking defense is furnished by weapons emplaced outside of the trenches. Machine guns are as a rule sited in positions detached from the trenches.

The most efficient flanking defense is rendered by weapons characterized by penetrating force and rapidity of fire (automatic arms).

Flanking defenses, in combination with obstacles that arrest the enemy under the fire of flanking weapons, are the principal

means of effecting the economy of force which is the essence of all defensive action.

The direction of fire of flanking defenses permits of their concealment from the direct frontal observation of the enemy. They therefore have the advantage of being able to act with the effect of surprise, in addition to the protection afforded by concealment. Since the conditions which make concealment from direct frontal observation a factor of the first importance are the same as those requiring great distribution in depth, the intensive development of flanking defenses is a distinguishing characteristic of the defense in depth.

Flanking defenses permit the defender to sacrifice *extensive* frontal field of fire. A line established on a reverse slope near the crest may become extremely strong due to good flanking defenses of the ground immediately in front of it.

The weakness of flanking defenses lies in their exposure to frontal attack. Their effectiveness therefore depends upon the efficiency of the frontal defensive elements. A position cannot be held by flanking defenses alone. If frontal resistance is destroyed, the flanking defenses must fall. Frontal and flanking defenses must mutually supplement one another.

583. The purpose of the *flank elements of field works* is to enable the garrison to offer lines of resistance to a flank as well as to the front. While in an initial deployment for defense, the construction of the frontal elements is of the first importance, provision must be ultimately made in the stubborn defense of a position for meeting an attack from a flank. The danger of disposing the defensive forces with a view to resistance of an attack from a preconceived direction must be avoided. Hostile penetration of an adjacent sector may radically transform the direction of the attack. Regard must also be especially had to this contingency in disposing the flanking defenses; flanking weapons are therefore as a general rule best disposed when they have a field of fire in as many directions as possible.

584. The purpose of parallels and approaches is to assure communications laterally and to the rear and to furnish combat emplacements on more or less extended lengths. The defense of intervals between combat emplacements is assured by the flanking fire of the combat groups holding these emplacements and of combat groups and machine guns situated to the rear. The combat emplacements should be selected with this end in view.

585. Approach trenches connect the various parallels with each other and the rear. In siting approach trenches, the advantage to be gained by incorporating them into the defensive

system as lateral lines of defense should be considered (Figure 4a).

586. Obstacles should be organized as soon as possible in order to hold the enemy under the fire of the defenders as long

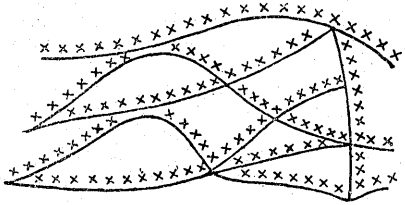


FIG. 4a.

as possible. Obstacles are of no value unless they are thoroughly swept by fire. A combination of obstacles and fire is equivalent to an increase of fire power.

587. In general, obstacles are employed for two purposes :

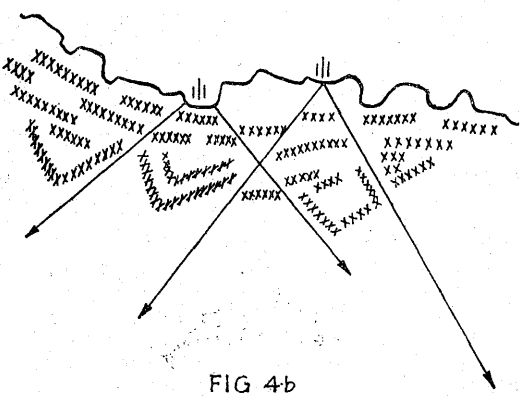


FIG 4b

(*a*) To prevent a sudden irruption of hostile forces into the front line of defense ;

(*b*) To hold the attacking forces as long as possible under the flanking fire of automatic weapons.

The general lie of obstacles therefore depends upon the flankings. The plan of obstacles and the flankings should be considered at the same time.

588. By a proper coordination of the flankings and the obstacles and a suitable arrangement of gaps, attempt should be made to canalize the attacking troops into certain avenues of approach where they will come under the destructive fire of machine guns (Figure 4b).

589. Command posts should be selected with a view to observation. They should if practicable be so situated that commanders have an uninterrupted view forward, backward and to the flanks, to the next higher command post, and over the foreground, and can keep up communication by messengers. In addition, special observation stations should be established on the commanding points of the terrain in such manner that the entire foreground and all ground within the position itself is in under constant observation.

6. CONDUCT OF THE DEFENSE

590. The conduct of an outpost as an agency in the service of security of the defense is described in Chapter IX of these regulations.

591. While the hostile attack is developing, patrols in front of the line of observation delay and harass the enemy while retiring on the defensive position. Especially strong patrols with machine guns operating well to the front may be assigned this mission. By their fire and their movement in retirement, if practicable in conjunction with dummy works, they endeavor to deceive the enemy as to the defensive dispositions, lead him in a false direction, and cause him to deploy prematurely and on incorrect lines. They occupy successive positions on commanding ground and take advantage of every opportunity to open a heavy surprise fire on formed bodies of hostile troops, without, however, permitting their retreat to be cut off.

592. While the engagement between the covering detachments of the two opposing forces is developing, long-range artillery opens fire on hostile communications, road centers, and other sensitive points in the zone of the attack. As the attacking troops approach more closely to the defensive position, field artillery, machine guns, one-pounders, and light mortars open fire on the advancing infantry and on located or suspected assembly points of reserves.

593. Infantry opens fire on favorable objectives at mid range. Such fire cannot, however, have any further effect, in addition to the losses which it inflicts, than to delay the defender's advance. The attack will always succeed in reaching assaulting distance from the defensive position, either under the cover of darkness or of fog or under the protection of its own fire. The delay effected will, however, gain time for the defense to perfect its dispositions and reinforce the threatened point.

594. When the front and direction of the hostile attack has been determined, the defense at once takes steps to meet it. Fire on the advancing infantry is continued, the outguards are withdrawn, and the defense on the threatened front is reinforced. The reinforcement does not as a rule provide for an increase in the number of men assigned to the holding garrisons; it is generally applied to the reserve. The result of the reinforcement is to increase the force designed for aggressive action rather than that intended for merely passive defense. Against minor attacks, the reinforcement may be effected by transferring the reserve of adjacent units to the threatened sector.

595. When the assault forms up at close range to the front line, the outguards set up the appropriate signal (rocket) for annihilating fire from the line of observation in case they discover a hostile concentration for attack in their front. In case the plan of defense contemplates an artillery barrage, they similarly set up the signal for artillery barrage either from the line of observation or when close enough to the line of resistance to insure their not being cut off by the friendly barrage. Outguards repel hostile patrol enterprises on the line of observation. Where the defense is made on two zones of resistance, the outpost repels minor attacks and raids on its line of resistance.

596. In order that the hostile attack may be prevented from reaching the line of resistance, the defense must gain and maintain fire superiority over the attack. In defense, fire superiority is obtained, not by the volume of fire, but by a well aimed and well directed fire, which inflicts losses on the enemy and causes his fire to become inaccurate.

597. As a general rule, the defense cannot gain fire superiority by virtue of superiority in the means which it puts into action. The ability to attack as a general rule presupposes superiority of means on the part of the offense. The defense must rely for fire superiority on the more methodical organization of its fire, especially its flankings, more accurate knowledge of ranges and of the terrain, the protection afforded by intrench-

ments against hostile fire, the concealment of its dispositions, and the disorganization which movement and the accessory defenses produce in the attacker's dispositions.

598. During the advance of the attacking troops, the artillery and machine guns, using direct or indirect fire, subject the hostile infantry to a destructive fire. The infantry batteries, trench mortars, one-pounders, and machine guns open fire on hostile infantry and its accompanying weapons, machine guns, automatic rifles, and tanks.

599. At night or in a fog, the flanking fire of the machine guns constitutes a vital element in the defense of a position. As these weapons can be laid on their lines of fire by day, they retain their full accuracy in night firing. A single machine gun can by flanking fire repel the most determined assault against the front which it covers. At night or in a fog, the holding garrisons of supporting points should be considerably reinforced.

600. Rifle grenades or hand grenades are used against hostile troops which have taken cover and cannot be reached by direct fire; and in repulse of night attacks.

601. A unit intrusted with the defense of an area or a position must under no circumstances abandon it unless it has been authorized to do so in certain contingencies by higher commanders.

602. During the assault, adjacent units support each other with flanking fire. Should the assault succeed in reaching the defensive position, riflemen leaping on the parapet meet the enemy with the bayonet.

603. Should the enemy succeed in penetrating the position, the defender should aim to strengthen the flanks of the gap and maintain his hold on the tactical localities (supporting points) on either side of the gap, resist all attempts to widen it, and counter-attack on the flanks of the salient rather than to attempt to close the gap by throwing troops across the head of the salient. For this reason, the organized areas held by units of varying importance which constitute the tactical localities of the defense, should have lines of resistance to the flanks similar to those to the front. From these lines of resistance, the garrisons of the organized areas take the penetrating elements under a destructive flanking fire, arrest their progress, and prepare and support the counter-attack.

604. Every infantry unit should take immediate advantage of any gap occurring behind a hostile force which has succeeded in penetrating the defensive position, to filter groups or units through the gap with a view to building up a strong point in the

enemy's rear. The demoralizing effect of fire from the rear will often produce important results.

605. If the enemy is defeated, he will be in no position to withstand a determined counter-offensive. The defensive must be prepared at all times to change to the offensive and exploit the results of successful defensive action.

7. COUNTER-ATTACK

606. The counter-attack should be made vigorously and at the proper time. It will usually be made :

By launching the reserve against the enemy's flank when the attack is in full progress ; this is the most effective form of counter-attack ;

Straight to the front by units in the first line with their supports after repulsing the enemy's attack and demoralizing him with pursuing fire ;

Or, by the troops in rear of the first line when the enemy has reached or penetrated the position.

607. Every unit at once expels by counter-attack any hostile force penetrating its area, zone, or sector, unless a withdrawal has been authorized by higher commanders.

608. Counter-attacks include :

Immediate counter-attacks by infantry only (front-line troops, local supports and reserves).

Counter-attacks with artillery preparation or accompanied by tanks or infantry guns (sector and general reserves).

609. Counter-attacks against an enemy who has penetrated the position should be launched as soon as possible before the enemy has had time to organize the ground.

610. Units held in reserve for purposes of counter-attack should be assigned a definite place for formation for counter-attack, and approaches to the advanced positions carefully reconnoitered.

8. DELAYING ACTION

611. When a position is taken merely to delay the enemy and withdraw before becoming too closely engaged, the important considerations are :

If the position is taken up on open ground, the enemy should be forced to deploy early, in order to permit of a timely withdrawal. The field of fire should therefore be good at distances

from 500 to 1,200 yards or more ; a good field of fire at close range is less important ;

The ground in rear of the position should favor the withdrawal of the first line by screening the troops from the enemy's view and fire as soon as the position is vacated. Exceptionally favorable conditions in this respect may make extensive field of fire less essential (*e. g.* as in woods).

612. On open ground, the defense is made by groups holding the natural strong points of the terrain, separated by considerable distances. Supports are needed chiefly for the protection of the flanks of the strong points. Reserves should be posted well in rear to assist in the withdrawal of the first line. Infantry batteries and single guns, and machine guns are especially valuable to a delaying force.

9. POSITION WARFARE

613. The general principles of defensive combat apply to the defense in position warfare. The chief peculiarities of the defense in position warfare are those due to the length of time the opposing forces remain in contact prior to the stage of decisive action. Every feature of the defense which in open warfare can only be covered by general instructions is intensively organized in position warfare.

614. The chief characteristics of the defense in position warfare are :

(1) The intensified development of all defensive works made possible by the length of time available ;

(2) The vast amount of artillery of all calibers, ammunition, and other matériel which the stationary character of operations permits the opposing forces to assemble ;

(3) Consequent necessity for the distribution of the defensive forces in great depth, in order to avoid offering concentrated targets to the attacker's artillery ;

(4) Superorganization of the service of information by means of permanent observation posts and aerial photography and consequent necessity for careful masking of all constructions ;

(5) Possibility of the accurate registration of fire on objectives, which, in conjunction with the unlimited supply of ammunition, permits of the use of defensive barrages, annihilating fire on specified areas, harassing fire, interdiction fire, etc.;

(6) Detailed organization of all defensive action.

615. The defensive dispositions in position warfare comprise :

(*a*) A first position, organized in depth and preceded by an

outpost zone when the main line of resistance is not located in the advanced zone of the position. This position will be on the ground where contact has already taken place with the enemy.

(*b*) A second position, chosen and occupied under the protection of the first and sufficiently distant from it to insure that it cannot be taken under hostile artillery fire at the same time as the first. Intermediate positions are organized throughout the zone of depth between the two positions.

(*c*) Switch positions are organized for the purpose of maintaining the continuity of the front in case the enemy breaks through at one or several points. Switch positions are oblique to the front and usually follow the natural contour of the ground. They serve as bases for counter-attack as well as to limit the effects of a hostile penetration.

616. The troops assigned to the defense of the first position comprise :

(*a*) The outpost (when an outpost zone is held) ;

(*b*) The combat troops ;

(*c*) The reserve.

617. The line for the defense of which resistance is to be made is defined in the orders of higher commanders.

618. As a general rule, the second position is not permanently occupied. It will usually be sufficient to have a certain number of reserve units near enough to assemble at the position in case of an alert. Special units are permanently designated for switch positions during an alert.

619. The defense cannot be successfully made on rigid lines of trenches. Any position that is once located can be knocked to pieces by the expenditure of sufficient ammunition. The defensive organizations must therefore be distributed over areas of such extent that they cannot be destroyed or neutralized by hostile fire. Combat groups and machine guns are distributed in checkerboard fashion, occupying inconspicuous points of the terrain and located within supporting distance from each other. Well defined targets must in no case be offered to hostile fire. Isolated woods, farms, etc., which will be subjected to heavy hostile fire should be avoided. The visible lines of the defensive system must not reveal the defensive organization. The more numerous the defenses of all kinds, the more widely they are distributed over the ground, the more effective their concealment from the enemy's air and ground observation, the more difficult it will be for the enemy to detect the most important points and to concentrate his fire on them.

620. The defense must be based upon the foreknowledge that all trenches will be subjected to the hostile preparatory

bombardment. Losses will therefore often be much slighter if the troops are posted in open ground or in shell holes. The trenches and fortified points will then absorb the hostile fire and mislead the enemy. Combat emplacements should be selected for all units on these principles. Such emplacements may be to the front, to a flank, or as far as the nearest supports, to the rear, into areas which are less exposed to hostile fire.

621. The principal purpose of the trenches is in general to serve as avenues of communication and protection against weather in quiet periods. They are none the less important. Without them, the fighting capacity of the troops falls off rapidly, and the service of supply becomes very difficult.

622. The only forms of protection against fire, of permanent value, are dugouts and concrete shelters of sufficient depth or resistance to withstand high-power artillery. Deep dugouts in the front lines do not permit of the prompt egress of troops, and in case of attack, become mere man-traps. Concrete shelters in the advanced zone should be constructed wherever practicable.

Dugouts and concrete shelters are an essential means of conserving the fighting capacity of the troops. Effort should be made to accomodate all reserves in shell-proof shelters. Dugouts or groups of dugouts should enable troops to be accomodated by complete units in order to facilitate command and supply.

623. The commander of each unit prepares a plan of defense and a plan of work which he transmits to his successor when relieved.

624. Special forms of increased readiness for action are provided in case indications of a hostile attack are observed. The measures to be taken comprise :

(1) Outpost and combat troops occupy their combat emplacements.

(2) Men engaged in special tasks or temporarily detached report to their units.

(3) All observers occupy their posts.

(4) Work in the battle and outpost zone ceases.

(5) Reserves (troops at rest) stand in readiness to move ; wagons are loaded and horses are harnessed.

(6) All means of communication are tested and telephones are manned by officers.

Special dispositions in case of fog must be taken. The number of sentries is increased, runner chains strengthened, and the outpost garrison if necessary reinforced.

10. ANTI-TANK DEFENSE

625. When an attack by tanks in force must be reckoned with, special measures for anti-tank defense are necessary. These comprise :

(*a*) Anti-tank redoubts ;

(*b*) Tank traps, mines, barricades, and other obstacles.

626. Anti-tank redoubts are usually strong points of the general system of defense, especially equipped with the means of anti-tank defense and constructed with especial view to checking the advance of tanks.

The special armament of an anti-tank redoubt comprises machine guns using armor-piercing projectiles, light artillery pieces, and one-pounders.

The redoubts are located along the approaches most favorable to the advance of tanks. In the distribution of anti-tank defenses, the fact that marshes, watercourses, thick woods, and very steep slopes constitute obstacles to the advance of the tanks should be considered. A stream with a firm bottom is no obstacle unless the water is at least 4 feet deep. A deep swamp or a stream with a soft bottom is an effective obstacle.

627. Tank traps, mines, barricades and other obstacles should be so located as to be under the close-range fire of the defense. Obstacles may be constituted by damming brooks so as to form marshes, making slashings across roads, placing tank traps at road defiles and along forest paths, or by barricading the exit of villages. Strong bridges may be destroyed and replaced when necessary by lighter bridges. Slopes should be cut with a sharp vertical wall at least six feet high in the direction facing the tanks and 10 feet in the opposite direction.

In order to constitute a serious obstacle in soft or medium ground, a ditch should be at least 14 feet wide and 8 feet deep. A ditch across a road is more effective if dug at points where the ground on either side of the road is not suitable for the passage of tanks. It may be lightly bridged to take horse traffic.

628. Machine guns open heavy fire on approaching tanks, especially against the aperture through which the operator directs the movement of the tank. Infantry takes cover from the view of tanks which have penetrated the position, so far as compatible with its mission, usually giving way to one side of the line of approach. It must be prepared to resume its combat emplacements immediately after the passage of the tanks and open fire on the hostile infantry which follows them.

11. THE PLATOON

629. In defense, a platoon of a first-line company may be deployed as an outguard (outguard platoon, picket), as a holding garrison on the line of resistance (combat or security platoon), or as a support (reinforcing or counter attacking platoon).

630. The conduct of an outguard is described in Chapter IX of these regulations.

Combat Platoon

631. Depending on the frontage assigned to it and the extent of the field of fire to the front, a combat platoon deploys for defense on one or two lines. The platoon will more frequently deploy on one line for defense than for attack. When the field of fire to the front is short and the attack can reach assaulting distance at short range under cover, deployment in two lines may be necessary. Deployment in two lines will also frequently be effective under conditions which favor the organization of tiers of fire. When deployed in two lines, the platoon can furnish protection to the flanks of the groups in the first line and offer lines of resistance to the flanks.

During continued occupation of the same position and upon approach of the enemy to close range, a change in dispositions in order to provide for all-around defense will usually be necessary.

632. The frontage assigned to the platoon may vary from 100 to 400 yards.

633. The fundamental principle of the defensive tactics of the platoon is that each section in the first line shall be so disposed as to cover its own front and flank the front of the adjacent combat group and the intervening interval; and each section in a rear line shall cover the flanks of the sections in its front and the intervals between them.

634. The platoon does not as a rule occupy its position with men spaced at equal intervals along the line. Sections, squads, and groups are located in such manner as to favor the development of frontal and flanking fire and cover the areas which are dead to the fire of the supporting machine guns.

635. The platoon leader locates the combat emplacements to be occupied by the several combat groups (sections, squads, etc.) of his platoon, in accordance with the captain's order. The method of deployment for defense will depend upon the

time available for the construction of the position. When immediate provision for cover is urgent, each combat group is deployed on the trace of its combat emplacement, and the construction of the positions commenced. A procedure of intensive digging is followed ; in each combat group, men are assigned tasks in pairs ; each man works at maximum capacity for periods of four or five minutes, when he is relieved by the alternate man of the pair.

Platoons must be trained in rapid deployment for defense as well as for offense ; squad and section leaders must be taught to dispose their units on the general defensive line of the platoon in such manner as to insure the maximum fire effect and the most advantageous use of cover.

When a more deliberate procedure may be followed, the platoon is divided into reliefs which are assigned definite tasks on which they work until completed, the remainder of the platoon being held in a position of readiness at rest (see Chapter VI).

The position must be so constructed that the platoon can cover with its fire all parts of the sector assigned to it and flank the front of adjacent units.

636. As soon as possible after the construction of the combat emplacements is completed, the platoon leader should take steps to connect them with each other and with those of adjacent units by communicating trenches. He should, as soon as possible, make provision for shelter of the platoon, affording at least protection against the weather and if practicable against the fire of light artillery (see Figure 16, page 57). The subsequent development of the position and the extent of the constructions will vary with the length of time the position is occupied.

637. In each combat group, auto-riflemen are so located that they can fire direct to the front and across the front of adjacent units (Figure 37, page 75). Hand and rifle grenades are used to cover any dead ground in front of the position.

638. The platoon leader ascertains the ranges to all prominent points in the foreground and prepares range cards for the use of his combat groups. He assures himself of the provision of an adequate supply of ammunition and makes provision for its storage (depots, niches).

639. The platoon leader familiarizes himself with the location and sectors of fire of the machine guns and light mortars covering his front and with the post of the nearest artillery observer.

640. The platoon leader establishes communication by

runner with the command post of the captain and with the leaders of adjacent platoons. He sends one runner to join the captain. He familiarizes himself with the most favorable points of observation in his own position and in those of adjacent platoons, and details an observing personnel as permanent in character as possible for the general observation service of his position. He familiarizes himself with the terrain in the foreground of his position and with the position of adjacent platoons. He instructs section and squad leaders and his men as to the details of the terrain (roads, villages, streams, ravines, woods, etc.), and informs them as to the location of platoon, company, and battalion command posts and the battalion aid station. When it is not necessary for all men to occupy combat emplacements continuously, he places such portions of his platoon as are not required for immediate duty at rest (in readiness) and maintains the readiness for action of his platoon by posting the necessary sentries. Each combat group must post at least one sentry (single or double) to insure prompt manning of its position in case of attack. One noncommissioned officer must constantly be on duty in the platoon. The platoon leader assures himself that each man is familiar with the emplacement he will occupy in case of combat or alarm and that the position can be rapidly manned.

Platoons in Support and Reserve

641. When support platoons and platoons of reserve companies are assigned to definite combat emplacements, their action is similar to that of combat platoons. They establish contact with the platoons in their front and on the flanks. When held in a position of readiness, they provide the necessary cover and take the necessary steps to insure their readiness for action (posting of sentries and lookouts, designation of assembly positions, etc.).

Position Warfare

642. When warned for duty in the trenches, the platoon leader inspects his platoon and assures himself that the arms, equipment, and clothing of his men are in proper condition and that the equipment of each man in respect to ammunition, reserve rations, and kit as prescribed by orders and regulations is complete and in proper condition.

643. The relief of troops in the trenches usually takes place at night. The platoon leader makes a personal reconnaissance by daylight of the position to be held by his platoon. Accompanied by a runner, he proceeds with the captain to the command post of the outgoing company, studies the plan of defense of the company area, and receives the explanation of the captain commanding the outgoing company. He then goes with his runner and a guide furnished by the outgoing company to the post of the outgoing platoon leader and sends back his runner to the captain and the guide to his platoon. He receives from the outgoing platoon leader an extract of the plan of defense of the company area pertaining to the platoon position. The extract comprises :

(*a*) For a combat platoon : the precise rôle of each combat group (for example to sweep a sector of the ground in front or to flank an adjacent element) ; detailed sketch of dispositions and of hostile trenches.

(*b*) For a support platoon : combat position in case of alarm, the support to be given or counter-attack to be launched, in the cases considered in the plan of defense of the company.

(*c*) The rôle of adjacent platoons, means of communication with them and with the captain.

(*d*) Plan of work.

644. Accompanied by the leader of the outgoing platoon, the platoon leader makes a detailed examination of the ground. He informs himself by personal inspection as to all the details concerning his position and those of adjacent platoons with whom he must maintain constant contact. He must be informed with regard to :

(*a*) Location of supporting trench mortars and their field of fire.

(*b*) Sectors of fire of machine guns covering his front and dead ground in same.

(*c*) Lie of friendly artillery and machine-gun barrage in front of his position and signals for starting and stopping the barrage.

(*d*) Lie of hostile barrage and gaps in same.

(*e*) Location, strength, and capacity of shelters.

(*f*) Defensive measures against gas attack and system of giving gas alarm.

(*g*) Location of nearest aid station and the route thereto.

(*h*) The accessory defenses and hidden passages through the barbed wire and gaps in enemy's wire.

(*i*) Conduct and habits of the enemy ; strength of hostile

obstacles; location of hostile posts, machine guns, and trench mortars; hostile patrol and mining activity.

(*k*) Location of nearest artillery observer.

(*l*) Points in trench system exposed to fire of hostile snipers.

(*m*) Arrangements for supply of water, small-arms ammunition, grenades, sandbags, wire, flares, etc.

645. When the platoon arrives, each combat group takes its place; the observers, the sentries, and the noncommissioned officer on guard proceed to carry out the orders for the night. In transferring his sector, the outgoing platoon leader is responsible that no man leaves his place until a man of the relief is posted and instructed as to all points in question.

646. As soon as he has taken over his position, the platoon leader reports that fact to the captain. When so instructed by his captain, the outgoing platoon leader orders the departure of his platoon.

Should the enemy attack during the relief, the outgoing platoon leader retains command.

647. The outgoing platoon makes its preparation for departure before the hour of the relief. All portable tools and camp matériel are taken. Grenades and cartridges in excess of the number prescribed to be carried on the person are left in the trench. The incoming platoon leader receives a list of trench stores on hand and checks up the stores transferred. The trenches, the shelters, and latrines are left absolutely clean.

648. The platoon leader informs his men regarding —

Their firing or assembly positions and duties in case of attack;

The position of platoon, company, and battalion command posts, the battalion aid station, and routes thereto;

Parts of trenches exposed to fire of hostile snipers;

Location of cartridge niches, grenade stores, latrines.

He inspects the position as soon as it has been manned by his platoon to insure that each section, squad, and group leader understands his orders and that all parts of the platoon are in readiness for defensive action.

649. As a general rule, unless obviously impracticable, the plan of defense in force at the time of relief should be continued in force during the first night of occupancy of the trenches. Based on his personal reconnaissance and observation, the platoon leader should as soon as practicable submit proposals to his captain embodying such changes in the plan of defense, in the location of combat emplacements, listening posts, patrol enterprises, employment of his own close-combat weapons (sniping, harassing fire), targets for artillery fire, etc., as the

situation may require. When necessary, he selects the combat positions outside the trenches (shell-holes, etc.) to be occupied in case of hostile attack and decides on the method of occupying them.

650. The platoon leader requires the platoon sergeant to keep a duty roster of the platoon. Details for carrying and ration parties, work, and other service, whether rendered in the area of the platoon or called for by higher authority, should be adjusted so as to allot periods of rest and of duty in an equitable manner. As a rule, each combat group details its own sentries; sentry details are made by the platoon only when all elements of the platoon are sheltered close together. Men are warned for duty and informed as to the hour when the duty is to commence. When practicable, notice boards are placed in each platoon trench on which are posted daily all orders regarding working parties and other orders affecting men in the platoon. The time at which they are to come on duty is stated.

651. One hour before daylight and at dusk, all officers and men go to their proper posts. At the afternoon formation, rifles, ammunition, and equipment are inspected, and the firing position of each man tested to see that our wire is covered. All gas-defense measures are inspected and alarm apparatus tested. At the morning formation, ammunition is issued, provided there has been any expenditure during the night.

652. The platoon leader holds practice alerts and gas alarms. By this means, he insures that a hostile attack always finds the platoon in readiness for action. The alarming of the platoon, the prompt issue of the troops from their shelters, the occupation of the firing or assembly position or preparation for counter-attack is practiced.

Increased readiness for action is necessary in case of fog or darkness. Prompt egress from the shelters and occupation of the firing or assembly positions is insured by posting sentries at the gallery entrances and requiring the garrison of the shelters to be assembled into groups under their squad or group leaders in the order in which they will issue from the shelter.

653. If the enemy penetrates the position of the platoon, it is the duty of the platoon leader on his own initiative and without waiting for orders to counter-attack and eject him from the position. If the enemy has penetrated into an adjacent area, the platoon must counter-attack with all elements not serving as a holding garrison.

654. The ability of the platoon promptly to meet a hostile attack depends on the efficiency of its sentries and observers.

They must if practicable give immediate warning of any indications of assembly of hostile troops for attack and set up the prescribed signal for delivery of annihilating fire by the artillery. In any case, they must give immediate warning when the hostile line shows itself and set up the prescribed barrage signal. The men must leave their shelters with rifles loaded and grenades ready before the enemy reaches our lines.

655. The platoon leader makes provision for heating the soup and the coffee (charcoal, solidified alcohol, etc.). He inspects the mess tins and takes all possible measures for the proper subsistence of his men. Ration parties carry back unserviceable material, empty cartridges, and the weapons of the killed and wounded and turn them in at the proper depot (see paragraph 689).

Cartridges not issued to men are stored in niches located at suitable points along the trench. Empty cartridge cases are collected in a platoon depot. Grenades and rockets are placed in sandbags in lots of 10-20 and stored in niches established at suitable points (vicinity of sentry posts, barricades, etc.). Tools and trench matériel not in actual use are stored in a small platoon matériel depot.

656. The helmet is always worn, and gas mask carried in the alert position. In a first-line company, the men are always under arms, tools on the belt, the pack, canteen, and blanket set in order in the shelter; rifles are not loaded, the magazine is filled, cut-off up, and safety lock at the ready. Rifles are cleaned and oiled daily and after a gas attack.

657. The routine duties of the platoon leader are:

Distribution and supervision of guard and labor duty of his platoon;

Development of his position in accordance with a progressive plan of work (trenches, accessory defenses, etc.);

Continuous personal reconnaissance of the hostile position;

Upkeep and improvement of shelters;

Holding of practice alerts;

Upkeep of alarm apparatus;

Provision for suitable storage of combat matériel;

Attention to maintenance in condition of arms, ammunition, tools, equipment, clothing, etc.;

Maintenance of cleanliness and sanitary condition of his area;

Supervision of proper subsistence of his men;

Replenishment of ammunition;

Daily inspection of position, arms, guard service, etc.

He at once communicates to the captain and adjacent platoons any change in his own or the hostile position.

658. The platoon leader keeps the platoon sergeant informed as to all the defensive measures of the platoon so that the latter may be able to take his place in case he becomes a casualty.

659. The duties of the platoon sergeant are :

To replace the platoon leader when the latter becomes a casualty ;

To familiarize himself with the plan of defense of the platoon area ;

To keep a roster of men for various duties ;

To supervise the assembly and assignment of fatigue parties ;

To allot men to shelters ;

In general, to supervise the interior economy of the platoon (subsistence, sanitation, care of equipment and stores, execution of standing orders).

12. THE COMPANY

660. A first-line company usually deploys for defense in three echelons: (1) an outguard; (2) combat or security echelon; (3) support.

It may deploy with an outguard varying in strength from a squad to a platoon, a combat or security echelon of two or three platoons, and one or two support platoons. The strength of the outguard largely depends on the facilities for observation; it will be greater in close country or at night than in open country or by day.

661. As a general rule, the outguards of the position are furnished by the first-line companies. A platoon is usually designated to furnish the outguards and patrols required for the front of the company. In some cases, two or three platoons may be deployed in depth abreast, each furnishing the outguards for its own front. The particular method to be employed will depend upon the facilities for communication between the line of observation and the line of resistance, and the frontage assigned to each platoon. Where the frontage assigned to each platoon is considerable and good approach trenches connect the line of observation with the line of resistance, the outguards may be furnished by platoons ; unity of command may sometimes be more efficiently served in this way.

Combat Company

662. The captain assembles his platoon leaders on the position to be occupied by the company ; states available information relative to the enemy and supporting troops and whether the front is protected by covering detachments ; points out the line of resistance, and the sections of the battalion and the company, and those of adjacent units ; indicates the location and sectors of fire of the supporting machine guns ; assigns platoons to the combat echelon or as supports and details an outguard ; assigns sections of the line of resistance to combat platoons and indicates the combat emplacements to be constructed and the location of cover trenches for supports ; prescribes such details relative to the trace of works to be constructed as may be necessary and practicable ; details working parties for construction of an obstacle in front of the position when such detail has not been made by the major, and for such other purposes as may be immediately necessary ; states the location of the combat train, the battalion aid station and his own combat post.

663. If practicable, the cover trenches for supports are so sited as to be capable of covering the flanks of the combat platoons and of eventually being connected with them by approach trenches so as to form a closed work capable of all-around defense.

The captain selects and fortifies an observation post giving him the best possible view over his position.

664. The captain supervises the construction of the fire trenches of the combat platoons. He insures that combat emplacements are so sited that platoons can mutually support each other by flanking fire and that all dead spaces in the bands of machine-gun fire are covered.

665. After the combat emplacements, cover trenches, and obstacle have been completed, the captain makes provision for the construction of approach and communicating trenches, connecting fire trenches with each other, with the support trenches, and with the trenches of adjacent companies. He prescribes the construction of such lateral lines of defense, including obstacles, as are necessary.

666. The post of the captain is usually with his support platoons or between them and the combat platoons.

Reserve Companies

667. When reserve companies are assigned to the defense of a reserve line, their action in deploying for defense and in

the construction of the position is similar to that prescribed for combat companies. Reserve companies are so disposed as to check and throw back by counter-attack hostile elements which succeed in penetrating the line of resistance. Captains reconnoiter the section of the line of resistance in their front and maintain contact with the captains of combat companies. They must be prepared to support the units on the flanks of the battalion as well as the first-line companies of their own battalion.

When held in a position of readiness, measures must be taken to insure the prompt assembly of reserve companies in case of hostile attack (posting of lookouts, designation of assembly places, etc.).

Position Warfare

668. The provisions of these regulations relative to the conduct of the platoon in position warfare apply in large measure to the company.

669. The captain prepares the plan of defense of the company area with a sketch of his dispositions and copies of orders for the combat groups. He selects the officer on watch and prescribes the patrolling to be carried out. He selects and fortifies an observation post and details a permanent observing personnel for manning it. He maintains communication with the major and adjacent companies by visual signaling, runner, or other method. He maintains communication with his platoons by runner. He keeps in personal touch with trench-mortar and machine-gun units covering his position. He sees that all concerned are familiar with the method of calling for barrage and insures close contact between his observers and the forward observers of the artillery in his area.

670. The captain studies the possibility of the execution of raids against the hostile position and makes proposals regarding them and the support required (artillery, machine-gun, trench-mortar) to the major.

671. The captain makes plans for employment of his support platoons for counter-attack under various assumptions as to hostile penetration into his area or the area of adjacent companies. The supports must be so located that they can advance against the point of penetration without loss of time. The counter-attack should if practicable take the enemy in flank. Depending on the circumstances, it may be made through the trenches or over open ground.

672. Barrage fire is requested by the command post (telephone, rockets) as soon as it is informed of the launching of a hostile assault. In default of other information, the captain and the major ask for barrage and launch the counter-attacks as soon as they perceive that the range of hostile artillery has been lifted.

673. The captain makes daily inspections of his sector, corrects deficiencies, and sees that all leaders are familiar with their duties in the execution of the plan of defense. He holds the officer on watch responsible for the efficient performance of the guard duty of the sector and requires him to make frequent inspections to insure the vigilance of sentries and their familiarity with their duties.

13. THE BATTALION

674. The battalion is usually reinforced for defensive combat by a machine-gun company, one or more sections of light mortars and one-pounders, and one or more light-artillery pieces.

675. When the deployment is not covered by other troops, the major details a covering detachment (march outpost) to protect the occupation of the position, or directs the companies to send out outguards or patrols.

676. When practicable, the major, accompanied by the captain of the machine-gun company, determines on the sectors of fire of the machine guns and fixes their location in such manner that they cover the entire front of his position and flank the front of adjacent units with continuous bands of fire and are at the same time capable of delivering long-range overhead fire over the combat echelon. He determines on the general lie of the obstacles in such manner as to arrest the hostile attack under the flanking fire of the machine guns. He determines the natural strong points of his section and fixes the combat emplacements of his first-line companies accordingly.

The major assembles the captains of his companies on the position, communicates the information obtained regarding the enemy and supporting troops, indicates the line of resistance and the sections of the regiment, the battalion, and adjacent units, and the location and sectors of fire of supporting machine guns ; designates companies as combat companies or reserve, assigns them to sections of the battalion position or positions in readiness, and indicates the combat emplacements to be constructed. He prescribes the direction toward

which the trenches should face or fixes their direction by the assignment of sectors of fire to the combat companies. He prescribes such details relative to the trace of field works as the time available may permit and situation requires. He prescribes the location of one-pounders and artillery pieces and assigns them missions as required by the situation. He fixes the location and field of fire of the light mortars in such manner as to cover the dead spaces in the bands of machine-gun fire and other important dead spaces. He details working parties for clearing the field of fire, the construction of the obstacles, his message center, command post, and observation post, and such other purposes as may be immediately necessary. He details the necessary carrying parties and states the location of the combat train, ammunition and supply depots, battalion aid station, and his own combat post or message center.

677. The major supervises the construction of the position. He insures that the combat emplacements of the companies are so constructed that they cover the dead spaces in the bands of machine-gun fire and that they mutually flank each other and the front of adjacent units. He details such parties from the reserve companies to assist in the construction of the works on the line of resistance as are not required for the construction of cover for the reserves. When provision has been made for the construction of the most essential features of his position, he details further working parties for the construction of approach trenches to his combat companies. He prescribes the construction of such dummy trenches as the situation permits.

678. When natural cover for the protection of reserves is not available and it is necessary to construct cover trenches, such trenches should when practicable be so constructed as to form a reserve line on which penetration at isolated points may be checked.

679. In addition to their flanking field of fire, machine guns should when practicable be so sited that they can take the attacker under fire at long range. Positions which permit of long-range fire from concealment (thickets, etc.) are especially favorable as they prevent the premature destruction of the machine guns by hostile artillery. A certain proportion of machine guns should if practicable be echeloned in depth in rear of the line of resistance in such manner as to be able to take hostile elements penetrating the line of resistance under flanking fire and deliver long-range fire over the line of resistance or through the intervals between supporting points. Alternative positions should be selected. In order that the fire of

the greatest possible number of machine guns may be concentrated at any point on the front of the position, they should be so sited that they have as large a field of fire as possible.

Infantry groups are detailed when necessary for the close protection of machine guns.

It will often be advantageous to place the tracing of the obstacle in front of the position under the direction of the captain of the machine-gun company.

680. The major establishes a visual central in the vicinity of his message center and insures that companies establish connection with it. He maintains communication with his companies and with adjacent units and the rear by visual signaling, runners, mounted orderlies or cyclists and such other means as may be furnished him.

681. The chief mission of the reserve companies is to support the combat troops by counter-attack in case of penetration of the line of resistance. A definite place of formation for counter-attack should be assigned them and the best approaches to the front carefully reconnoitered. In order to insure the timely intervention of reserves, it may sometimes be advisable to assign each reserve company a definite sector against which it will launch its counter-attack without waiting for orders, in case of hostile penetration.

682. The regulations governing ammunition supply in offensive combat (paragraphs 479-484) apply in principle to the defensive. The relative absence of movement on the defensive permits, however, of the establishment of depots of ammunition and other supplies. Such depots are established in the fighting emplacements of platoons and at the battalion ammunition and supply point. During combat, ammunition and other supplies are transported to combat companies by carrying parties attached to combat battalions from the regimental reserve. During periods of stabilization, carrying parties for ammunition, rations and supplies may be detailed from the battalion reserve. In all cases, the battalion is responsible for the delivery of supplies from its depots or supply point to its combat companies.

Position Warfare

683. The battalion may be employed as first-line battalion, second-line battalion or reserve.

684. A first-line battalion is employed as an outpost battalion or combat battalion, depending on whether the principal resistance is to be offered in the advanced zone or in the zone

of the battalion in second line. Depending on the same condition, the second-line battalion is employed either as a combat battalion or as support to the first-line battalion.

When it is not intended to offer the principal resistance in the zone of the first-line battalion, it will frequently be advisable to withdraw one or two companies of the battalion and place them at the disposition of the commander of the combat troops or in reserve.

685. The higher command determines the zone in which the principal resistance is to be offered.

First-line Battalion

686. When employed as an outpost, the first-line battalion is deployed into support and reserve companies. Support companies (security echelon) furnish the outguards (pickets, sentry squads, cossack posts) and patrols for the front of the battalion. When employed as combat battalion (main line of resistance in advanced zone), the first-line battalion is deployed into combat companies and reserve.

687. The major of the first-line battalion supervises the service of information in his sector. He insures the prompt release of the barrage, the alarming of all parts of his battalion and the second-line battalion, and notification to the colonel and adjacent sectors in case of hostile attack.

688. An artillery representative acts as advisor to the major in artillery matters and arranges for the cooperation of the supporting artillery. He maintains communication with the artillery commander by the use of his own personnel and matériel. The major insures prompt reports from his subordinates with a view to bringing down artillery fire on transient objectives (working parties, reliefs, etc.). He holds practice alerts to insure the readiness of his battalion in case of gas or other attack. He orders such patrolling and organizes his observation service in such manner as to assure himself of constant accurate knowledge of the hostile position and hostile activity. He maintains close contact between all parts of his position and with adjacent sectors. He directs the development of the position in accordance with the plan of work established by the colonel. He is responsible for the maintenance and replenishment of the ammunition supply in his battalion. He inspects his area and assures himself as to the efficient performance of duty of all parts of his battalion.

689. The supply officer of the first-line battalion is responsible for the delivery of rations from the company kitchens to the platoons of the first-line companies. He is in charge of

the company kitchens of the first-line companies and is furnished details for carrying parties from the battalion reserve or other rearward echelon.

Second-line Battalion

690. When employed as support to the first-line battalion, it is the duty of the battalion in second line in case of hostile penetration of the advanced zone to eject the enemy by immediate counter-attack without waiting for orders. The major reconnoiters the advanced zone with his captains, familiarizes himself with the details of the position, acquaints himself with the lay of the hostile barrage and the principal shelled areas and determines the best approaches to the advanced zone. He is responsible that the counter-attack is delivered before the enemy is able to establish himself in the captured position.

691. In order to insure prompt launching of the counter-attack, it will frequently be necessary for the major to assign to his captains zones of action within which they are responsible for the prompt delivery of the counter-attack without orders from the major.

After the delivery of the counter-attack, the major takes steps to reorganize his battalion and redistribute it in depth.

Reserve Battalion (at rest)

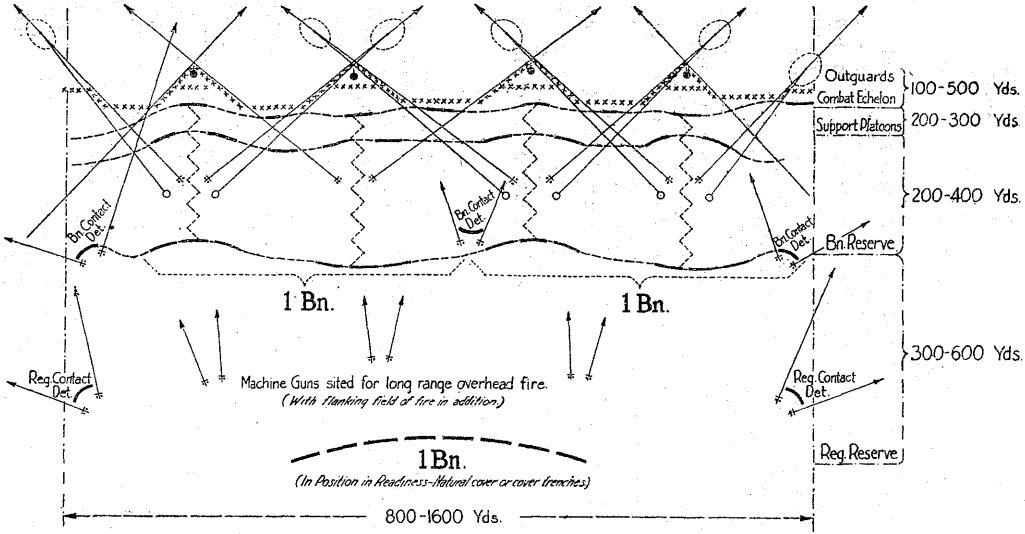
692. The reserve battalion utilizes the period of rest for the physical refreshment of the men, overhauling weapons and equipment, and instruction. The major makes detailed provision for the alarming and formation of the battalion in case of hostile attack (see paragraph 624).

14. THE REGIMENT

693. The regiment deploys for defensive combat with one or two battalions in first line and two or one battalions in reserve (Figure 4c). Exceptionally, all three battalions may be deployed abreast.

694. The attachment of machine-gun companies, light-mortar and one-pounder sections, and artillery pieces to battalions is made in accordance with the same principles as in the attack.

695. The colonel designates his battalions as combat battalions and reserve. He assigns sections of the line of resistance to his combat battalions and positions in readiness to reserve



INITIAL DEPLOYMENT OF REGIMENT IN DEFENSIVE POSITION

(Schematic-Nature of deployment controlled by ground and situation)

LEGEND

Combat Emplacements.
M.G Emplacements with direction of fire
Light-mortar with beaten zone.
Communication Trench
Outguards.
(One pounders not shown; employed as anti-tank guns, etc)

FIG. 4C

battalions. He details contact detachments for reinforcing the defense on the boundaries of his sector. He details such working and carrying parties from his reserve to assist in construction of works on the line of resistance and approach trenches as are necessary and not required for the construction of cover for their own protection. He locates his observation station, message center, and command post, and establishes communication (telephone, buzzerphone, runners, etc.) with his battalions and adjacent units. He employs his pioneer platoon for the construction of observation posts and shelter for his message center and command post. He allots matériel and personnel of the pioneer platoon, attached engineer units, and signal troops to his battalions. He supervises the tactical disposition of the troops and the construction of the position. He arranges for the support of the divisional artillery. He directs and supervises the service of supply of the regiment, and establishes depots of engineer matériel, ammunition, and other supplies. He establishes the regimental first-aid station.

696. When the front is not covered by other troops, the colonel prescribes such distant reconnaissance and details such combat patrols as may be necessary. He prescribes the construction of dummy works to be located in advance of the position.

697. Engineer troops assigned to a position work under the direction of the local commanders (regimental and battalion).

698. The responsibility of the regiment in respect to medical service and evacuation is in principle the same as prescribed for the offensive (paragraph 507). The organization of the medical service comprises : (1) local aid posts (about 1 litter squad) for the front of each combat company, near the support platoons ; (2) battalion aid stations near the battalion reserve ; (3) regimental aid station. All aid stations should be near the principal outgoing route of their unit. The local aid posts transport casualties to the battalion aid stations ; the regimental sanitary personnel from the battalion aid station to the regimental first-aid station.

Position Warfare

699. The colonel draws up the plan of defense of his sector. It is his duty to develop the sector for combat, shelter, and the maintenance of the health of the troops. He draws up a plan of work which he turns over to his successor on relief. He regulates internal reliefs within his regiment in accordance with

the arduousness of the service and with a view to maintaining the maximum fighting efficiency of the regiment.

700. The colonel prepares maneuver grounds, obstacle courses, and target ranges near the shelters of his resting battalion, and supervises the instruction of resting troops. He devotes especial attention to the instruction of his officers and noncommissioned officers and prepares tactical exercises for the troops, giving especial attention to exercises in open warfare.

701. When the regiment is deployed over two zones of resistance, the colonel fixes the boundaries between the zones of the first and second line battalions. All machine guns, light mortars, and one-pounders in the zone of each battalion are under the orders of the corresponding battalion commander.

702. The colonel fixes the direction of circulation in his sector by the designation of in and out trenches.

15. THE BRIGADE

703. The provisions of these regulations relative to the deployment of the brigade for attack apply in principle to the defense.

704. The brigade commander assigns missions (sections of line of resistance or sectors of his defensive area) to his regiments, allots them the necessary quotas of auxiliary troops, and retains a reserve (infantry, machine guns, etc.) under his direct control and prescribes its location. He details contact detachments for the purpose of reinforcing the defense of the position on his sector boundaries. He supervises the tactical dispositions of the troops and the construction of the position. He maintains close contact with the divisional artillery with a view to effective artillery support of the defense of the position. He requires commanders of reserve units to make detailed reconnaissance of the position and that of adjacent units in order to insure their effective intervention when their support is called for. He employs his reserve machine guns and attached artillery in support of the combat troops. He orders such distant reconnaissance and combat patrolling as the situation may require. He locates his observation station, message center and command post, in such manner as to permit of the most effective observation and communication during combat. He must at all times be in such close touch with his reserve that he can engage it in a timely manner. He maintains close touch with the division at all times.

16. MISCELLANEOUS

705. The regulations for intercommunication on the offensive (paragraphs 521-528) apply in principle to the defensive. The means of intercommunication at the disposal of regiments is usually considerably reinforced by attachment of divisional signal troops and personnel, and wire communication is extended to include the battalion and if practicable the company.

The regulations relative to infantry and airplanes (paragraphs 550-551) in offensive combat apply also to the defensive.

CHAPTER VI. — FIELD FORTIFICATIONS

706. Infantry must be capable of organizing its own positions and of executing the field works necessary for their defense. The elementary requirements demand proficiency in respect to the following :

(*a*) Proper siting of entrenchments (**tracing of works**).

(*b*) Construction of fire trenches and communicating trenches (**standard profiles**).

(*c*) Employment of troops in the **execution of field works.**

(*d*) Construction of **trench accessories.**

(*e*) Rapid construction of **wire entanglements.**

(*f*) **Camouflage.**

707. The location, extent, profile, garrison, etc., of field works are matters to be decided by infantry commanders. Officers must be able to choose ground and intrench it properly. Engineer troops may be assigned to advise and assist in laying out and preparing the position, but infantry commanders are not thereby relieved from responsibility for the action taken in the organization of the position.

1. TRACE

708. The term trace usually designates the horizontal projection on the ground of the firing crest. The firing crest should be as nearly horizontal as practicable and should therefore generally follow the contour of the ground. Considerations of drainage will, however, require a slight departure from the contour (see paragraph 714).

The protection acquired by digging a trench should be increased by choosing a trace that will avoid enfilade fire, and by means of traverses. Traverses serve as protection against enfilade fire and limit the radius of action of shells bursting in the trench. The extent to which traverses are required depends upon the character of the trace (Figures 5-8), and the extent to which the trench is subject to enfilade fire.

2. PROFILES

709. The character of the profile of a trench depends to a great extent on the probable permanency of the projected work. Trenches which are to be utilized for a considerable

STANDARD TRACES

Full lines indicate trace for Type B Trench
Dotted " " " " " A "

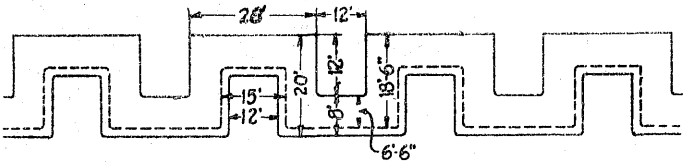


FIG 5
TRAVERSED TRACE

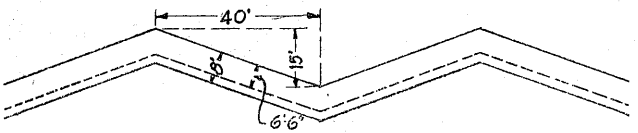


FIG 6
ZIG-ZAG TRACE

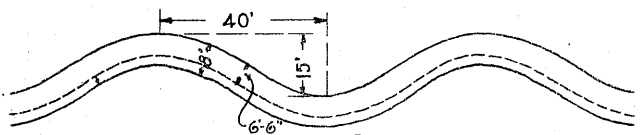


FIG 7
WAVY TRACE

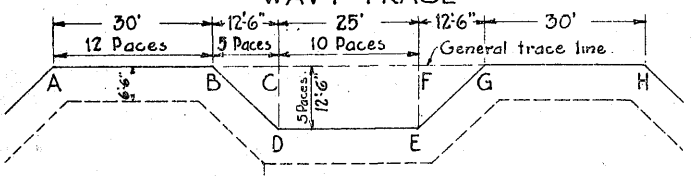


FIG 8
OCTAGONAL TRACE
(Method of Tracing indicated)

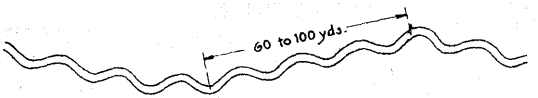


FIG 9
WAVY TRACE RIGHT
With both local and general irregularities



FIG 10
WAVY TRACE WRONG
No general irregularities

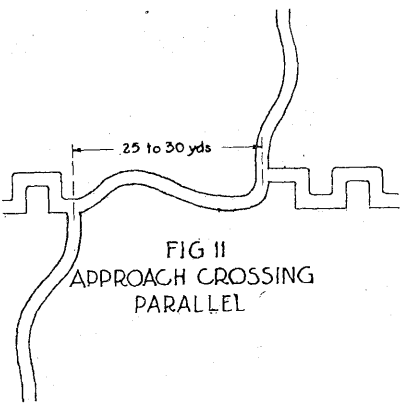


FIG 11
APPROACH CROSSING
PARALLEL

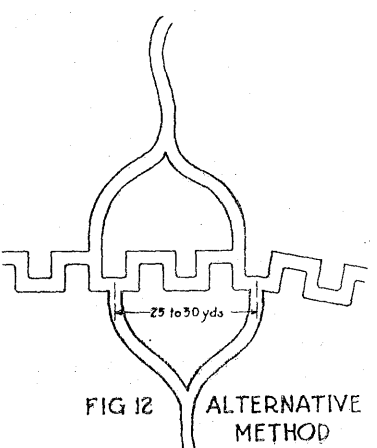


FIG 12 ALTERNATIVE METHOD

period should have a profile corresponding as nearly as practicable to the natural slope of the ground in order to reduce the amount of revetment required and avoid the caving in of the sides of the trench. In the construction of hasty cover, on the other hand, the object should be to obtain the most complete protection in the shortest possible time, and the slopes of the trench should be made as steep as the earth will stand and the width of the trench reduced to a minimum (Figure 12 a).

In permanent or semi-permanent works, **standard profiles** are necessary in order to permit of the construction at the rear of standard revetting matériel (*e. g.*, *A* frames, paragraph 730). The development of hasty cover into a trench of standard profile is shown in Figure 15.

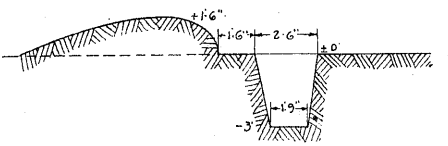


FIG 12a

710. The standard profiles for fire and communicating trenches shown in Figures 13-19 are based upon the following principles :

(*a*) The elevation of 4 feet 6 inches between the interior crest and the banquette affords a good firing position for a man of average height.

(*b*) During its construction, the trench may naturally be used to a greater or lesser extent, depending on the degree of completion. An excavation of 2 feet 6 inches, together with the parapet, gives a total cover of 3 feet, which is suitable for firing from a kneeling position. This, however, is only one phase of the construction ; except during a momentary halt, the final aim is always to make the trench suitable for firing from a standing position.

(*c*) The distance of 6 feet 6 inches between the interior crest and the bottom of the trench permits natural walking without being seen.

(*d*) The width of the trench at the bottom (2 feet) permits convenient circulation behind men on the banquette.

(*e*) The dimensions of the communication trench — 7 feet of

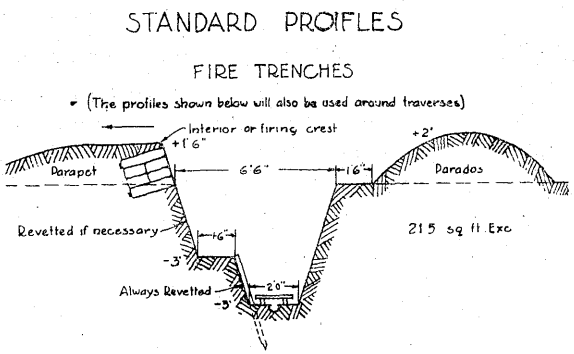


FIG 13 TYPE A
(For use without "A" frames)

total cover — permit convenient circulation with good protection.

(*f*) Berms are indispensable for preventing the sides from

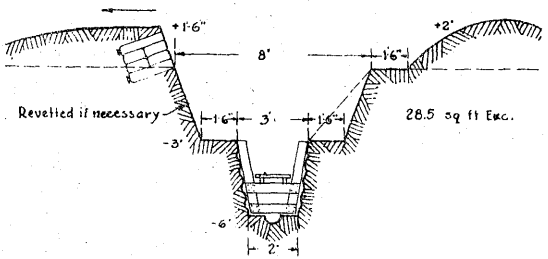


FIG 14 TYPE B
(For use with "A" Frames)

caving in under the pressure of the excavated material; a width of 1 foot 6 inches is the minimum.

The standard profiles will often be modified, particularly with reference to the following :

Decreasing the width thereby reducing the amount of excav-

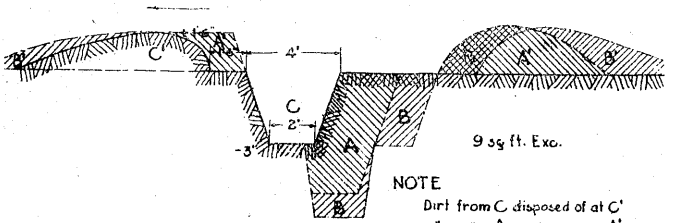


FIG 15
Simple Standing Trench
(Showing development into Standard
Fire Trench-TYPES A & B)

ation and increasing the protection for temporary or hastily constructed works ;

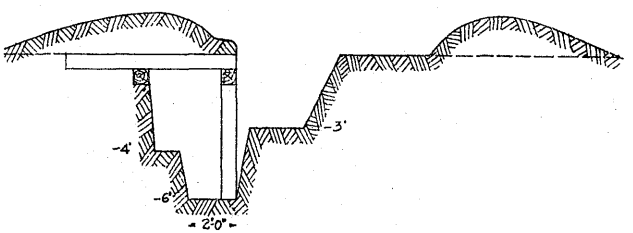


FIG 16
Standing trench with splinterproof

Increasing the relief of the parapet so as to have a better view from the trench ;

Decreasing the depth of the excavation (and consequently increasing the relief of the parapet) necessitated by the presence of water or rock near the surface ;

COMMUNICATION TRENCHES

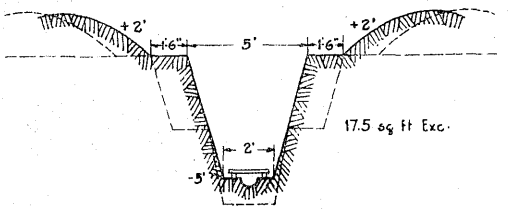


FIG 17 TYPE A
(For use without A Frames)
(Also shows development to TYPE B)

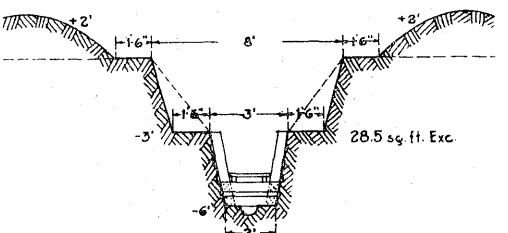


FIG 18 TYPE B
(For use with A frames)

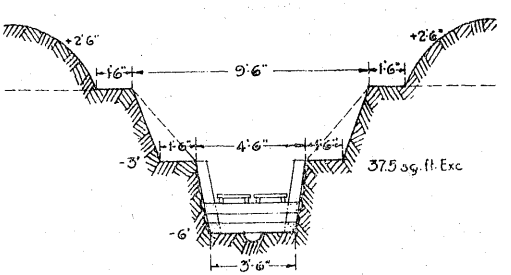


FIG 19 TYPE C
Broad Communication Trench

Decreasing the width in very hard soil, which permits the trench to have steep sides ;

Removing the excavated material from the edge of the excavation (trench without parapet, deep communication trench) or the use of an underground communication trench (Russian sap), where it is especially desirable to avoid being seen ;

Need of protecting certain parts of the communications from hostile view and fire (covered communication trench).

Using natural cover (ditches, slopes, shell holes, etc.) ;

Increasing the width of the evacuating (" out ") approaches and decreasing the width and depth of the secondary approaches.

3. EXECUTION OF FIELD WORKS

711. The execution of a field work comprises :

(*a*) Reconnaissance of the position ; (*b*) tracing on the ground of the lines which determine the horizontal limits of cutting and embankment, or establishment of trace by other method (*e. g.*, stakes, compass bearings, par. 722) ; (*c*) placing reliefs on the work ; (*d*) actual construction of the trenches.

712. The construction of a field work should be preceded by a reconnaissance varying in extent with time available and the tactical situation. The objects of the reconnaissance are : (*a*) to determine the field of fire which must be covered and the flankings ; (*b*) to determine the natural strong points of the position and the points of especial weakness ; (*c*) to fix the general location of the lines with reference to the field of fire and the flankings and the requirements of drainage ; (*d*) to compute the labor, tools and material required for the construction of the position. When practicable, a sketch should be prepared on the ground, showing the general location of the different lines, the observing stations and command posts, and other special works.

713. According to the situation, entrenchments are constructed either by **working along the line** or by **working from the ends.** The former method will generally be employed when not actually under fire. When exposed to hostile fire, the men dig in on the trace of the work so as to obtain cover in the most rapid manner possible and then work toward each other from the ends. Working from the ends is also resorted to in pushing out saps from an existing trench and in joining up sap heads so as to establish a new advanced parallel.

Working along the line

714. The trace is actually established with reference to the required field of fire by placing the eye at the level of the interior crest.

A tracing party for a field work to be held by a company should consist of an officer, a non-commissioned officer, and three or four men, equipped if practicable with white tape, stakes, and mallets. The tape is used to locate on the ground the intersection of the cut and elbow rest. As a general rule, only the firing bays are staked out at the preliminary tracing, intervals for traverses being left between successive bays. In leaving space for traverses, a minimum thickness of three yards

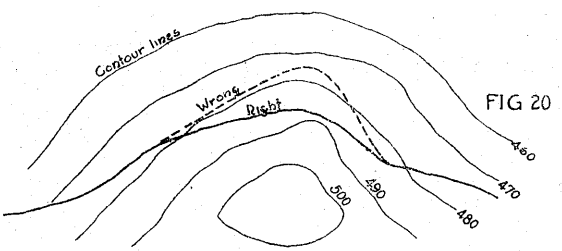


FIG 20

Siting trenches to eliminate low spots.

should be allowed. Where tape is not available, the trace may be marked with stones or stakes or by digging a small channel with a pick.

When practicable, both cutting edges of the trench should be traced.

When practicable, care should be taken to site trenches so that all parts can be easily drained toward natural points in the line, avoiding any unnecessary sag which will be difficult to drain later. Trenches should never run exactly along a contour line but should be given enough slope to carry the water in a prearranged direction. Trenches should not be located in marshy or boggy ground, unless it is absolutely unavoidable. Communication trenches should not be located in the bottom of valleys or gullies but should run along the side slope above the bottom. (Figure 20).

715. After the tracing has been completed, the work is divided into tasks by means of marks made on the ground with a pick. The length of tasks depends upon the method of grouping the working details. In easy soil, the proportion should be 1 pick to 2 shovels, and the working groups should be composed of three men each. In harder soil, an equal proportion of picks and shovels should be allotted, and a working group will consist of two men. Working groups of three men should be allotted about 15 feet of front, groups of two men about 10 feet.

716. The unit assigned to the construction of the work should, as far as practicable, be divided into reliefs on the basis of tactical organization. A company should, for example, be divided into two reliefs of two platoons each, or three reliefs of one platoon each reinforced by units of the fourth platoon. The amount of work to be done by each relief should be plainly indicated; officers and noncommissioned officers are responsible that the men do the quantity of work assigned them. As soon as any unit (squad, platoon, company, etc.) has finished its task, it should be relieved.

717. Tasks should be allotted in terms of volume of excavation. In the allotment of tasks, the following data may be taken as an approximate basis: The capacity of the average man for continuous digging does not exceed 80 cubic feet for easy soil, 60 cubic feet for medium soil, 40 cubic feet for hard soil. He will do three-eighths of this the first hour, five-eighths in the first two hours, and the other three-eighths in another two hours. When contact with the enemy is probable, tasks should be assigned which can be reasonably expected to be completed in a period of two hours in order to conserve the fighting capacity of the troops. For the first relief, the soil is apt to be loose and the lift is less, so that a slightly greater task should be given to it than to succeeding reliefs. Assuming men at 5-foot intervals, the number of hours work required to dig a trench is the section of the trench in square feet divided by 5 for easy, 4 for medium, and 2 1/2 for hard soil.

718. In the construction of trenches, arrangements for drainage should, when practicable, be made from the beginning. A drainage ditch or sump should be started before the digging of the trench commences, and the progress of its excavation maintained in advance of the trenches draining into it. The excavation of the trenches should be directed up-grade, when practicable, so as to avoid the formation of undrained pockets in the bottom of a partially completed trench. Gutters for

intercepting surface water and conducting it to the natura

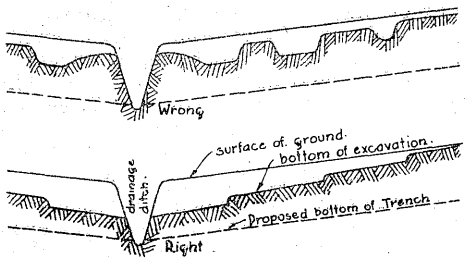


FIG 21

Longitudinal section of Trench under construction.
(Showing manner of excavating Trenches so as to insure proper drainage)

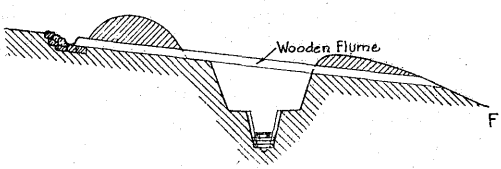


FIG 22

Surface water carried over the Trench.

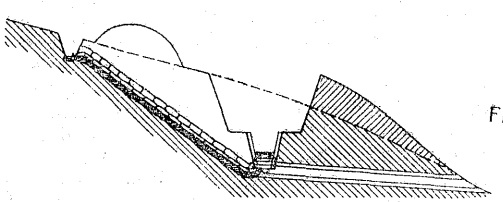


FIG 23

Surface water carried under the Trench.

water courses should be provided on the up-hill side of the trenches (Figures 21-23).

719. To place a relief on the work, the units constituting the relief approach the tools in column of files, rifles slung, and pass between the pile of tools, shovels on the right, picks on the left. Each man receives a tool as he passes.

The column proceeds to a flank of the trace of the work and

forms line parallel to and about three paces in rear of the rear cutting line, men at about 5 feet interval. This interval is most conveniently established by having men extend arms horizontally and touch hands. Each platoon is assigned a particular part of the line and goes to it and deploys independently. If the line is long, guides should be furnished to direct the head of each column to the point where its deployment is to begin. At night, guides must always be furnished.

720. As soon as the men are posted, the pick men start tracing the limits of their tasks (unless already marked), digging a small furrow along the white tape and then marking the lateral and rear limits. The men then strip the sod or spade off a slight thickness of earth from the width of the excavation. The sod may be used to form a mask or small parapet or laid aside for subsequent use in revetment or for sodding the parapet when completed. If it is necessary to provide cover rapidly, the men at once dig in depth so as to get some cover as quickly as possible. As a general rule, the excavation should be begun with a width slightly less than that desired. When completed, the walls are dressed up to the desired width.

When work is done at night in the presence of the enemy, men must keep absolute silence, lie down immediately on the ground when a rocket goes up, and resume their work when the light has disappeared.

Separate working groups should be assigned to the construction of the trenches around traverses. Unless labor is abundant, their construction should generally be deferred until the fire bays are completed.

Working from the Ends

721. Working from the ends is a slow operation, but it permits working at points and at times when working along the line is impossible. The construction may be accelerated by : (*a*) doubling the working parties (shifts working at high pressure and relieving each other at frequent intervals, *e. g.*, every yard of trench) ; (*b*) by working in two stages (*i. e.*, one group digging to a certain depth, followed by a second group excavating to full depth).

In zones swept by hostile fire, working along the line and working from the ends are employed alternately. The following examples illustrate the application of this method of work :

(*a*) We hold the front *A B* and wish to establish ourselves at *C D* (Figure 24). It is assumed in this case that working along the line is impossible during the day but may be carried

out at night, and that working from the ends is possible during the day.

The work may be executed as follows :

First night : constructing, by working along the line, the

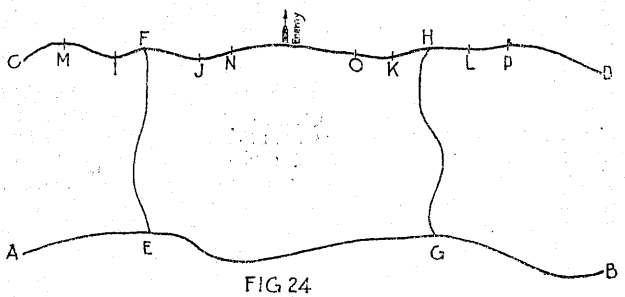


FIG 24

approach trenches *E F* and *G H*, and the elements *I J* and *K L* of the parallel.

First day : continuing the work of the first night by constructing the elements *M I*, *J N*, *O K*, *L P* (working from the ends, 4 shifts).

Second night : constructing the element *N O* (working along the line).

Second day : continuing the work of the second night.

(*b*) As another example, we desire to construct an element

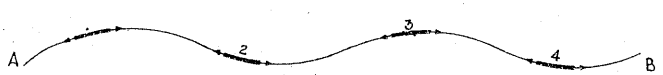


FIG 25

of a parallel or of an approach trench *A B* (Figure 25) on ground where working along the line is too dangerous, even at night.

The procedure is then as follows : instead of beginning work on the entire length *A B* at the same time, we begin with small groups, such as squads, separated and working at 1, 2, 3, and 4. These groups dig themselves in as rapidly as possible by working along the line. Once they have a sufficient cover, each group separates into two parts which work at both ends of the excavation (working from the ends) under the cover already dug.

722. When working from the ends in one stage, the method of work is in general as follows :

Each working party consists of one noncommissioned officer,

leader of the party, and 4 workmen grouped into two shifts which relieve each other every yard. For continuous work, night and day, the working party should comprise 1 sergeant, 1 subordinate leader, and 12 men, thus providing three reliefs of 8 hours each.

In each shift, No. 1 is the digger and No. 2 the shoveler ; at each shift, they change their posts, No. 2 becoming No. 1, and vice versa. No. 1 is supplied with a short-handled pick mattock, a short-handled shovel, and measuring sticks for testing work. No. 2 is supplied with an ordinary shovel. The working party is, in addition, provided with 1 extra pick, 1 extra shovel, and 5 stakes.

The sergeant in charge of the party sees to it that the trace is followed and that the dimensions are correct.

When beginning work, each shift marks with a stake the spot at which it is to begin.

If the excavation has not been marked out beforehand, the

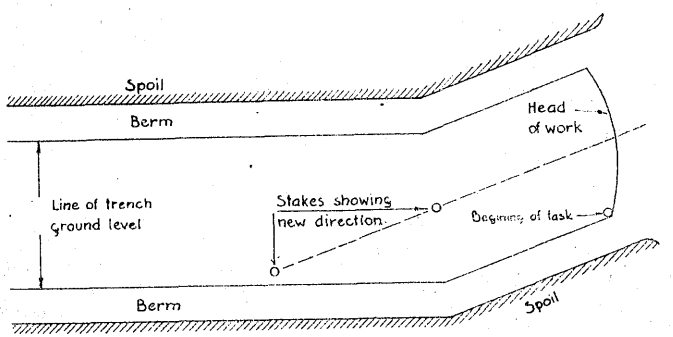


FIG 26

sergeant marks out the center line of the element to be constructed by means of stakes set at the bottom of the trench (Figure 26).

No. 1 (digger) works at the head of the excavation. He digs it to the final width and depth. First, from a squatting or kneeling position, he digs two grooves to the depth of the pick-blade half-way up the excavation, keeping in line with the two walls and preserving the banquette, if it is to be a fire trench ; he then digs away the earth between the two grooves with the pick ; he passes the earth between his legs by means of the short-handled shovel and scrapes the bottom so as to keep the trench

at the correct depth. He then digs the upper part of the trench by marking two grooves, right and left, up to the surface of the ground, digs away the earth thus undermined with his pick and passes it to the rear as described above.

He thus advances by elements of 1 to 1 ½ feet, and at intervals, verifies the dimensions by means of the notched stick.

No. 2 (shoveler) throws the earth on both sides and is careful to leave the berms.

Nos. 1 and 2 may exchange posts at the middle of the task.

When in danger of enfilade fire, it is necessary to protect the head of the work by a head parapet of sandbags, gabions, or metal shields. These are placed about 1 ½ feet in front of the head of the work by Nos. 1 and 2 and are pushed forward by hand or with the tools as the work progresses.

As soon as one shift has finished its task of one yard, the

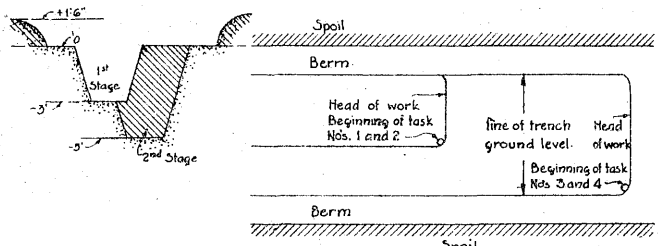


FIG 27

sergeant in charge of the work orders, " Change, " and the shift lays down its tools and is replaced by the second shift.

Working from the ends in two stages is executed in accordance with the following method (Figure 27) :

Each party consists of a noncommissioned officer in charge of the work and 8 men, divided into two shifts which relieve each other every yard. When the work is to be continued day and night, the working party should comprise one sergeant, one additional leader, and 24 men, thus providing 3 reliefs of 8 hours each.

In each shift, the men are numbered from 1 to 4 ; Nos. 1 and 3 are diggers, and Nos. 2 and 4 shovelers ; at each shift, Nos. 1 and 2 change posts with Nos. 3 and 4.

Nos. 1 and 2 work at the head ; they dig the first stage 3 feet deep. They have the same tools as Nos. 1 and 2 in the case of working in one stage. No. 1 is, in addition, supplied with a measuring stick.

Nos. 3 and 4 work three yards behind the head of the work ; they deepen the first stage to the correct depth and widen it. They distribute the excavated material on both sides, being careful to leave berms of the correct width (1 foot, 6 inches). No. 3 is equipped with a pick mattock and a measuring stick ; No. 4 with a shovel. Each working party is, in addition, supplied with 1 extra pick mattock, 1 extra shovel, and 5 stakes.

4. ACCESSORIES OF TRENCHES

Revetment

723. Revetment comprises any artificial means provided to cause earth to stand at a slope steeper than it would naturally assume.

It is used in the construction of parapets, trenches, and other field works. Its too extensive application is objectionable on account of the great amount of time, labor, and material required, and can often be avoided by widening and sloping to a safe angle the sides of existing trenches as well as by the provision of berms or shelves at various levels (see Figures 13-19 for trench profiles requiring little revetting).

724. The main principle in revetting trenches is to revet only the lower two or three feet. This portion of trench is seldom injured by the enemy's fire, while higher revetting requires more time, labor, and material, and will almost certainly block the trench if damaged by shell fire. High revetment should be limited to the repair of damage to the trench.

725. The best method of revetting trenches is :

(*a*) Use standard *A* frames, spaced 3 feet center to center and supporting sheets of corrugated iron, expanded metal, planks, or brushwood (Figure 30).

(*b*) If *A* frames are not available and the soil permits, the revetment may be supported by means of pickets driven into the bottom of the trench and braced as shown in Figure 31.

(*c*) The sides of the trench above the revetment should be cut to a slope of about 3/1, leaving a berm of 18 inches on each side at the foot of the unrevetted slopes.

The order in which the revetment of trenches should be undertaken is as follows (Figures 13, 14, 18) :

(*a*) Revet the *fire step* and the interior slope of the *parapet* in fire trenches.

(*b*) Revet the lower two or three feet in communication trenches.

(*c*) Revet the lower two or three feet of fire trenches above the fire step, if necessary.

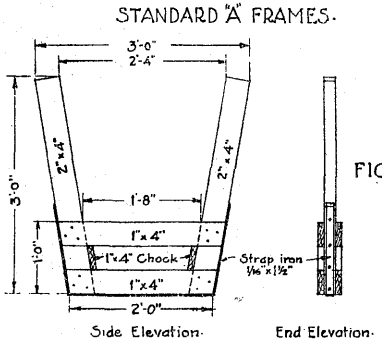


FIG 30

STANDARD "A" FRAME
Spaced 5' center to center

726. There are two general types of revetments :

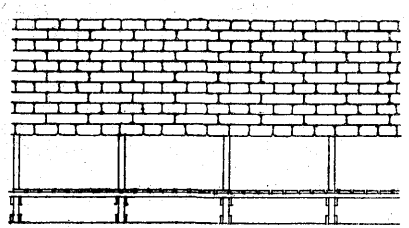
(*a*) The *retaining wall* type, which is self-supporting and is best suited to *fills*.

(*b*) The *superficial* type, which must have independent supports and is best suited to *cuts*.

Retaining Wall Type

727. As revetments of this type must be self-supporting, they should always take the form of a properly built retaining wall, *i. e.*, the thickness at any level should be at least one-half the remaining height and the average thickness not less than one-third of the total height.

728. *Sandbag revetment* is easily and quickly constructed, gives no splinters from shelling, and is especially useful for



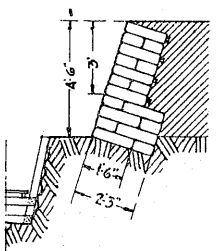


FIG 28

SANDBAG REVETMENT CORRECT METHOD

emergency work, for repairs, and for crowning. In laying sandbags, attention should be paid to the following points,

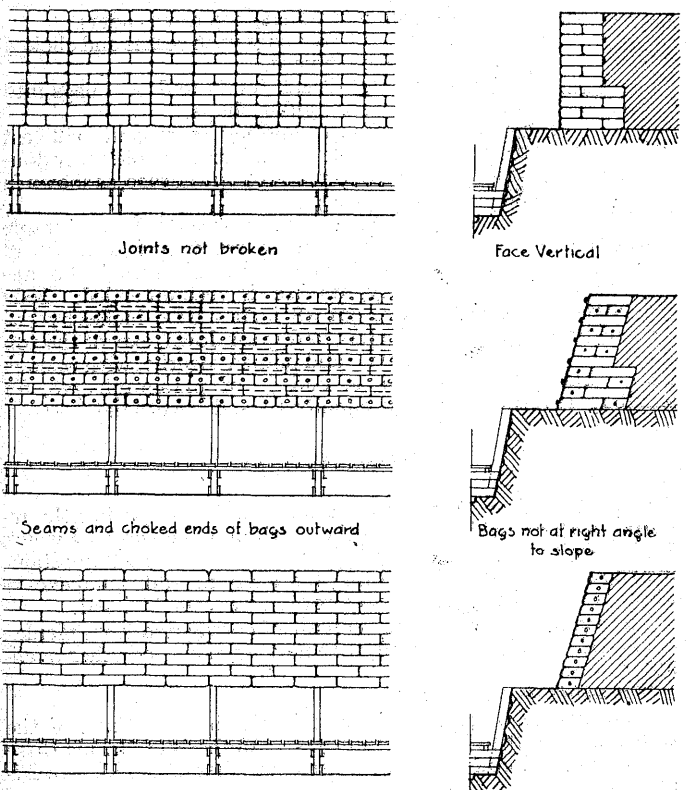


FIG 29

SANDBAG REVETMENT INCORRECT METHOD

some of which are illustrated in Figures 28 and 29.

(*a*) Tuck in bottom corners of bags before filling.

(*b*) Fill bags uniformly about three-quarters full.

(*c*) Build revetment at slope 4/1.

(*d*) Lay bags with beds perpendicular to slope.

(*e*) Lay bottom row as headers on prepared bed, intermediate rows alternating headers and stretchers, top row headers.

(*f*) Lay bags with seams and choked ends inward.

(*g*) Break joints and beat bags into a rectangular shape.

(*h*) A sandbag revetment will last much longer if netting, preferably doubled, is placed over the face, as shown in Figure 32.

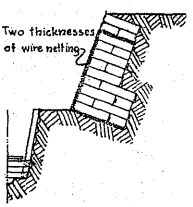


FIG 32
SANDBAG REVETMENT REINFORCED

729. *Sod revetment* is more durable than sandbag revetment, and where sod can be obtained in sufficient quantity, its use is recommended. Sods are cut 18 inches by 9 inches by 4½ inches, laid grass down, except the top layer, and pinned together with wooden pegs. The principles *c*, *d*, *e*, and *g*, of paragraph 728, for snadbag revetment, apply equally to sod revetment.

Superficial Type

730. This form of revetment consists of two parts : the *revetting material* which retains the earth and the *supports* which hold the revetting material in place. It is most useful in retaining the slopes of trenches, since practically no additional excavation is needed to afford space for the revetment itself.

The *revetting material* may consist of corrugated iron, planks, expanded metal, brushwood, wire netting, poles, or other available material.

The *supports* may be :

(*a*) *Standard A frames*, for use in the bottom third of the trench as described in paragraph 725. Methods of placing these frames around corners in traversed trenches are shown in Figure 34.

(*b*) *Anchored revetting pickets*, for use in revetting front slopes of fire trenches or in other special cases where high revetment is required.

Revetting pickets should be from 3 inches to 3 ½ inches in diameter, straight, pointed at the small end, and driven into the ground from 1 to 1 ½ feet.

Anchor stakes should be driven firmly into solid ground 8 to 10 feet from the edge of the trench, staggered so as to avoid a plane of weakness parallel to the trench, and inclined so as to be perpendicular to the direction of pull on the anchorage wire.

Anchorage wires should pass at least 4 or 5 times between picket and stake. Each time, take a round turn around the top

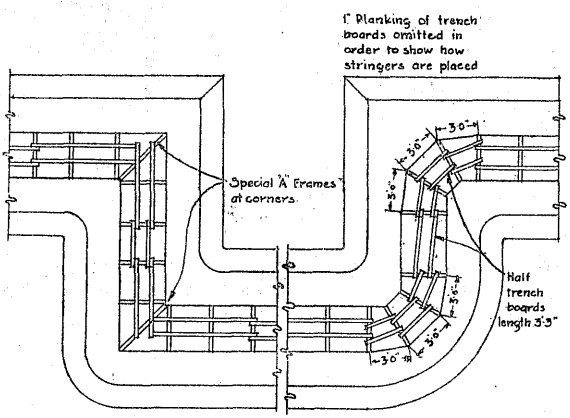


FIG 34
TWO METHODS OF PLACING A FRAMES AROUND CORNERS OF TRAVERSED TRENCH

of picket or stake and then tighten with a rack stick or windlass.

(*c*) *Unanchored revetting pickets* for use only with low revetments such as fire steps. They are supported by being driven from 2 to 2 ½ feet into the ground and must always be braced at the ground level as shown in Figure 31.

(*d*) *Struts* resting against opposite walls of the trench for use only in narrow deep trenches, such as shell slits (Figure 33).

731. *In placing wire-netting revetment,* the following procedure should be observed :

(*a*) Cut vertical grooves in the slope at about 3-foot intervals to hold revetting pickets.

(*b*) Drive the two end pickets of each bay first and anchor them back loosely.

(*c*) Stretch a double thickness of wire netting taut between the two end pickets.

(*d*) Tighten anchor wires so that the end pickets set back into their grooves.

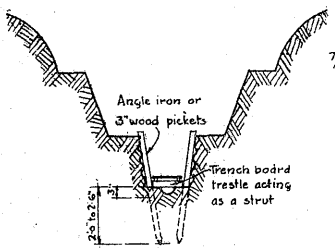


FIG 31
BRACED REVETTING PICKETS

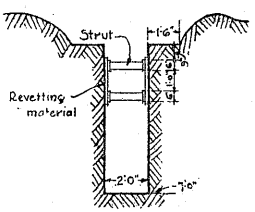


FIG 33
SHELL SLIT

(*e*) Drive the remaining pickets and anchor them back so that they set into the grooves, thus drawing the wire netting tight against the surface to be revetted.

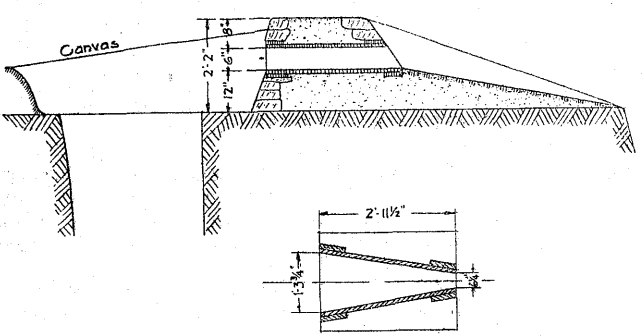


FIG 35 Loophole of Wood

732. In placing *brush revetment,* the following rules should be observed :

(*a*) Brush should be clear of leaves and is best about 3/4 inch in diameter.

(*b*) Pickets should be driven in at about 3-foot intervals, leaving from 4 to 6 inches behind them for the brush.

(*c*) When brush has been built up to the top, pickets should be firmly anchored back, drawing the brush close against the slope to be revetted.

Lookout Posts

733. When located in a trench, *lookout posts* usually consist of niches dug in the interior slope of the trench and covered

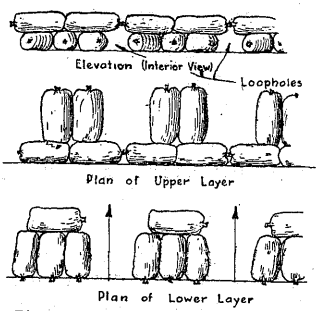


FIG 36 Loopholes of Sandbags

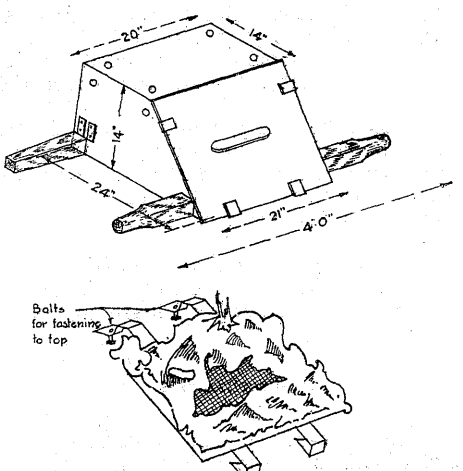


FIG 38 PORTABLE ARMORED OBSERVATION POST

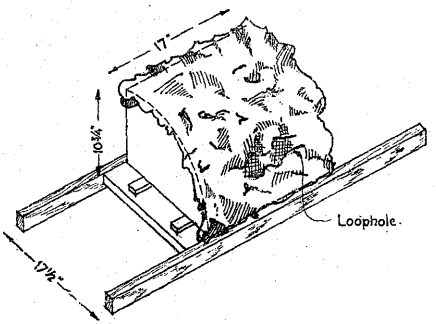


FIG 39 ROLL TOP STEEL OBSERVATION POST

from the rear by a sandbag wall and on top by a splinter-proof layer (boards or logs with a top layer of sand bags).

734. The loopholes are reserved for the lookouts for watching the enemy and for harassing fire ; during combat, the men fire over the parapet. Loopholes are made of wood, sandbags, metal shields, etc. (Figures 35, 36, 38, 39).

The exterior opening should be concealed by a cord trellis-work or other means that will allow the barrel of the rifle to protrude.

It is essential that the enemy should not be able to distinguish whether the loophole is manned or not. The loophole must not therefore have as a background the sky, or a wall, or other object whose color contrasts with that of the trench. A cloth may be hung behind the head of the lookout to furnish the background.

Whenever possible, the loophole should be oblique with respect to the enemy's trench ; the lookout is better protected, and the loophole is less visible (see Figure 56, page 139).

Miscellaneous

Plans for automatic-rifle positions, snipers posts, ammunition recess, and latrines are shown in Figures 37, 40, 41, and 42.

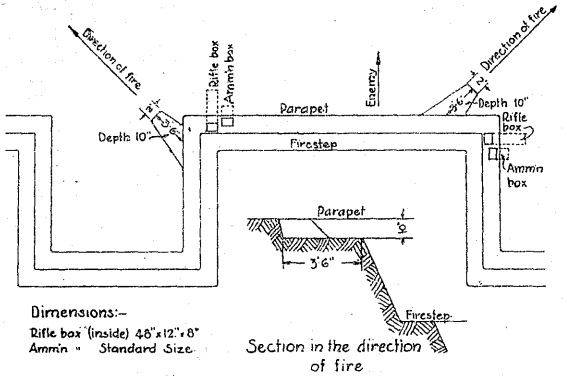


FIG 37
AUTOMATIC RIFLE POSITIONS

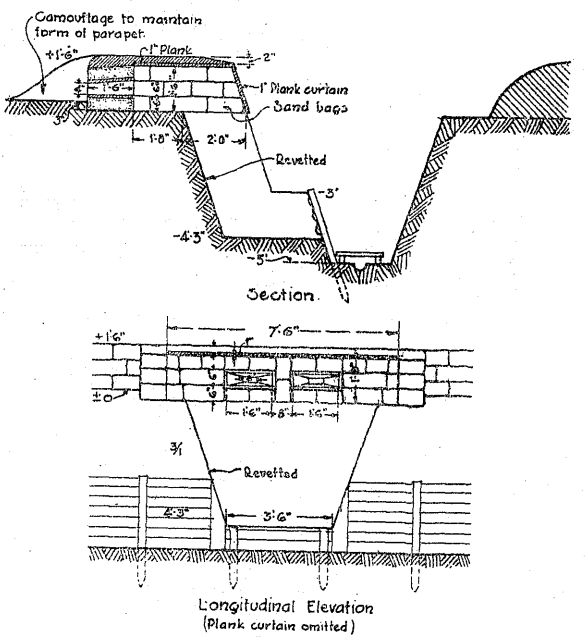
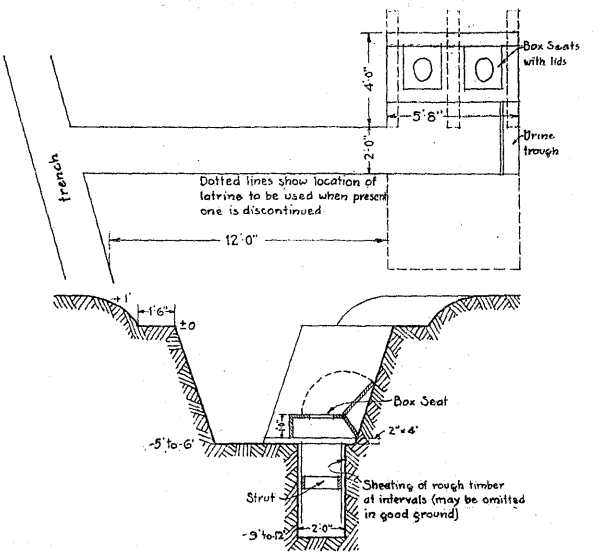
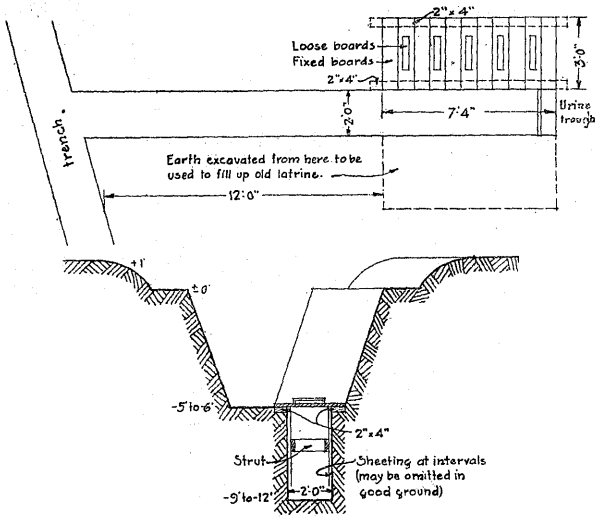


FIG 40 SNIPERS POST.



DEEP LATRINE BOX SEAT TYPE



DEEP LATRINE STRADDLE TYPE
FIG 42

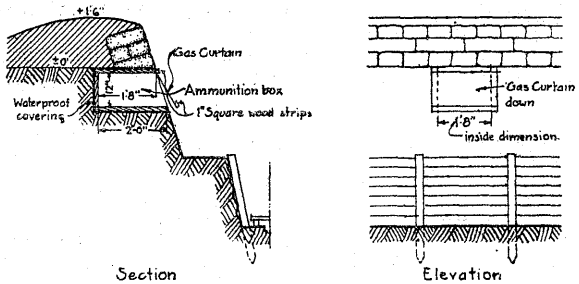


FIG 41
STANDARD AMMUNITION OR GRENADE BOX

5. WIRE ENTANGLEMENTS

735. Infantry will be trained in the construction of low wire entanglements, the double-apron fence, and portable wire obstacles (pars. 742, 743, 744).

General Principles

736. Barbed-wire entanglements should be located in accordance with the following principles :

(*a*) They must be covered at every point by our own rifle or machine-gun fire, either frontal or enfilade. Special emphasis must be laid on the principle that the entanglement and machine-gun positions should be so sited with reference to each other that the front of the entanglement is swept by the fire of machine guns. This is the most important consideration in siting barbed-wire entanglements (see Figure 43). Obstacles have no inherent value of their own; they serve only as an auxiliary to the fire power of ths troops. If the attack succeeds in neutralizing the troops behind the wire, the entanglement is valueless.

(*b*) They must not be so far from the trench that they cannot be kept under observation and control at all times, especially at night.

(*c*) They must not be so close to our own trench as to permit the enemy to approach to bombing range of the position

without being discovered. A distance varying from 30 to 60 yards will generally be most suitable.

(*d*) They must be concealed as much as possible from the enemy's observation both terrestrial and aerial, especially

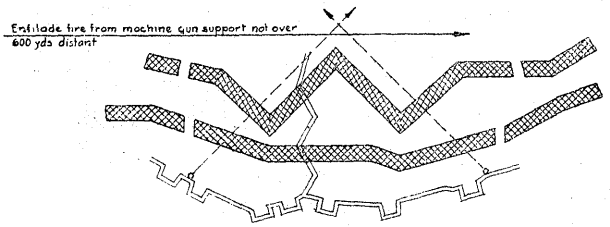


FIG 43 ENFILADE OF ENTANGLEMENT

from his ground artillery observation stations. Full advantage should be taken of depressions in the ground, tall grass, woods, and reverse slopes.

(*e*) The belt of wire should, as far as possible, avoid paralleling the fire trench ; and in addition it should be irregular in width and height. The first consideration will prevent the enemy artillery from ranging on the trenches to destroy the entanglement ; the second, from knowing definitely when the wire has been destroyed.

Special precaution must be taken in locating the entanglement to avoid indicating the manner in which the ground is occupied.

Design

737. The following principles govern the design of the entanglements :

(*a*) Within limits, a broad, thin entanglement is better than a narrow, thick one ; the former, while equally effective, is less liable to destruction by artillery fire, as well as less visible.

(*b*) Two belts of entanglements, separated by a space of from 10 to 50 yards, are better than the same amount of entanglement in one belt.

(*c*) The entanglement must be well supported and anchored to the ground by means of pickets and posts, so as to be difficult to flatten out or drag aside.

(*d*) Sufficient barbed wire must be used to prevent easy

penetration. Some loose tangled wire in the entanglement is difficult to clear aside after the wire is cut.

(*e*) The entanglement should be provided with blinded gaps for the passage of our men. A gap of about twelve feet in every fifty yards is usually left. Means to block the gaps must be at hand (Fig. 44 and 52).

(*f*) The entanglement should present in its first stages an

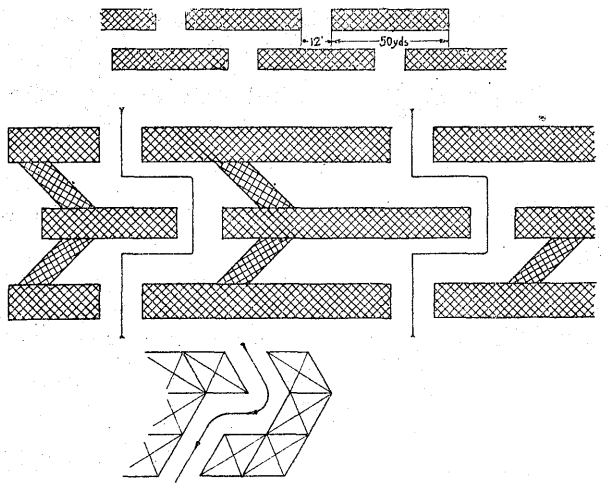


FIG 44 GAPS IN BELT OF WIRE

obstacle behind which the wiring party can work under protection and which can be subsequently added to and improved as desired.

Matériel

738. The following data is descriptive of the matériel employed in the construction of entanglements :

(1) *Barbed wire* :

(*a*) Length. — The length of wire on a reel varies from 50 yards to 100 yards. Reels will, if possible, be issued in standard 50-yard lengths.

(*b*) Weight. — The weight including drum is about 28 pounds for the 100-yard reel and 15 pounds for the 50-yard reel.

(*c*) Marking end of wire. — The plain wire securing a reel of barbed wire must be cut, and a piece of sandbag or white cloth tied to the running end, in order that there will be no difficulty in finding it at night ; the pieces of tin on the wooden drums must be broken off to prevent noise. These prepara-

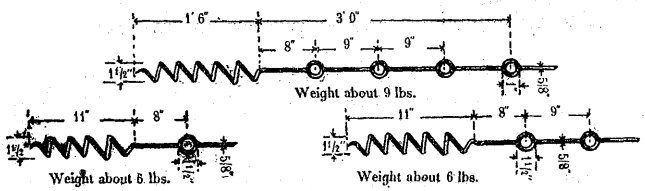


Fig. 44a.

tions must be made before the matériel is taken out for work

(2) *Pickets* :

(*a*) Wooden

	Long	Short
Length	5 ft.	2 ½ ft.
Diameter	3 to 3 ½ in.	2 ½ to 3 in.

(*b*) Screw (See Fig. 44 *a*)

	Long	Medium	Short	Anchorage
Length	5 ft.	3 ½ ft.	1 ½ ft.	
Diameter	⅝ in.	⅝ in.	⅝ in.	
Weight	9 lbs.		6 lbs.	3 lbs.

(*c*) Angle iron

Length ... 5 ft. 10 ½ in. and 3 ft. 6 in.
Weight .. 10 lbs. and 6 lbs.

(*d*) All bundles of screw and iron pickets should be prepared for carrying by being wrapped with a sand bag and secured in at least two places by a turn of plain wire with the ends twisted together. Enough wire must always be left at the ends so that it can be untwisted by hand without pliers.

(*e*) Bundles of long wooden pickets should be tied together in at least two places with plain wire. Short wooden pickets are best carried in sand bags, eight in each bag ; two bags are tied together and slung over the shoulder.

(3) *Wire cutters* :

It very seldom occurs that there are enough wire cutters to give a pair to every man in a wiring party, which consists of not more than 25 men. If stores have been properly prepared beforehand, there is no necessity for more than two pairs

to each party, which should be carried for use in emergency.

(4) *Mauls* :

Coiled rope should be fastened on end to deaden sound

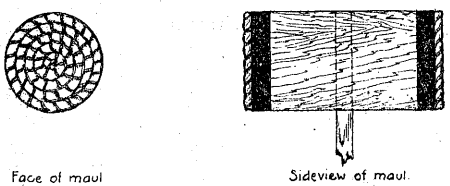


FIG 45 COILED ROPE ON MAUL

(Figure 45). Where rope is not available, sandbags should be carried for use as mufflers on heads of pickets.

739. The task of throwing loose wire into an entanglement

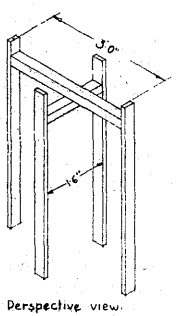


FIG 46 - FRAMEWORK FOR MAKING SPIRALS

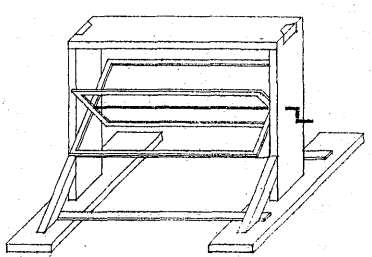


FIG 47 WINCH FOR MAKING SPIRALS

is a long and tedious one. It is made very much easier and quicker if the wire is coiled in a spiral beforehand. Spirals are prepared in accordance with the following method :

Drive two 3-foot stakes, 3 feet apart, and two more at right angles to the first two, 1.5 feet apart (Figure 46). Then wind 75 yards of barbed wire around the diamond-shaped frame work thus formed, gradually working it up the stakes in a spiral. Finally, take the spiral off the stakes and tie it together in four places with plain wire.

A man can easily carry a spiral thus made on his shoulder in a trench.

740. The following are convenient approximations of man loads :

	Number	Average total weight
Wooden pickets (long)	4	
(short)	16	
Screw pickets (long)	4	36 lbs.
(medium) ...	6	36 lbs.
Angle-iron pickets (long) ...	4	45 lbs.
(short) ..	6	27 lbs.
Barbed wire—100-yard reel	1	28 lbs.
50-yard réel	2	30 lbs.
Loose wire—spirals.....	1	20 lbs.
Anchorage pickets.....	8	26 lbs.

Time and men required

741. The following table, showing time and men required to construct the different standard entanglements, is based on the assumption that work is carried out under the following conditions, with good average parties, not picked men :

(*a*) Stores are taken up by a separate carrying party as far as the fire trench only.

(*b*) The entanglement is erected 40 to 50 yards from the fire trench ; stores have, therefore, to be carried out that distance by the wiring party.

(*c*) Men work equipped to meet attacks.

Pattern and Length	Wiring party		Carrying party		Average time by daylight	Average time by night
	N. C. O.	Men	N. C. O.	Men		
50 yards low or kneehigh wire.	1	7	1	17	30 min.	1-1 ¼ hrs.
50 yards double-apron fence	1	9	1	15	30 min.	¾-1 hr.

The size of the carrying parties should be so regulated as to avoid delaying the wiring party on account of lack of material. The carrying parties defined in above tables can carry *at one trip* sufficient stores for fifty yards of entanglement. If more than fifty yards are to be constructed and all the material is to be carried in one trip before the wiring party commences work,

the carrying parties must be proportionately increased. If for example two hundred yards of entanglement are to be constructed, a carrying party of four times the strength of that given will be necessary. If, on the other hand, the wiring party is to be supplied by *repeated trips* of the carrying party, the amount of wire carried at each trip must be sufficient to supply the wiring party until the next return of the carrying party, and the time required for the round trip to the matériel depot must therefore be considered. If, for example, the round trip to the matériel depot requires one hour and the length of the entanglement is two hundred yards or more, the strength of the carrying party required will be twice that given in the table.

For long lengths of entanglement (over 100 yards), a small additional carrying party of three or four men is formed to supply the wiring party with material from the fire trench and to serve as replacements for casualties.

Description of the Standard Obstacles

Low (or Knee-High) Entanglement

742. This entanglement (Figure 54) consists of three rows of medium pickets, a horizontal wire along the top of each row, one diagonal wire in each of the two bays formed by the three rows, and finally loose wire thrown into the bays.

It is not a very effective entanglement ; its chief value lies in the fact that it is not conspicuous. It is the slowest entanglement to erect at night, if screw pickets are used, as the latter are very hard to find. This difficulty can be overcome by laying down a spun yarn line or tracing tape.

Double-Apron Fence

743. This entanglement (Figure 55) consists of four horizontal strands on the fence, and three (including the trip wire) on each apron.

Belts of double-apron fences form an excellent framework for a wide obstacle ; loose wire can be thrown in between the bays for thickening purposes.

Portable Wire Obstacles

744. These special forms consist of various different shapes of framework upon which barbed wire is strung. They are used :

(*a*) To block gaps in the entanglement.

(*b*) As an emergency obstacle thrown out in front of the trenches.

(*c*) To barricade narrow streets in defended villages and trenches leading toward the enemy.

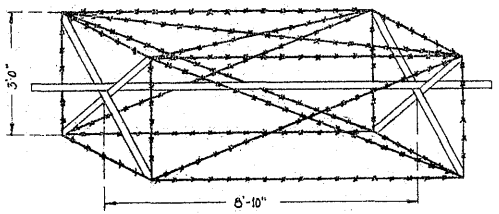


FIG 52 LARGE KNIFE REST (WOOD)

(*d*) To make emergency repairs to entanglements partially destroyed by the enemy's fire.

745. The principal form of portable obstacle for use by infantry is the knife rest. This obstacle consists of a framework

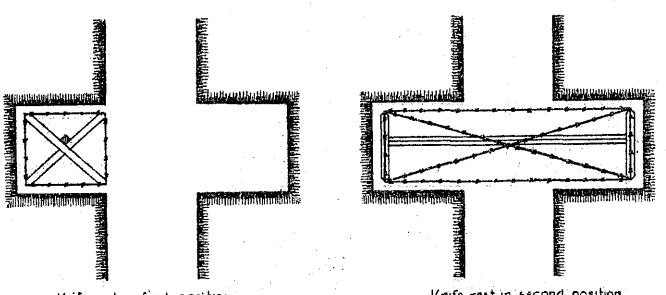


FIG 53 METHOD OF BLOCKING TRENCH WITH KNIFE REST

of wood or iron, upon which barbed wire is strung. The iron framework is collapsible and hence easier to transport than the wooden type; it has the further advantage of greater invisibility and strength. In shape, the framework of the knife rest resembles a common saw-buck. It is the most used of the portable obstacles. (See Figures 52 and 53).

Wire Drills

General Rules

746. The following general rules apply to all drills (See Figures 54 and 55).

A. Order of work :

In the following drills, all men have been given a number and the several groups a letter; the tasks should be initiated in the order in which the men are numbered, and the groups should work in echelon in the same direction, so that the men doing different tasks will not be in each other's way and groups never cross paths.

B. Pickets :

(*a*) Spacing. — The N. C. O. determines the location of the

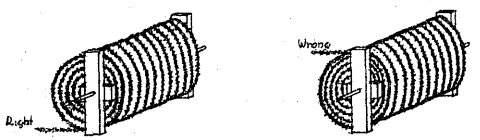


FIG 48

RIGHT AND WRONG WAY OF RUNNING OUT A COIL OF BARBED WIRE

pickets in one row by means of pacing ; in the other rows, the pickets are located by eye opposite the center of the intervals in the preceding row.

(*b*) Laying out. — Pickets should always be carried under the left arm and placed on the ground with the right hand, and in such a way that the end of the screw or the point of the picket faces the enemy, indicating the spot at which the picket is to be erected.

(*c*) Erection. — Screw pickets must be screwed in so that the loops are parallel to the length of the entanglement, and the top loop points in the direction from which the men are working, *i. e.*, toward the starting point. This rule is essential in order to facilitate placing wires.

(*d*) Anchor pickets. — Wooden pickets used as holdfasts should be driven in roughly at right angles to the stay wire attached to them, but screw anchorage pickets must be directed in prolongation of the stay wire to avoid being drawn in the direction of the strain.

C. Running out wires :

In running out barbed wire, two men work together ; one man

holds the reel, and the other stretches the wire and fastens it to the pickets. The stake on which the reel is carried must be small enough to permit the coil to revolve easily, and it must be so held that the wire runs from underneath the reel, as otherwise the wire tends to rise into the holder's face (Figure 48).

D. Fixing wires :

(*a*) Men fixing the wires must always work facing the enemy.

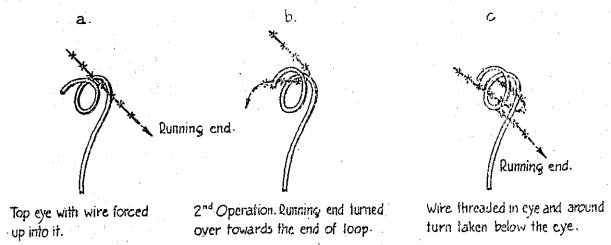


FIG 49 a,b,c.–METHOD OF FASTENING BARBED WIRE ON PICKET

(*b*) To fix wire in top eye of screw picket : Pull the standing end taut and slip the wire up into the eye, turn the running end up over the eye, thus threading the wire in the eye ; then take

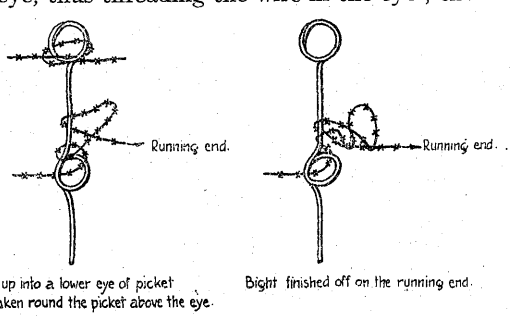


FIG 50 METHOD OF FASTENING BARBED WIRE ON PICKET

a turn with the running end around the picket below the eye (see Fig. 49).

(*c*) To fix the wire in lower eye of screw pickets when there is already a wire in the top eye :

(1) Pull the standing end taut and slip the wire up into the eye. Then take the bight on the running end, pass it around the

picket above the eye, then finish off by taking a turn with the bight on the running end (see Fig. 50).

(2) If one eye is on the opposite side of the pickets from the others, the wire must be forced down into the eye, and the bight on the running end passed around the picket under the eye.

The above rules, (*b*) and (*c*), apply in whichever way the wire men are working, from right to left or left to right ; if they are carried out, the wire is firmly fixed in the eye and cannot slip up or down the picket ; also, if one bay is cut, the wire in the bays on either side remains taut and does not slip through the eyes.

(*d*) To fix the wire to wooden pickets, take two turns around the picket, the second turn binding the first.

(*e*) To fix one wire to another adjacent to it, a short length of

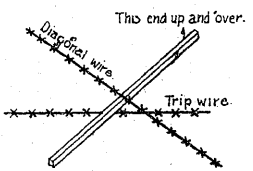


FIG 51 WINDLASSING WIRE

smooth wire may be used, or the two wires may be twisted together by means of a rack stick as shown in Figure 51. This method is known as " windlassing. "

E. Loose wire and trip wire :

The addition of loose wire and a trip wire makes the entanglement more efficient. The organization of the wiring party is so arranged as to allow two spare men for this task. If circumstances require the omission of the trip wire and the loose wire, the organization of the rest of the party is not affected.

Drill I

747. *Drill for 50-yards length standard low (or knee-high) wire entanglement.*

Materials :

(1) Nine bundles containing six medium pickets each.

(2) Two 100-yard coils and three 50-yard coils of barbed wire.

Tasks of Wiring Party :

Group	Nos	1st Task.	2d Task.	3d Task.	4th Task.	5th Task.
N. C. O.		Direction and supervision.				
A	1 2 3	Carry out 3 bundles pickets and 2 coils (100 yards) barbed wire.	Lay out and screw in center line of pickets.	Diagonal wire in enemy bay.	Diagonal wire in home bay.	
B	4 5	Carry out 3 bundles pickets and three coils (50 yards) barbed wire.	Lay out and screw in outer line of pickets.	Horizontal wire on outer line of pickets.	Horizontal wire on center line of pickets.	Horizontal wire on inner line of pickets.
C	6 7	Carry out 3 bundles pickets and 4 spirals.	Lay out and screw in inner line of pickets.	Loose wire in enemy bay.	Loose wire in home bay.	

(3) Four spirals.

Wiring party :

One N. C. O. and seven men. The N. C. O. carries cutting pliers, and each of the party a windlassing stick ; gloves as required.

Carrying party :

One N. C. O. and 17 men.

Details :

(1) The N. C. O. leads out the whole party and has all his stores dumped in some convenient place behind or near the head of the task. Each group is responsible for its own stores as detailed above ; *A* being the larger group will be ready first.

(2) When ready, the N. C. O. followed by Nos. 1, 2 and 3, paces out the center line and indicates to No. 1 where to lay pickets. As soon as No. 1 has finished his bundle, he screws in 6 pickets. The N. C. O. follows the same procedure with Nos. 2 and 3, who complete the laying out of the center line.

(3) As soon as the N. C. O. has thus laid out his center line of pickets, he returns to the head of the task and supervises the laying of the outer and inner line of pickets by *B* and *C* groups.

(4) As soon as *A* group has finished its pickets, it returns to the head of the work and puts on the diagonal in the outer bay. No. 1 runs out the coil, No. 2 fixes wire on the outer line of pickets, and No. 3 fixes the wire on the center line of pickets.

(5) As soon as *B* group has finished its pickets, it returns to the head of the work and puts the horizontal wire on the outer line of pickets ; No. 4 runs out the coil and No. 5 fixes the wire on the pickets.

(6) As soon as *C* group has finished its pickets, it throws the spiral wire into the outer bay, two spirals in each 50-yard bay.

(7) When *B* group has finished the horizontal wire on the outer line of pickets, it comes back to the head of the work and puts the horizontal wire on the center line of pickets. Similarly, *A* group and *C* group return to the head of the work and repeat in the home bay the operations described in (4) and (6).

(8) Finally *B* group puts the horizontal wire on the inner line of pickets.

Drill 2

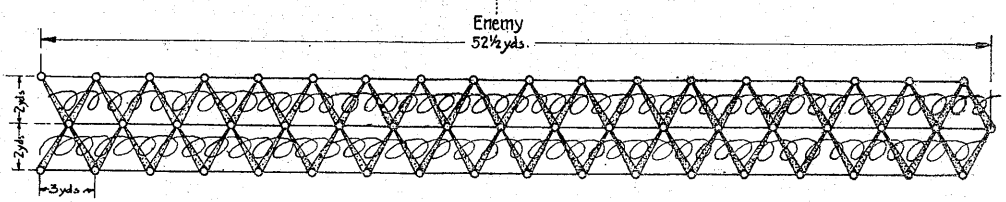
748. *Drill for 50 yards standard double-apron fence.*

Materials :

(1) Four bundles containing 4 (long) pickets each.

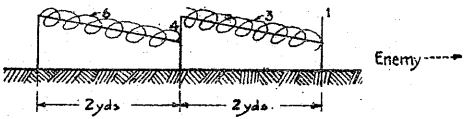
(2) Four bundles containing 8 anchorage pickets each.

50YD STANDARD LOW WIRE ENTANGLEMENT



Plan.

Inclined wire in plan.
Top end
Low end



Section (Enlarged)

Order of putting on the wire

FIG 54

(3) Fourteen 50-yard coils barbed wire (or two 100-yard coils) and ten 50-yard coils.

Wiring party :

One N. C. O. and 9 men. The N. C. O. carries cutting pliers, and each of the party a windlassing stick. Gloves as required.

Carrying party :

One N. C. O. and 15 men.

Tasks :

Group.	Nos.	1st Task.	2d Task.	3d Task.	4th Task.	5th Task.
N. C. O.		Direction and supervision.				
A	1 2 3	Carry out 3 bundles pickets.	Screw in long pickets.	Front diagonal wire.	Bottom wire on fence.	Rear diagonal wire.
B	4 5	Carry out 2 bundles anchorage pickets.	Screw in front anchorage pickets.	Front trip wire.	2d wire on fence.	Top horizontal wire on rear apron.
C	6 7	Carry out 2 bundles anchorage pickets.	Screw in rear anchorage pickets.	2d horizontal wire on front apron.	3d wire on fence.	2d horizontal wire on rear apron.
D	8 9	Carry out 1 bundle of pickets and 14 coils barbed wire.		Top horizontal wire on front apron.	Top wire on fence.	Trip wire on rear apron.

Details :

(1) The N. C. O. leads out the whole party to the head of the work, and *A*, *B*, and *C* groups undo their bundles, when ready. The N. C. O. paces out and indicates to *A* group where to lay its pickets, commencing with No. 1 and finishing with No. 3. Having done this, the N. C. O. returns to the head of the work, picks up the fourth bundle which *D* group has brought out, walks back again, and lays out this bundle ; all

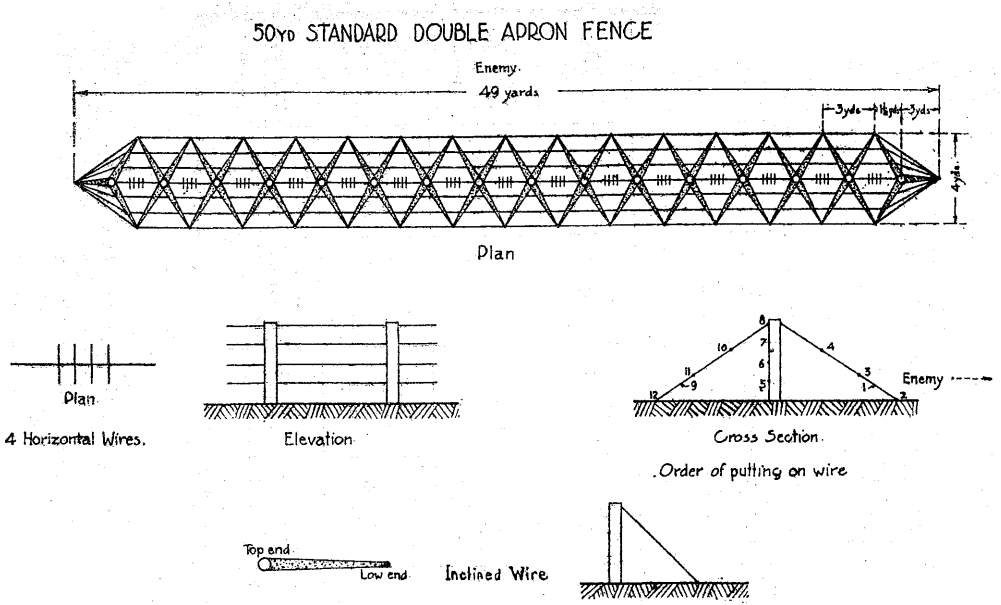

50YD STANDARD DOUBLE APRON FENCE
Enemy.
49 yards
3yds
1½yds
3yds
4yds.
Plan
Plan
4 Horizontal Wires.
Elevation
Cross Section.
Order of putting on wire
Enemy
Top end
Low end
Inclined Wire

FIG 55

numbers of *A* group, as they finish four pickets, join the N. C. O. and screw in the last four pickets.

(2) Meanwhile *B* and *C* groups, getting the direction from the center line of the long pickets, lay out and screw in the whole of the anchorage pickets, No. 4 being responsible for the anchorage picket at the head of the work, and No. 7 for the anchorage picket at the end of the work. Each number of both groups lays out and screws in his own bundle of pickets.

(3) Meanwhile, *D* group brings out the remainder of the stores and dumps them at any convenient spot indicated by the N. C. O. This requires each man to make four journeys.

(4) As soon as *A* group has finished its pickets, it returns to the head of the work and puts on the front diagonal wire. No. 1 runs out the coil, No. 2 fixes the wire on the pickets, and No. 3 fixes the wire on the anchorage pickets.

(5) As *B*, *C*, and *D* groups finish their second task (see tasks), they return to the head of the work and put the horizontal wire on the aprons. Nos. 4, 6, and 8 respectively run out the coils, while Nos. 5, 7, and 9 windlass the wires on the diagonal wire. In doing this, Nos. 5, 7, and 9 should not step over the diagonal wire but walk around the posts, lifting their wire over the posts, and then down into position on the diagonal wire.

(6) As they finish each task, the various groups return to the head of the work and take up the next task in the order given.

All men work behind the wire at all times.

Nos. 1 and 2 must be careful to put the diagonal wire on rather slack; it automatically tightens when the horizontal wires are windlassed on.

All diagonal wires and apron wires are begun and finished on the end anchorage pickets. The horizontal strands on the fence are not carried down to the end anchorage pickets.

If wooden or angle-iron pickets are used, Nos. 1 and 2, and No. 3 and the N. C. O. work together, No. 2 and the N. C. O. holding up the pickets while Nos. 1 and 3 drive them in with the maul.

6. CAMOUFLAGE

General

749. Military camouflage is work done for the purpose of deceiving the enemy as to the existence, nature, or location of our troops, matériel, or military works.

The enemy may be deceived by:

(*a*) Making an object look like something else.

(*b*) Making an object indistinguishable from its surroundings.

(*c*) Suppressing all signs of human activity near the object, or deceiving the enemy as to the purpose of this activity.

(*d*) Erecting dummies.

750. The necessity for camouflage and the methods employed will vary widely with the situation. In stabilized warfare, the most minute precautions are necessary, while in open operations, time will not be available either to the defense for taking such precautions nor to the offense for making the minute studies required, and the constantly shifting character of operations will greatly decrease the value of many of the precautions indispensable in position warfare. In open operations, camouflage against aerial photography falls off greatly in importance ; the main effort should be directed to concealment from ground observation. The employment of dummy works designed to deceive the enemy as to the location of the more important works and centers of resistance is an especially effective form of camouflage in open warfare.

751. When taking up positions in open warfare, natural and artificial cover (embankments, ditches, road cuts and fills, villages, woods, hedges, vegetation, etc.) are utilized to the fullest extent as means of concealment from observation.

752. In stabilized warfare, the camouflage erected must be proof against the following means of observation :

(*a*) Air photographs taken either from directly overhead or obliquely. These are minutely studied by specialists trained to detect and interpret the faintest marks on the photographs.

(*b*) Direct observation from the ground, from captive balloons, or from low flying airplanes. This is most important in order to prevent spotting of shots by enemy artillery observers.

The camouflage of an entire trench system or even of considerable lengths of trench is impracticable and should not be attempted. Effort should be directed toward camouflaging the more important works (*e. g.*, machine-gun emplacements, dugouts, combat emplacements, etc.) with a view to concealing from the enemy the method by which the position is held.

753. While there is some difference in the way in which a camera records a picture and the way in which the eye records it, it is usually safe to assume that perfect camouflage against air photographs will also be perfect camouflage against direct observation, excepting the close observation which is possible on works in or near the front line. In the latter case, greater attention must be paid to the choice of color so that the eye will be deceived, and to the placing of the camouflage so that observers on the ground cannot see underneath.

754. Before locating any military work which is to be camouflaged, a careful study of the air photographs of the locality should be made. When practicable, the location of the work should be such as to make the camouflage as simple as possible. Subsequent photographs should be studied so as to correct the camouflage.

755. Camouflage must be done well, as poor camouflage is usually worse than none at all.

Camouflage is a continuous process and must be constantly maintained. Frequent inspections must be made and injuries repaired. On account of the inflammable nature of much of the material used in camouflage work, it must be carefully protected against fire.

756. Dummy works include dummy trenches, false entrances to shelters, trails, piles of excavated material, etc.

Principles of Camouflage

757. The form of an object is its most dangerous element. Anything rectangular or regular in shape arrests attention. Nothing in nature appears regular, consequently anything that is regular must be the work of human hands. Regularity is manifested in two forms :

(*a*) In the shape of the camouflage and the shadow.

(*b*) In the regular spacing or alignment of similar works.

758. The shape of the camouflage must not be such as to form a geometrical figure when viewed from a considerable distance. A line such as the edge of a saw may appear broken to close view, but perfectly straight from a short distance. In broken country, camouflage of fantastic shape readily escapes detection, and even in the open, fantastic shapes given to the solid parts of camouflage screens may stave off suspicion.

759. A peculiar shape, which might escape notice if it occurs only once, will undoubtedly receive attention if repeated a few times at regular intervals. Regular spacing should, therefore, be carefully avoided.

760. Shadows may reveal the existence and form of an object, and the problem of camouflage is to avoid such shadows. If the object cannot be screened so as to eliminate the shadow, the latter should be made vague and indefinite. For this reason, camouflage screens are of irregular density, being thinned out near the edges.

761. Texture is a quality which can be compared to the lay of the nap of cloth. It is determined by the amount of shadow of each separate element which makes up the surface. Texture

causes tall grass to photograph dark, short grass lighter, and flattened grass very light. This quality is difficult to estimate, but if incorrectly estimated, it will cause artificial material to contrast with its surroundings.

762. **Footprints** made by men walking about in the vicinity of camouflaged works are the principal signs by means of which the enemy discovers the presence of the work. The reason for this is that the footprints photograph very light because of the fact that they have changed the natural texture of the surface. Every officer and soldier should be impressed with the fact that footprints about any piece of camouflage will certainly lead to its discovery. Carelessness in this respect is a serious breach of discipline and materially interferes with the success of military operations.

763. Colors should be matched as closely as possible, but a slight difference in color between the camouflage material and its natural surroundings is not very noticeable. Objects viewed from directly or obliquely overhead may show a different color than when viewed from the ground. For example, a field of young corn will appear green when viewed from the ground, because only the corn is seen, while from above, it will appear brown, because the earth between the cornstalks shows up prominently.

764. Camouflage must be made to conform to changing seasons, principally by changing its color. Complete conformity cannot always be attained, but by some repainting, by introducing new patches of color, and by the use of local materials, old camouflage can be kept up well enough to escape detection. When snow falls, camouflage which shows up must be covered with snow or with pieces of white cloth, painted with pale blue patches. Usually, only small sections need to be thus treated. Blast marks, trails, and roofs of dugouts must be especially watched.

765. To avoid tracks :

(*a*) Use existing roads and paths wherever possible.

(*b*) Build new roads and paths under cover, using natural cover as much as possible.

(*c*) Carry new roads and paths past the position to another road, a house, or a dummy position. Make sure that the road is used past the true position.

(*d*) Make the roads and paths follow existing lines, such as fences, hedges, ditches, edges of plowed fields, etc. Keep the roads narrow and avoid cutting corners.

(*e*) Hide the trail under a horizontal screen, 9 to 12 feet wide, with thinned edges, making use of hedges or similar lines.

(*f*) Confine traffic to one route. Keep this route narrow, and keep traffic on the route by the free use of trip wires.

766. The principal camouflage materials are sod, shrubbery, branches, raffia on wire netting, painted canvas screens.

767. Camouflage of machine guns must be kept as small as possible, and the spoil from the excavation must be disposed of so that it need not be camouflaged.

Forward machine guns are usually hidden behind plaster and burlap fronts, imitating earth or sandbag parapets, piles of stone, the face of a stone wall, etc, with a view to concealment from direct ground observation. The loophole should be covered by a hinged flap, which is opened only during firing.

Positions farther in rear are hidden by a light rectangular frame, covered with wire netting camouflage (grass or raffia), and capable either of moving up and down vertically, or hinged at the rear so that it will open like a trap door when the gun is to be fired. Small fish nets (10 ft. by 10 ft.) form a convenient and portable camouflage for machine guns. In favorable terrain, machine-gun positions may be disguised as piles of debris, road metal, broken timbers, etc.

768. *Short lengths of trench* may be hidden by using painted scrim or cocoanut matting. The edges of the camouflage must be broken, and the camouflage covers must not be allowed to sag.

Wire entanglements, otherwise well concealed, are sometimes recognized by paths following the wire to a gap. The formation of such paths should be prevented by trip wires.

Permanent snipers' posts require a hole for observation, which is usually covered by gauze, and a hole for firing, which should be of an irregular shape and located in a natural shadow.

Snipers' heads are used in order to spot the location of enemy snipers. They should be fastened so that they can slide up and down in a fixed frame. When an enemy sniper shoots into one of these heads, the head is lowered, and the direction from which the shot came determined.

769. Care should be taken to avoid betraying the location of the work by committing the following errors :

(*a*) A large amount of camouflage material has been prepared, but the work is begun before the camouflage is put in place.

(*b*) A work is well camouflaged; but depots of material are left unconcealed nearby.

(*c*) A shelter is very carefully concealed, the excavated material is carried away at great pains, but a periscope is left unconcealed, or smoke issues from the interior, etc.

(*d*) A trail terminating at a command observation post is used for approaching the post.

(*e*) Men observe from the open near a post.

(*f*) Men do not keep concealed but move about when a hostile airplane is overhead.

7. PIONEER PLATOON

770. The pioneer platoon will be instructed in all the duties that may be required of other pioneer troops. Especial attention will be devoted to the construction of shelters, observation posts, command posts, concrete emplacements, demolitions, and minor stream crossings.

In addition to the instruction necessary in preparation for the execution of its own peculiar duties, the pioneer platoon should serve as a regimental center of instruction in infantry pioneer service.

CHAPTER VII. — MARCHES

1. GENERAL PRINCIPLES

771. A successful march, whether in peace or war, is one that places the troops at their destination at the proper moment and in the best possible condition.

The success of operations depends in a great measure upon the skill with which marches are conducted.

The marching efficiency of a unit is judged by the amount of straggling and elongation, and the condition of men and animals at the end of the march.

Good marching is secured by careful preparation, strict discipline, and the due observance of march sanitation.

As far as compatible with other requirements, marches are conducted so as to reduce to a minimum the hardships of the troops. The men are not kept under arms longer than necessary, nor required to carry heavy burdens when transportation is available.

Special attention is paid to the feet of the men and to the hoofs and backs of animals.

The conduct of a march (forming the column or columns, distribution of troops, the start, rate, length of march, etc.) is controlled by the situation and object to be accomplished.

2. PREPARATION

772. Warning orders are issued at the earliest practicable moment in order that preparations may be made thoroughly and without haste.

773. It is the duty of the commander to see that the necessary preparations are made ; that the men and animals are in fit condition and that they are properly equipped ; that all trains accompanying the command are loaded as prescribed ; that proper measures have been inaugurated for the replenishment of supplies ; and that the necessary arrangements have been made for the care and evacuation of the sick and wounded.

774. The training of infantry should consist of systematic exercises to develop general physique and of actual marching to accustom men to the fatigue of bearing arms and equipment and to train them in observance of the rules of march discipline.

775. With new or untrained troops, the process of hardening

the men must be gradual. Immediately after muster into the service, the physical exercises and marching are begun. Ten-minute periods of vigorous setting-up exercises are given three times a day to loosen and develop the muscles. A progressive schedule of marches with full equipment is established, beginning with a distance of 4 or 5 miles and increasing the distance daily as the troops become hardened, until a full day's march under full equipment may be made without exhaustion.

776. A long march should not be made with untrained troops. If a long distance must be covered in a few days, the first march should be short, and the length progressively increased.

777. Special attention will be paid to the care of feet and the fitting of socks and shoes in compliance with existing regulations.

778. Each company and platoon commander inspects his unit before the commencement of the march and assures himself that arms and equipment are as prescribed, canteens filled, packs properly made up, supplies to be transported on wagons complete, properly marked, and prepared for transportation, etc. Commanders of units with transportation inspect the loading of wagons, adjustment of harness, etc. As far as practicable, fatigue and other details that will be required at the end of the march (digging latrines and refuse pits, pitching officers' tents, kitchen details, etc.) are made before the commencement of the march.

3. FORMATION OF THE COLUMN

779. To form the column for a march, the commander issues the necessary orders (march order).

The march order states the object of the march, gives the distribution of the troops, order of march of the main body, manner of forming the column, etc.

The method of forming the march column depends upon the size of the units, the location of their camps or quarters, and the tactical situation.

When troops are encamped or bivouacked at some distance from the road, columns of the size of a regiment and larger columns are formed by the successive arrival at, or clearing of, an initial or starting point by the subordinate units. The initial point, as a rule, is located in the direction of the proposed march. The commander fixes the initial point after considering

the position of the troops and the roads by which they can join the column. He also prescribes the hour at which the leading fraction or fractions clear the initial point, and if necessary, the routes to be followed in reaching it. To prevent needless marching, he may designate special initial points for parts of the command.

As a general rule, the larger units of a command should be camped in the order in which they will march on the following day.

In drafting march orders, the road space and rate of march of the different fractions of the command and their distances from the initial point or points must be considered. With troops in column of squads and trains in single column of carriages, the following may be assumed for approximate calculations : two men per yard for troops ; 20 yards for each wagon; 8 yards for each cart.

Commanders of subordinate units examine the route to be followed, calculate the time required, and start their commands in such manner that there will be neither delay or unnecessary waiting under arms either at the initial point or elsewhere.

When commands camp in column along the route of march, they may be assembled in march column prior to the commencement of the march. Assembly or massing of the command prior to commencement of the march may also be made necessary by uncertainty in the tactical situation when marches are conducted in proximity to the enemy.

Where several elements of a command, marching by different routes, are to unite on a single route or when their march routes cross each other, arrival at or clearing of road junction should be so timed as to prevent collision between columns.

The order of march of a column is controlled mainly : (1) by tactical considerations, which are paramount in the presence of the enemy (composition of columns in accordance with the tactical situation) ; and (2) by the rule requiring the hardships of troops to be reduced to a minimum, which controls the order of march when tactical considerations do not enter into the situation (distribution in small columns, formation of columns with reference to march rate and capacity of the several elements).

The order of regiments in brigades, battalions in regiments, and companies in battalions is generally changed from day to day ; the leading unit on any day forms at the tail on the following day.

When troops are to march to an assigned camping or billeting area, the location of the several elements of the command in the area should be considered in forming the columns.

4. THE START

780. When practicable, marches begin in the morning, ample time being allowed for the men to breakfast, animals to feed, and the wagons or animals to be packed. The time for reveille and stables should be designated the evening before. Canteens are filled, fires put out, latrines covered, and the camp policed before departure.

781. Except for urgent reasons, marches should not begin before one hour after daylight ; an earlier hour should generally be ordered when the distance to be covered would otherwise necessitate making camp at the end of the march after dark.

Night marches are difficult, slow, and exhausting. Concealment of movement and other tactical considerations will, however, frequently require such marches (see Night Operations).

The signals for striking camp and putting the command in march (the *general,* etc.) are ordered by the commanders of the larger units at the proper time. After the *general,* one or more officers of each organization superintend the preparations for the march.

The different units of the column, including those of the train, are separated at the start by distances prescribed in these regulations (Plates III, IV, V) or by the commander. These distances are temporarily increased or diminished, according to circumstances, thus facilitating uniform progress without checks and with a continual tendency to the gradual resumption of normal distances.

5. CONDUCT OF THE MARCH

782. On the march, troops keep to the right of the road, as far as practicable leaving the left free. Even when the roads are narrow, space should be left for messengers to pass freely along the column. When roads are soft with mud or heavy with sand or very dusty, it may be advisable to divide the column longitudinally so as to permit men and animals to pick their way ; the middle of the road is kept clear. Care should be taken to prevent straggling or undue lengthening of the column.

783. The habitual march formation is column of squads.

On wide roads, the march may be conducted in double column of squads when necessary ; on narrow roads or trails, in column of twos or files. In marching across country, the commander adopts the most advantageous formation.

The elements of the column cover accurately in file and keep accurately dressed toward the side of the guide. Rifles are carried either slung vertically or in such a manner on the shoulder, muzzle up and elevated, as not to interfere with the soldier next in rear.

As a rule, troops on the march pay no compliments; individuals out of ranks salute when they address, or are addressed by, a superior officer. The march is habitually at route step.

784. File closers, including officers, form additional ranks at the head and rear of the units. No one is permitted to march habitually outside of the column, which must at all times be orderly and compact.

785. An officer of each company marches at its rear in order to keep it closed up and prevent straggling.

No person is permitted to fall out without specific authority of an officer of his company. Authority is given only for the most urgent reasons. Men who fall out on account of sickness are given a written permit to be presented to the surgeon, who disposes of the case according to the necessity and notifies the company commander of the action taken.

786. Sanitary troops with combat equipment from the regimental sanitary detachment are attached to each battalion and march at the tail of the battalion. Disabled men falling out are examined, tagged and treated, and sent back to the proper transportation or otherwise disposed of as their condition requires.

The camp infirmary attached to the regiment from the divisional sanitary train marches at the tail of the regiment. On arrival in camp, the infirmary serves as a camp dispensary and as a collecting point for the evacuation of casualties.

787. In addition to the driver, only one other person is permitted to ride on a field wagon. All other personnel with the regimental trains are formed and marched in one group, under the senior present, at the tail of each battalion transportation group. All men who accompany the field trains wear their full equipment, less the pack. The latter may be carried on the train.

6. RATE AND LENGTH OF MARCHES

788. The rate of march varies with the length of the march, size of the command, condition and training of the troops, and other circumstances ; sandy, rough, muddy, or slippery roads, great heat and dust, strong headwinds, storms, and broken

country reduce the rate. If hills are to be climbed or swampy country is to be crossed or defiles passed, liberal allowances are made in time calculations.

The rate prescribed for drill is 100 yards a minute or 3.4 miles an hour; on the road, the maximum to be counted on is 88 yards a minute or 3 miles an hour; including halts this rate is equivalent to 2 1/2 to 2 3/4 miles per hour. The rate of infantry columns, under average conditions, may be assumed at 2 1/4 to 2 1/2 miles an hour.

The average march of infantry is 15 miles a day; but in extensive operations, involving large bodies of troops, the average is about 12 miles a day. Small commands of seasoned troops, marching on good roads in cool weather, can average 20 miles a day.

The rate of a wagon train varies with the class and condition of the draft animals, the load, the length of the column, and the condition of the roads. While large mules drawing light loads on good roads can cover nearly 4 miles an hour, a rate of 2 miles, including halts, is all that can be expected in long columns even under favorable conditions; small trains may make 2 1/2 miles an hour. The daily march of a wagon train is about the same as that of infantry.

The rate of march is regulated by the commander of the leading company of each regiment, or if the organizations are separated by greater than normal distances, by the commander of the leading unit of the organization. A uniform rate should be maintained. The officer setting the pace constantly checks the cadence of his stride (which has been previously measured by marching over a measured course) against the watch, in order to regulate the march rate.

A forced march is never undertaken unless the situation requires it. As a rule, forced marches are made by increasing the number of marching hours rather than by accelerating the rate.

7. HALTS

789. The halts and the starts of the units of a column are regulated by the watch and are simultaneous.

Closing up during a halt or changing gait to gain or lose distance is prohibited.

A halt of 15 minutes is made after the first half or three-quarters of an hour of marching in order to permit the men to relieve themselves or re-adjust equipment; thereafter, a halt of ten minutes in each hour. The number and length of halts may be

varied according to the weather and exertion required. The men are allowed to fall out, but remain in the immediate vicinity of their places in the column.

Halts are not made in or near towns or villages except for the purpose of obtaining supplies or water. When halts are so made, the men remain in column, and details are sent for whatever is necessary.

Halts may be made pursuant to signal or at hours specified by the commanding officer of the troops (*e. g.*, hourly halts, to be made uniformly at 10 minutes before the hour). In the latter case, all units halt and resume the march at the time specified.

When the day's march is long, a halt of an hour should made at noon, and the men allowed to eat. Places for long halts should be selected with care ; wood, water, grass, dry ground, and shade are desirable features. Arms are stacked and equipment removed.

In prolonged marches, at least one day in seven should be a day of rest.

8. STREAM CROSSINGS, DEFILES, AND OBSTACLES

790. When a cause of delay — for example, a damaged bridge — is encountered, the troops in rear are notified of the minimum length of the delay ; they then conduct themselves as at regular halts.

In ascending or descending slopes, crossing streams or other obstacles, or passing through defiles requiring a reduction of front, every precaution is taken to prevent interruption of the march of the troops in rear. If the distances are not sufficient to prevent check, units are allowed to overlap ; if necessary, streams are crossed at two or more places at the same time ; in passing through short defiles, the pace is accelerated and the exit cleared at once. If a company is delayed while crossing an obstacle, the head of the company slackens the pace or halts a short distance beyond the crossing until all of the company has passed and has closed up ; it then regains its distance, increasing the pace if necessary.

Careful examination is made of fords, boggy places, bridges of doubtful character, ice, etc., before attempting a crossing.

When necessary, an officer is designated to superintend the crossing ; his instructions must be strictly observed, the troops crossing in the formation prescribed by him. Troops crossing bridges march without cadence.

Whenever a military bridge is constructed with the bridge equipage, or if deemed necessary, in cases where improvised material is employed, a bridge-guard officer will be detailed for its care and maintenance during the period of its use. All orders, regulations, and instructions issued by this officer will be considered as emanating from the commander of the force crossing the bridge.

When roads lead through swamps or quicksand or across streams with treacherous bottoms, their limits are marked with stakes or bushes, or warnings are placed at dangerous points. At night, lanterns are hung from the stakes, and a fire is built or a lantern hung to mark the landing.

When the current is strong and the water deep, foot troops cross on as broad a front as possible, the men marching abreast and holding hands. They should not look at the water but at the opposite shore.

Fords that are at all difficult delay long columns, unless the troops cross at several places at once. The crossing of many animals or wagons may deepen a ford and render it impassable; new places may thus become necessary.

The men enter pontons or barges singly at the bow or stern, and gradually move toward the stern or bow; larger vessels may be entered in column of twos; the men retain the places assigned them so as not to interfere with the handling of the boat; in small boats when the water is rough, they sit down; when there is danger of capsizing, they are directed to remove equipments.

Horses are loaded one at a time. When there is room for a single row only, they alternate heads and tails; if in two rows, they face inward. If a horse falls into the water, it is turned loose.

Wagons are generally loaded by hand; if practicable, the teams are sent on the same vessel.

Unloading is also from the bow, in good order, without crowding; men sitting down do not rise before their turn.

When rafts are used, special precautions are necessary. The center of the raft is first occupied and then the load uniformly distributed. Unloading is carried out in inverse order, the center of the load being last to leave.

9. CARE OF TROOPS

791. On the march, commanders of the larger units keep themselves informed of the condition of their commands and of the progress of subordinate units in rear.

Sources of water supply are examined by experts and marked good or bad. In countries infected with cholera or other harmful bacteria, this examination is imperative.

The drinking of any other beverage than potable water on the march is prohibited. Thirst should be quenched before starting by frequent small sips of water. On a march of ordinary length, the use of water should be limited to rinsing the mouth or the consumption of small amounts if the exertion is considerable or weather conditions require it. The drinking of water is often a matter of habit ; under ordinary conditions, a canteen of water should last a day's march. Soldiers should be trained to be economical in the use of water and to keep a small supply until their canteens can be replenished.

Commanders afford the men ample opportunity for replenishing their canteens, but this is done by order, not by straggling from the command. In certain cases, the inhabitants may be required to place water in vessels along the line of march for the convenient use of troops. A reserve supply of water for use in emergencies is carried on water-carts or wagons. On long marches through country deficient in water or where the water is bad, special measures for the organization of the water supply will be necessary.

Rations or lunches are not consumed until permission is given by the company commander.

Animals of wagon trains are watered while in camp — before departure and after arrival — or during a long halt. If time permits, they may be watered on the march from buckets or by unhitching and riding or leading to water.

One of the greatest sources of hardship on a march, especially for infantry, is hot weather. Every precaution is taken to prevent suffering from this cause. Halting places are selected when practicable where there is shade and free circulation of air, and the men are cautioned against drinking too much water. Green leaves or moist handkerchief in the hat afford relief from the hot rays of the sun. If the men are overheated, care is taken to prevent them being chilled by exposure to cold winds or drafts.

Abraded and blistered feet should be promptly dressed. At the end of each march, company commanders will when practicable require that feet be bathed and dressed, and footgear changed.

CHAPTER VIII. — SHELTER

1. PREPARATION

792. Arrangements for sheltering troops should as far as practicable be made before their arrival. The preparations for quartering a command are made by means of quartering parties. Quartering parties are sent out not only by troops changing station but also when practicable by troops on the march, whether they are to be sheltered in billets or in camp.

793. The duties of quartering parties are :

To select the camp site or billeting area when this has not been already definitely determined, and make arrangements its occupancy with the proper authorities ;

To apportion the camping or billeting area among the subordinate units of the command, and allot to each the available facilities for its administration and supply ;

To reserve facilities for the general service of administration, supply, and command (interior guards, headquarters, infirmaries, etc.) ;

In special cases to secure supplies ;

In general to take the necessary measures to insure that all agencies of command, administration, and supply continue functioning with the least possible interruption after the arrival of the command.

794. The basis of the apportionment is the quartering capacity of the town or area obtained from the town major, the local authorities, or by other means, and the strength of each unit in officers, men, animals, and vehicles furnished by the command.

Billets are allotted by the assignment of sections of the town to units. Subordinate units re-allot subsections, streets, or houses to their component units. Companies allotted to a street should occupy both sides of the street.

Each section should have easily recognizable boundaries.

When tactical considerations are controlling, the distribution of the troops must be made with regard to combat. Machine-gun companies and one-pounder and light-mortar units should be near their carts on the side of the town opposite to the enemy.

Units with animals and transportation are billeted or camped near watering places and places suitable for the parking of wagons.

In arranging camps, bivouacs, or billets, battalions, companies, platoons and squads will be kept together in order to facilitate control.

The minimum floor space required for each man in billets is 6 ¾ feet by 2 ½ feet. Wherever space permits, each man should have 40 square feet of floor space. When space in buildings is insufficient for billeting the entire command, a portion of the command may be camped or bivouacked in gardens, public squares, etc., or outside of the town (close billets).

795. The composition of a quartering party will vary depending on the time and transportation available, and whether the command is on the march in campaign or changing station or billeting area.

796. A quartering party of a regiment on the march will comprise :

A line or tactical staff officer (quartering officer) ;

A supply officer ;

A medical officer ;

Battalion sergeant-major or other representative from each battalion ;

Mess sergeant and supply sergeant of each company.

When practicable, the quartering party will include the officer of the day, a detail of the guard, and two men of each company for fatigue.

Motorcycles, bicycles, or mounts should, when necessary, be supplied to members of the quartering party.

A quartering party of a battalion acting alone or in a detached area is similarly constituted.

The quartering officer commands the quartering party. When several units are to occupy the same area, the senior quartering officer is in command of all parties.

The quartering officer places the quartering party in charge of the senior soldier present and directs it to proceed to a designated point in or near the quartering area. Accompanied by the supply officer, medical officer, and several soldiers, he then proceeds to the quartering area. On arriving in the quartering area he arranges, in accordance with army regulations, orders or the local law, with the Town Major, the local officials, or private parties for the necessary areas, shelters, or supplies. He allots areas, sections, or districts to the battalions, the machine-gun company, headquarters company, and supply company and reserves suitable accomodations or locations for regimental headquarters, the guard, and the infirmary. He locates an assembly place for the regiment (usually outside of the town or on the side of the camp toward the enemy) and

designates water sources for men, animals and bathing. He requires the medical officer to determine and report upon the sanitary conditions of the area and its water supply. He placards contaminated water sources and forbidden areas, arranges for traffic control, police regulation, and prevention of fires. On arrival of the guard detail, he posts a guard for the proper security and control of the area (sentries over water sources, at village exits, etc.).

Battalion sergeants-major select from the area or district allotted to them suitable accommodations for battalion headquarters and staff, locate if necessary a battalion assembly place, and distribute the battalion area to the companies. Supply sergeants representing companies determine the capacity of shelters and subdivide the area among the platoons, reserving a proper place for company headquarters, officers' quarters, kitchens, stables and latrines, select a company assembly place and placard the company area so as to show all assignments. The mess sergeant secures the necessary supplies.

In the case where camps are to be established, the location of the different units and their officers' quarters, kitchens, picket lines, and latrines is established in accordance with the plan fixed by the quartering officer (Plate VIII).

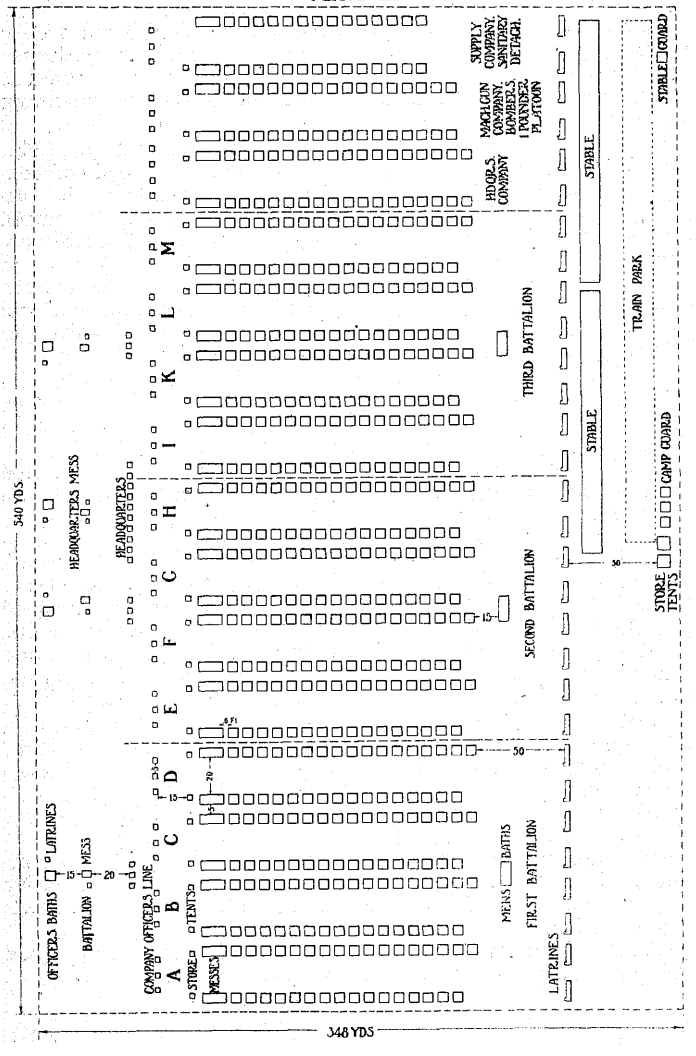
After the quartering officer has completed his dispositions, he rejoins the command, accompanied by the medical officer, and reports to the commanding officer of the troops. Battalion and company quartering parties remain in the quartering area, and when necessary and practicable, send a soldier to their organization commanders to serve as a guide.

On arriving in the quartering area, companies are marched to their assembly places, and before being marched to their quarters, the men are instructed as to the location of the company assembly place, company headquarters, and the regimental or battalion infirmary and as to messing arrangements, time of next assembly, service calls, and the local orders and regulations in force. Details for guard, fatigue, etc., are published and the sick are formed and sent to the infirmary for treatment.

When the command is to be sheltered in billets, the companies should be held at their assembly places until all billeting arrangements are completed. Each platoon leader then marches off his platoon; before dismissal, he informs his men as to the location of his own quarters and those of the captain, and as to the hour when men are to be permitted to leave the platoon area, assigns squads to their shelters, makes arrangements for lighting, preparations for extinction of fire, digging of la-

CAMP OF A REGIMENT OF INFANTRY. WAR STRENGTH.

38.8 ACRES
PLATE VIII



trines, placing of urinal buckets, etc. He inspects his area, requires it to be properly policed, and orders the necessary cleaning of arms and equipment.

797. When in close proximity to the enemy and troops must be disposed in camp or bivouac in accordance with tactical requirements, the reconnaissance of the camp site and the distribution of the units must be made by the commanding officer of troops.

798. If the area of the available ground is sufficient and suitable, the camp of the battalion or regiment should conform to Plate VIII. Under similar favorable conditions, the brigade may camp in column or in line of regiments. When the camp site has a restricted area, intervals and distances are reduced.

Under service conditions, camp sites that will permit the encampment of regiments and brigades as above indicated will not often be available, and regularity must be sacrificed to drainage, sanitation, and ease of communication.

2. ADMINISTRATION

799. When troops of different organizations are sheltered in the same town or camp, the senior line officer is the town or camp commander.

The camp or town commander regulates interior and exterior guard service, traffic control, police control of soldiers and, in hostile territory, of the inhabitants, the readiness of the command for action, and if a town major has not been assigned to the town, the distribution of quarters to incoming units, and all relations with the civil authorities. The town commander may designate an Acting Town Major when a permanent Town Major has not been assigned to the town.

800. The duties of the Acting Town Major will vary widely, depending on the length of occupancy of the billeting area by the command and on whether the area is in friendly or hostile territory. Duties which may be assigned to him include :

The conduct of all transactions between the troops and the civil authorities and inhabitants ;

The keeping of a complete and accurate list of all accommodations, showing for each building or premises the capacity in officers, men, offices, store rooms, animals and other needs to be anticipated ;

The assignment of accommodations to incoming troops and preparation of a supply of rough maps for their use ;

Location and maintenance of suitable latrines, baths, water, washing and incinerating facilities ;

Arrangements for the disposal of refuse, fire protection, and traffic regulation ;

Establishment of necessary direction signs at all points where they will be of service ;

Marking of buildings and premises as to capacity and use ;

In hostile territory, police surveillance of the inhabitants, counter-espionage measures, etc.

In regiments and larger units, a senior officer may be assigned to this duty and charged with supervision of the service of interior guards and other security measures.

801. In each camp and occupied town, an officer of the day is detailed. He reports to the camp or town commander for orders, or to the Acting Town Major when the guard is under the latter's orders. He is in command of all interior guards and is responsible for the execution of the necessary security measures, police regulations and standing orders.

In each battalion, one officer, in each company, one non-commissioned officer, are detailed to remain constantly on duty in the battalion or company. Immediately after their arrival in camp or cantonment, they report for instructions to the officer of the day. They are responsible for the maintenance of order and the execution of all regulations or orders given by the camp or town commander or the commander of their unit. They communicate all instructions received to their organization commanders at the first opportunity.

802. An interior guard is established in each camp and occupied village. Sentries should be posted at village exits, over picket lines, and wagon parks. Each unit furnishes the sentries required within its own section or area ; such sentries constitute part of the camp or town guard and are posted under its direction. The establishment of exterior guards (outguards, provost guards) may also be necessary.

The conduct of interior guards is governed by the provisions of the *Manual of Guard Duty*.

Special security measures are necessary in the case of occupied towns in hostile territory (stronger guards, patrolling in and in the vicinity of the town, guarding bridges, searching houses for telephone installations, holding of hostages, quartering of men in assembled units, closing of exits to all except military traffic, etc.).

803. When commands are billeted in towns, special precautions for the prevention of fire should be taken (provision for buckets filled with water, regulation of cooks fires, etc.).

The use of lights must be restricted and controlled, especially where there is danger of aerial bombardment.

804. When quartered in the theatre of active operations, each unit must be in such state of readiness for action that it can prepare to move on the shortest possible notice. Men sleep fully dressed, arms and equipment close at hand. On the sounding of the *Call to Arms, Assembly* or *Fire Call,* units assemble at their prescribed assembly places and proceed to the assembly place of the next higher unit or to other specially designated points.

Assembly places should be so located that units or members thereof do not cross each other's path in assembling.

805. Under circumstances where hostile aerial bombardment may be expected, concealment and dispersion of the camp in order to avoid or minimize its effects are necessary. Concealment can best be secured by camping in wooded areas; measures must be taken to prevent betraying the location of the camp through the formation of paths or trails. In permanent or semi-permanent camps or cantonments, partial protection against the effects of aerial bombardment is secured by the construction of embankments around huts or tents, by sinking the floors below the ground level, or by excavating lengths of zigzag trench to be occupied in case of alarm. Lookouts are posted to give warning of the approach of hostile aircraft, and provision made for sounding the alert. Troops at drill, when necessary, establish lookouts for the same purpose.

During concentrations prior to and during operations, troops and transportation in billets must be kept under cover from aerial observation during daylight hours.

806. The quarters of the camp or town commander should be so located that they can be easily found; at night, they should be marked by a shaded lantern. All sentries should be instructed as to the location of the commander's quarters so that messengers can be directed to it. Placards showing the name of the town and unit occupying it and the direction of routes should be posted at town exits.

807. In a prolonged occupation of a town, cantonment, or permanent camp, the provisions of the Army Regulations and orders relative to the interior economy of units in garrison apply.

3. SANITATION

The Selection of Camp Sites

808. In campaign, tactical necessity may leave little choice in the selection of camp sites, but under any conditions, the requirements of sanitation should be given every consideration consistent with the tactical situation.

809. In general, the following principles govern the selection of camp sites :

The site should be convenient to an abundant supply of pure water.

Good roads should lead to the camp. Interior communication throughout the camp should be easy.

Wood, grass, forage, and supplies should be at hand or easily obtainable.

The area should accomodate the command without crowding and without compelling the troops of one unit to pass through the area of another.

The site should be sufficiently high and rolling to drain off storm water readily, and if the season be hot, to catch the breeze. In cold weather, it should preferably have a southern exposure with woods to the north to break the cold winds. In warm weather, an eastern exposure, on ground moderately shaded by trees, is desirable.

The site should be dry. For this reason, porous soil, covered with stout turf and underlaid by a sandy or gravelly subsoil, is best. A site on clay soil or where the ground water approaches the surface is damp, cold, and unhealthful.

Alluvial soils, marshy ground, and ground near the base of hills, or near thick woods or dense vegetation, are undesirable as camp sites on account of dampness. Ravines and depressions are likely to be unduly warm and to have insufficient or undesirable air currents.

Proximity to marshes or stagnant water is undesirable on account of the dampness, mosquitoes, and the diseases which the latter transmit. The high banks of lakes or large streams often make desirable camp sites.

Dry beds of streams should be avoided ; they are subject to sudden freshet.

810. The occupation of old camp sites is dangerous, since they are often permeated by elements of disease which persist for considerable periods. Camp sites must be changed promptly when there is evidence of soil pollution or when epidemic disease threatens, but the need for frequent changes on this

account may be a reflection on the sanitary administration of the camp.

Water Supply

811. Immediately on making camp, bivouac, or billets, a guard should be placed over the water supply. If the water be obtained from a stream, places should be designated: (1) for drawing water for drinking and cooking; (2) for watering animals; (3) for bathing and washing clothing. These are located in the order stated, beginning upstream.

If the stream be small, the water supply may be increased by building a dam. Small springs may be dug out and lined with a gabion, a barrel or box with both ends removed, or with stones; the space between the lining and the earth is filled with puddled clay. A rim of clay is built around the spring to keep out surface drainage. The same method may be used in constructing small reservoirs near the borders of swamps, streams, or lakes for the purpose of increasing or clarifying the water supply.

812. Water that is not known to be pure should be purified by use of the water bag and the chemicals furnished. If these are not available, it may be boiled 20 minutes, than cooled.

813. Arrangements are made for men to draw water from the authorized receptacles by means of a spigot or other similar means. The dipping of water from the receptacles or the use of a common drinking cup is prohibited.

Improvised Kitchens

814. Camp kettles can be hung on a support consisting of a green pole lying in the crotches of two upright posts.

A narrow trench for the fire, about one foot deep, dug under the pole, not only protects the fire from the wind but saves fuel. A still greater economy of fuel can be effected by digging a similar trench slightly narrower than the diameter of the kettles, placing the kettles on the trench and filling the space between the kettles with stones, clay, etc. A flue is thus provided running beneath the kettles. The trench should be dug in the direction of the wind. The draft can be improved by building a chimney of stones, clay, etc., at the leeward end of the flue.

Four such trenches radiating from a common central chimney will give one flue for use, whatever may be the direction of the wind.

A slight slope of the flue, from the chimney down, provides for drainage and improves the draft.

815. A lack of portable ovens can be met by ovens constructed of stone and covered with earth to retain the heat. If no stone is available, an oven may be constructed by laying an empty barrel with one head out on its side and covering it with wet clay to a depth of six or more inches and then with a layer of dry earth of the same thickness. A clay flue is constructed above the closed end of the barrel, which is then burned out with a hot fire. This leaves a baked clay covering for the oven.

An oven can be similarly constructed with boards or even brushwood, supported on a horizontal pole resting on upright posts, covered and burnt out as in the case of the barrel.

An oven may be constructed by excavating a recess in a clay bank.

To bake with ovens of the type above described, first heat them and then close flues and ends.

816. Food must be protected from flies, dust, and sun. Facilities must be provided for cleaning and scalding the mess equipment of the men. Kitchens and the ground around them must be kept scrupulously clean.

817. Solid refuse should be promptly disposed of by being burned in the kitchen fire or in an improvised crematory, or by burial or by removal by scavengers.

818. In temporary camps, if the soil is porous, liquid refuse from the kitchens may be strained through gunny sacking into seepage pits dug near the kitchen. Flies must not have access to the pits. Boards or poles, covered with brush or grass and a layer of earth, may be used to cover the pits. The strainers should also be protected from flies. Pits of this kind, dug in clayey soil, will not operate successfully. When troops camp or bivouac for one night only, shallow kitchen sinks should be dug. If cooking be individual, the men should be required to build their fires on the leeward flank of the camp or bivouac.

Before marching, all sinks should be filled in, mounded, and marked.

Disposal of Excreta

819. Immediately on arrival in camp, bivouac, or billets, sinks should be dug. This is a matter of fundamental sanitary importance, since the most serious epidemics of camp diseases are spread from human excreta, by carriage of elements of disease from them by flies, or by the pollution of the water supply through drainage into it.

Sinks are usually provided for each company on the basis of one seat to each ten men, two linear feet of trench length per seat. One sink, with seats in the same proportion, is provided for the officers of each battalion. Those for the men are invariably located on the side of camp opposite the kitchens. All latrines should be at least 100 yards from any kitchen. They should be so placed that they cannot pollute the water supply or camp site as a result of drainage or overflow. For this purpose, their location and their distance from camp may be varied.

Open pits are dangerous during the fly season. The danger may be greatly reduced by requiring each individual to cover his excreta with earth or by a thorough daily burning of the entire area of the trench. Combustible sweepings or straw, saturated with oil, may be used for this purpose. When filled to within two feet of the top, sinks should be discontinued, filled in, mounded up, and marked by a proper sign.

820. For long halts or when camp is made for a single night, straddle trenches 15 inches deep, 8 to 10 inches wide, and 24 inches long, in the proportion of one to each ten men, will suffice.

In camps of longer duration, the trenches should be two feet wide, at least six feet deep, and of sufficient length to provide the proper ratio of seats to persons using them. They should be provided with a pole for a seat and a back rest and should be screened with brush or canvas.

When boards are obtainable, either a fly-proof trench cover with squatting-holes and lids or conventional box seats with hinged, falling lids should be provided.

Urinal troughs, discharging into the trenches, should be provided.

In permanent camps or billets, urinal tubs will be placed in company streets at night and removed at reveille. Their location should be plainly marked, and the tubs should be thoroughly and frequently disinfected.

4. CARE OF TROOPS

821. Insufficient rest renders troops unfit for hard work and diminishes their power of resisting disease. Commanders should therefore, whenever possible, secure for the troops their accustomed rest.

The rules of sanitation are enforced.

Men should not lie on damp ground. In temporary camps and in bivouac, they raise their beds, if suitable material such

as straw, leaves, or boughs can be obtained, or use their ponchos or slickers as a ground sheet. In cold weather and when fuel is plentiful, the ground may be warmed by fires ; the men make their beds after raking away the ashes.

When troops are to remain in camp for some time, all underbrush is cleared away, and the camp made as comfortable as possible. Watering troughs, shelter in cold weather, and shade in hot weather are provided for the animals, if practicable.

In camps of some duration, guard and other routine duties follow closely the custom in garrison. The watering, feeding, and grooming of animals take place at regular hours and under the supervision of officers.

The camp is policed daily after breakfast, and all refuse matter burned.

Tent walls are raised and the bedding and clothing aired daily, weather permitting.

CHAPTER IX. — SERVICE OF SECURITY

822. The security of a command is insured by covering detachments. During an advance, these comprise advance guards ; during a retreat, rear guards ; in camp or cantonment, outposts. The security of the flanks of a marching command is, when necessary, afforded by flank guards. The detail of a rear guard during an advance and of an advance guard during a retreat may sometimes be necessary. Patrols enter into the composition of all forms of covering detachments.

1. PATROLS

823. The following paragraphs on patrols relate in particular to the conduct of the patrol and its leader, and apply to patrols employed in covering detachments as well as in combat reconnaissance.

824. A patrol is a detachment, varying in strength from two men to a company, sent out from a command to gain information of the country or of the enemy or his defenses, or to prevent the enemy from gaining information. In special cases, patrols may be given missions other than these.

825. The commander must have clearly in mind the purpose for which the patrol is to be used in order that he may determine its proper strength, select its leader, and give the latter proper instructions.

826. The missions of patrols may be :

Before combat, to keep in touch with the enemy and observe his movements or to prevent the enemy from observing the movements of our own troops ;

During combat, to keep in touch with units on the flanks and prevent the enemy from turning or attacking the flanks of our own forces ;

After combat, to reconnoiter the enemy position or to seize tactical features in front of the line reached by the assaulting infantry ; or to cover the consolidation of the line ;

In general, to reconnoiter some portion of the enemy's forces or position, or some natural or artificial geographic feature, and obtain information relative thereto.

As a rule a patrol is sent out for one definite purpose only. Indefiniteness as to mission results in a hesitant and defensive attitude on the part of the patrol.

827. The strength of a patrol varies from two or three men to a company. It is made strong enough to accomplish its purpose and no stronger.

If the purpose is to gain information only, a small patrol is better than a large one. The former conceals itself more readily and moves less conspicuously. For observing from some point in plain view of the command or for visiting or reconnoitering between outguards, two men are sufficient.

If messages are to be sent back, the patrol must be strong enough to furnish the probable number of messengers without reducing the patrol to less than two men. If hostile patrols are likely to be met and must be driven off or if the mission be the capture of prisoners, the patrol must be strong.

In friendly territory, a weaker patrol may be used than would be used for the corresponding purpose in hostile territory.

828. The character of the leader selected for the patrol depends upon the importance of the work in hand.

For patrolling between the groups or along the lines of an outpost or for the simpler patrols sent out from a covering detachment, the average soldier will be a competent leader.

829. For a patrol sent out to gain information or for a distant patrol sent out from a covering detachment, the leader must be specially selected. He must be able to cover large areas with few men ; he must be able to estimate the strength of hostile forces, to report intelligently as to their dispositions, to read indications, and to judge as to the importance of the information gained. He must possess endurance, courage, and good judgment.

The officer sending out the patrol verifies the detail, designates a second in command, and gives the necessary instructions. His instructions are full and clear. The patrol leader is given such information of the enemy and country as may be of value to him. He is informed as to the general location of his forces, particularly of those with whom he may come in contact. He must be made to understand exactly what is required of him, where to go, when to return, and where messages are to be sent or the patrol is to report. If possible, he is given a map of the country he is to traverse, and in many cases, his route may be specified. Sentries are notified as to the patrols operating in their front.

The officer sending out the patrol must be certain that his instructions are understood.

Besides his arms and ammunition, the patrol leader, is equipped with a luminous compass, a watch, a pencil, a note book,

a flash light, and when practicable, field message blanks and a map of the country.

The patrol leader assembles the men detailed for the patrol. He inspects their arms and ammunition and satisfies himself that they are in suitable condition for the duty. He sees that none has any papers, maps, etc., that would be of value to the enemy if captured. He sees that their accoutrements do not glisten or rattle when they move. He then repeats his instructions to the patrol and assures himself that every man understands them. He explains the signals to be used and satisfies himself that they are understood.

830. No normal formation for a patrol is, or should be, prescribed. The formation and the movements of the patrol must be regulated so as to render probable the escape of at least one man in case the patrol encounters a superior force. The formation will depend upon the nature of the ground traversed and the cover afforded. The leader must adopt the formation and measures best suited to the accomplishment of his object.

In general, it should have the formation of a main body with advance, rear, and flank guards, though each be represented only by a single man.

831. The distances separating the members of the patrol vary according to the ground and the proximity of the enemy. If too close together, they see no more than one man ; if too widely separated, they are likely to be lost to the control of the leader. When at close range from an enemy whose position has been located and at night, the formation of the patrol is relatively close.

832. In general, a patrol advances from one intermediate point to another along its route of advance by bounds, successive positions being reconnoitered as far as practicable before leaving the preceding position. The country must be carefully observed as the patrol advances. In passing over a hill, the country beyond is first observed by one man ; houses, inclosures, etc., are approached in a similar manner or avoided entirely ; woods are generally reconnoitered in a thin skirmish line when the object is to determine whether they are occupied ; in passing through woods on other missions, the patrol is kept together and protected by the necessary scouting.

833 In questioning civilians, caution is observed not to disclose any information that may be of value to the enemy. Strangers are not allowed to precede the patrol. Patrol leaders are authorized to seize telegrams and mail matter and to arrest individuals when necessary.

834. When a patrol is scattered, it reassembles at some point

previously selected ; if cut off, it returns by detour or forces its way through. As a last resort, it scatters so that at least one man may return with the information.

835. The strength and the composition of hostile troops must be observed. If they cannot be counted, their strength may be estimated by the length of time a marching column consumes in passing a given point or by the area covered if in camp.

Infantry in column of squads may be assumed to occupy half a yard per man, cavalry in column of fours 1 yard per trooper, and artillery in single column 20 yards per gun or caisson. A given point is therefore passed in one minute by about 175 infantry ; 110 cavalry at walk ; 200 cavalry at trot ; 5 guns or caissons. For troops in column of twos, this estimate is reduced by one half.

Patrol leaders should if practicable know the uniforms of the various enemy organizations in order that they may be able to determine the class of troops seen when no other indications are available.

Insignia from the enemy's uniforms, picked up by patrols, often convey valuable information by indicating what troops are in the vicinity.

836. Patrols avoid fighting, except in self-defense or in order to prevent the enemy's patrols from gaining valuable information, or when necessary in order to accomplish their mission. In such cases, a patrol fights resolutely even though inferior in numbers.

837. Information gained by patrols is generally of no value unless received in time to be of use to the commander. Patrol leaders must therefore send back information of importance as soon as it is gained, unless the patrol itself is to return at once.

838. If written, messages state the place, date, hour, and minute of their dispatch. The information contained in them is clearly and concisely expressed. They are signed by the patrol leader.

The authorized message book is used, and the form therein adhered to. In pertinent cases, messages are accompanied by a sketch. Where a map reference is necessary, the name of the map is stated. The source of all information is given. Negative information may be of value.

839. If the message be verbal, the patrol leader requires the messenger to repeat it before starting back. In general, a verbal message covers but one point. Except when there is little chance of error in transmission, messages are written. The messenger must clearly understand where the message is to

be delivered and the route to be followed. Verbal messages are subsequently confirmed in writing when practicable.

840. When in friendly territory and not very far from friendly troops, one messenger is sufficient unless the message is very important. In hostile territory, either two men go together, or the message is sent in duplicate by different routes.

841. Whether the information gained is of sufficient importance to be reported at once or may await the return of the patrol is a question which must be decided in each case. In case of reasonable doubt, it is generally better to send the report promptly. If the patrol leader has received proper instructions before starting out and has the requisite ability to lead a patrol, he can generally decide such questions satisfactorily as they arise.

842. Infantry patrols are generally used for work within two miles of supporting troops, but cases arise where they must go to greater distances.

For distant patrolling, a mounted patrol under an officer is detailed.

843. For controlling the movements of the patrol, the leader makes use of the arm signals prescribed in these regulations when practicable.

On account of the short distances separating them, members of the patrol ordinarily communicate with each other quietly by word of mouth.

When a member of a patrol is sent to a distant point, communication may be effected by means of simple, prearranged signals. In addition to the signals prescribed in paragraph 43, the following signals should be clearly understood by members of a patrols :

Enemy in sight in small numbers : hold rifle above head horizontally.

Enemy in force : same as preceding, raising and lowering the rifle several times.

For communicating with the units from which they are sent out, it will often be advantageous to equip patrols with signal projectors.

2. MARCH PROTECTION

General Considerations

844. A column on the march in the vicinity of the enemy is covered by detachments called advance guards, rear guards, or flank guards. The object of these covering detachments

is to facilitate the march of the main body and to protect it from surprise or observation.

They facilitate the march of the main body by promptly driving off small bodies of the enemy who seek to harass or delay it, by removing obstacles from the line of march, by repairing roads, bridges, etc., thus enabling the main body to progress uninterruptedly in convenient marching formations.

They protect the main body by preventing the enemy from firing into it when in close formation, by holding the enemy and enabling the main body to deploy before coming under the effective fire, by preventing its size and conditions from being observed by the enemy, and in retreat, by gaining time for it to make its escape or to reorganize its forces.

845. Tactical unity is respected in making details for covering detachments.

846. The march order of the whole command explains the situation, details the commander and troops for each covering detachment, specifies the route to be taken and the approximate distance to be maintained between the main body and its covering detachments and directs such reconnaissance as the commander specially desires to have made. When practicable, the front to be covered by reconnaissance is specified.

The order of the commander of a covering detachment clearly explains the situation to subordinates, assigns the troops to the subdivisions, prescribes their approximate distances, and orders such special reconnaissance as may be deemed immediately necessary.

An advance or flank-guard commander marches well to the front, and from time to time, orders such additional reconnaissance or makes such changes in his dispositions as the circumstances of the case demand.

Advance Guards

847. An advance guard is a detachment of the main body which precedes and covers it on the march.

848. The advance-guard commander is responsible for its formation and conduct. He should bear in mind that its purpose is to facilitate and protect the march of the main body. Its own security must be effected by proper dispositions and reconnaissance, not by timid or cautious advance. It must advance at normal gait and search aggressively for information of the enemy. Its action when the enemy attempts to block it with a large force depends upon the situation and plans of the commander of the troops.

849. The strength of the advance guard varies from one-twentieth to one-third of the main body, depending upon the size of the main body and the service expected of the advance guard.

850. The formation of the advance guard must be such that the enemy will be met first by a patrol, then in turn by one or more larger detachments, each capable of holding the enemy until the next in rear has time to deploy before coming under effective fire.

851. Generally, an advance guard consisting of a battalion or more is divided primarily into a **reserve** and a **support.**

852. In an advance guard consisting of one battalion, the machine guns, if any, usually form part of the reserve. In an advance guard consisting of two or more battalions, machine guns are assigned to the support and the reserve. Light mortars, one-pounder guns, and accompanying artillery march with the reserve ; the pioneer platoon is attached to the support.

853. Connection between the elements of an advance guard s maintained from rear to front, unless otherwise expressly ordered.

854. The **support** sends forward an **advance party.** The advance party, in turn, sends a patrol called a **point** still farther to the front. Patrols are sent out to the flanks when necessary. When the distance between parts of the advance guard or the nature of the country is such as to make direct communication difficult, connecting files march between the subdivisions to keep up communication. Each element of the column sends the necessary connecting files to its front. Cyclists and mounted orderlies may often be advantageously employed for the maintenance of connection.

855. The functions of the several fractions of the advance guard determine the distribution of the advance-guard troops.

The reserve constitutes the maneuvering and offensive element of the advance guard ; it therefore comprises as large a proportion of the advance guard as is consistent with its own security and the preservation of its maneuvering power.

The function of the support is in principle the security of the reserve and the offering of such resistance at various points on the front of the advance as will enable the reserve to deploy for action at points of decisive importance. It is given sufficient strength to carry out its reconnoitering and resisting function.

The advance party constitutes the reconnoitering element of the support ; it is made strong enough to furnish the patrols required for the reconnaissance of the front of the advance,

and secure the march of the support. In addition to the reconnaissance of the advance party it will frequently be necessary to send out detached patrols from the support and reserve.

In supports of a strength equalling or exceeding three companies, a company usually constitutes the advance party. In small supports, it will frequently be advantageous to retain the entire support in one body and send out the point and other patrols directly from it.

856. The distances separating the parts of an advance guard vary according to the mission of the whole force, the size of the advance guard, the proximity and character of the enemy, the nature of the country, etc. They increase as the strength of the main body increases ; they are less when operating in rolling, broken country than in open country ; when in pursuit of a defeated enemy than against an aggressive foe ; when operating against cavalry than when against infantry.

If there be a mounted point, the infantry maintains its gait without reference to it ; the mounted point regulates its march on the infantry.

857. To afford protection to an infantry column, the country must be observed on each side of the road as far as the terrain affords positions for effective rifle fire upon the column. If the country that it is necessary to observe be open to view from the road, reconnaissance may not be necessary.

858. The advance guard is responsible for the necessary reconnaissance of the country on both sides of the line of march. Special reconnaissance may be directed by the commander of the troops, or cavalry may be reconnoitering at considerable distances to the front and flanks, but this does not relieve the advance guard from the duty of local reconnaissance.

859. Patrols are sent to the flanks when necessary to reconnoiter a specified locality and rejoin the column and their proper subdivision as soon as practicable.

Where the country is generally open to view, but localities in it might conceal an enemy of some size, reconnaissance is necessary. Where the road is exposed to fire and the view is restricted, a patrol is sent to examine the country in the direction from which the danger threatens. The object may be accomplished by sending patrols to observe from prominent points. When the ground permits and the necessity exists, patrols may be sent to march abreast of the column at distances which permit them to see important features not visible from the road.

Mounted men or cavalry, when available, are used for flank patrols.

860. Cases may arise where the best means of covering the head and flanks of the column will be by a line of skirmishers extending for several hundred yards to both sides of the road, and deployed at intervals of from 10 to 50 yards. A column may thus protect itself when passing through country covered with high corn or similar vegetation. In such case, the vegetation forms a natural protection from rifle fire beyond very short ranges.

861. Fixed rules for the strength, formation, or conduct of advance guards cannot be given. Each case must be treated to meet conditions as they exist. That solution is generally the best which, with the fewest men and unbroken units, amply protects the column and facilitates the advance. When in close contact with the enemy and passing through the zone of his artillery fire, the larger fractions of the advance guard advance in approach formation.

Rear Guards

862. A rear guard is a detachment detailed to protect the main body from attack in rear. In a retreat, it checks pursuit and enables the main body to increase the distance between it and the enemy and to re-form if disorganized.

The general formation is that of an advance guard reversed.

863. The commander takes advantage of every favorable opportunity to delay the pursuers by obstructing the road or by taking up specially favorable positions from which to force the enemy to deploy. In this latter case, care must be taken not to become so closely engaged as to render withdrawal unnecessarily difficult. The position taken is selected with reference to ease of withdrawal and ability to bring the enemy under fire at long range (see pars. 611, 612).

864. Machine guns and infantry batteries and single guns form a very important part of the rear guard.

Flank Guards

865. A flank guard is a detachment detailed to cover the flank of a column marching past, or across the front of, the enemy. It may be placed in position to protect the passage, or it may be so marched as to cover the passage.

866. The object of the flank guard is to hold the enemy in

check long enough to enable the main body to pass, or like the advance guard, to enable the main body to deploy.

Like all other covering detachments, it is made no stronger than is necessary; it is detailed only when special flank protection is required.

867. Practicable communication must exist between the flank guard and the main body.

868. The flank guard is marched in the same manner as a separate command; that is, with advance or rear guards or both, as circumstances demand, and with patrolling on the exposed flank.

869. At times it may be necessary for an advance-guard commander to send out large reconnoitering parties which temporarily assume the character and duties of a flank guard. Such parties are given specific orders as to when and where they are to rejoin the column.

870. When the direction of the advance of the main body changes, the former advance guard may become a flank guard; a new advance guard is then detailed.

3. OUTPOSTS

General Considerations

871. An outpost is a covering detachment detailed to secure a camp, cantonment, bivouac, or a defensive position against surprise, to prevent an attack upon it before the troops can prepare to resist, and to deny to the enemy observation into their dispositions and movements.

The outpost carries out such reconnaissance as is necessary for the security of the resting troops. When in contact with the enemy, it is responsible that such contact is not lost when the enemy withdraws in front of the position.

872. The size and the dispositions of the outpost will depend upon many circumstances, such as the size of the whole command, the proximity of the enemy and the situation with respect to him, the nature of terrain, etc.

A suitable strength may vary from a very small fraction to one-third of the whole force. For a single company in bivouac, a few sentinels and patrols will suffice; for a large command, a more elaborate outpost system must be provided. It should be no stronger than is consistent with reasonable security.

The most economical protection is furnished by keeping close contact with the enemy by means of outpost patrols,

in conjunction with resisting detachments on the avenues of approach.

873. In a brigade or smaller force on the march toward the enemy, the outpost is generally formed from the advance guard and is relieved the following day when the new advance guard crosses the line of outguards. In a retreat, the detail for outpost duty is generally made from the main body. The new outpost becomes the rear guard the following day.

874. When, as in large forces, an advance or a rear guard performs such duty for several days, the outpost during this period is furnished by the advance or the rear guard, and orders for the establishment of the outpost are issued by the advance or the rear-guard commander.

When the command is small and stationary for several days, the outpost is relieved daily. In large commands, the outpost will, as a rule, be relieved at intervals of several days. The period of outpost duty will largely depend on the severity of the service.

875. The positions held by the subdivisions of the outpost are generally prepared for defense, but conditions may render this unnecessary.

Troops on outpost keep concealed as much as is consistent with the proper performance of their duties ; especially do they avoid appearing on the sky line.

Outpost troops do not render honors.

Distribution of Outpost Troops

876. The outpost will generally be divided into three parts. These, in order from the main body, are the **reserve**, the **supports**, and the **outguards**.

The distances separating these parts, and their distance from the main body, will depend upon the object sought, the nature of the terrain, and the size of the command. There can be no uniformity in the distance between supports and reserve, nor between outguards and supports, even in the same outpost. The avenues of approach, facilities for observation, and other important features of the terrain will largely control their exact position.

877. The **reserve** of the outpost is held at some central point from which it can readily *support the troops in front by reinforcement or counter-attack or hold a rallying position* on which they may retire. It is generally located near the principal route leading from the enemy.

The reserve may comprise one-fourth to two-thirds of the strength of the outpost.

878. The supports constitute the line of resisting units of the outpost. They are the principal agencies of security of the outpost. In outposts equalling or exceeding the strength of a battalion, a support is usually constituted by a company.

The supports are numbered consecutively from right to left. They are placed at the more important points on the outpost line, usually on or near the line on which resistance is to be made in case of attack. Supports hold their positions, unless the orders of the outpost commander prescribe otherwise.

879. The movement of troops when not engaged in combat is for the most part confined to roads. As a general rule, therefore, roads exercise the greatest influence on the location of supports, and a support will generally be placed on or near a road. The sector which it is to cover is clearly define by means of tangible lines on the ground and is such that the support is centrally located therein.

Supports insure their own security by means of outguards and patrols.

880. The outguards comprise small detachments established by the supports for their own security and for the observation of the sector assigned to them. For convenience, they are classified as pickets, sentry squads, and cossack posts. They are numbered consecutively from right to left in each support.

Posts at a short distance from the support may be held by weak outguards (cossack posts, sentry squads) while important posts at a considerable distance must be more strongly held (pickets).

881. A picket is a group consisting of two or more squads, ordinarily not exceeding a platoon, posted in the line of outguards to cover a given sector. It furnishes patrols and one or more sentinels, double sentinels, sentry squads, or cossack posts for observation.

Pickets are placed at the more important points in the line of outguards, such as road forks. The strength of each depends upon the number of small groups required properly to observe its sector.

882. A sentry squad is a squad posted in observation at an indicated point. It posts a single or a double sentinel in observation, the remaining men resting near by and furnishing the reliefs of sentinels.

883. A cossack post consists of four men. It is an observation group similar to a sentry squad, but employs a single sentinel.

884. At night, it will sometimes be advisable to place some of the outguards or their sentinels in a position different from that which they occupy in the daytime. In such case, the ground is carefully studied before dark, and the change made at dusk. Where an outpost occupies a position for a considerable length of time in close proximity to the enemy, provision for a frequent change in the position of outguards must be made in order to avoid their capture by hostile raiding parties.

885. Sentinels are generally used singly in daytime, but at night, double sentinels will be required in most cases. Sentinels furnished by cossack posts or sentry squads are kept near their groups; those furnished by pickets may be as far as 100 yards away.

Every sentinel should be able to communicate readily with the body to which he belongs.

886. Sentinel posts are numbered consecutively from right to left in each outguard. Sentry squads and cossack posts furnished by pickets are counted as sentinel posts.

887. The arc of observation for which each sentry is responsible is clearly defined by definite terrain lines or points.

888. Instead of using outguards along the entire front of observation, part of this front may be covered by patrols only. Patrols are used to cover such sections of the front as can be crossed by the enemy only with difficulty and over which he is not likely to attempt a crossing after dark. They may also be used to supplement and extend the observation of sentries at night.

In daylight, much of the local patrolling may be dispensed with if the country can be seen from the posts of the sentinels. Patrols should, however, frequently be pushed well to the front unless the ground in that direction is exceptionally open.

889. Patrols or sentinels must be the first troops which the enemy meets, and each echelon in rear must have time to prepare for the blow. These echelons cause as much delay as possible without sacrificing themselves and gradually retire to the line where the outpost is to make its resistance.

890. Patrols must be used to keep up connection between the parts of the outpost except when, during daylight, certain fractions or groups are mutually visible. After dark, this connection must be maintained throughout the outpost except where the larger subdivisions are provided with wire communication. Wire communication should extend as far forward as the supports.

891. In addition to the ordinary outguards, the outpost commander may detail from the reserve one or more detached

posts to cover roads or areas or occupy important observation points not in the general line assigned to the supports.

In like manner, the commander of the whole force may order detached posts to be sent from the main body to cover important roads or localities not included in the outpost line.

The number and strength of detached posts are reduced to the absolute needs of the situation.

Prominent points within the outpost position in rear of the outguards which afford views over the foreground are occupied as observation posts.

892. When combat is imminent, the necessity for unity of command will usually require the establishment of separate outposts or outguards by the smaller units (regiments, battalions, or companies) in the first line. Higher commanders insure contact and cooperation between adjacent units.

When battle is interrupted by nightfall and troops bivouac on the battlefield, each first-line company insures its own security by posting outguards and sending out patrols.

Establishing the Outpost

893. The outpost is posted as quickly as possible so that the troops can the sooner obtain rest. Until the leading outpost troops are able to assume their duties, temporary protection, known as the **march outpost**, is furnished by the nearest available troops.

894. The halt order of the commander, besides giving the necessary information and assigning camp sites to the parts of the command, details the troops to constitute the outpost, assigns a commander therefor, designates the general line to be occupied, and when practicable, points out the position to be held in case of attack.

895. The outpost commander, upon receipt of this order, issues the outpost order with the least practicable delay ; it is of the first importance that the most essential measures be rapidly executed (*e. g.*, occupation of important road connections). In large commands, it may often be necessary to give the order from the map, but usually the outpost commander will have to make some preliminary reconnaissance, unless he has an accurate and detailed map.

The order gives such available information of the situation as is necessary to the complete and proper guidance of subordinates ; designates the troops to constitute the supports ; assigns their location and the sector each is to cover ; provides for the necessary detached posts ; indicates any special recon-

naissance that is to be made ; orders the location and dispositions of the reserve ; disposes of the train if same is ordered to join the outpost ; and informs subordinates where information will be sent.

896. Generally, it is preferable for the outpost commander to give verbal orders to his support commanders from some locality which overlooks the terrain. The time and the locality are so selected that the support commanders may join their commands and conduct them to their positions without causing unnecessary delay to their troops. If possible, the reserve commander receives his orders at the same time as the support commanders. Subordinates who receive orders separately are informed of the location of other parts of the outpost.

In large outposts, written orders are frequently most convenient.

After issuing the initial orders, the outpost commander inspects the outpost, completes his dispositions by more detailed orders, and sends his superior a report of his dispositions. He prescribes the degree of readiness for action and the conduct to be observed in case of attack.

He takes post where messages can most easily reach him and from which his orders can best be transmitted. His post must always be easy to find, especially at night. He must have at hand the necessary runners, cyclists, and mounted orderlies.

897. The reserve is marched to its post by its commander, who then sends out such detachments as have been ordered and places the rest in camp or bivouac, over which at least one sentinel should be posted. Connection must be maintained with the main body, the supports and nearby detached posts. The place of formation in case of alarm must be clearly designated and understood by all members of the reserve.

898. The supports march to their posts, using the necessary covering detachments when in advance of the march outpost. A support commander marches with the advanced elements of his support, reconnoiters the ground and prepares to issue his order. The order fully explains the situation to subordinates, or to the entire command, if it be small. It details the troops for the different outguards, or designates the units to furnish the outguards, and when necessary, defines the sector each is to cover and the patrolling to be carried out. It provides the necessary sentinels at the post of the support, the patrols to be sent therefrom, and arranges for the necessary intrenching, construction of barricades, etc. Connection is maintained with adjoining supports and with the outguards furnished by the support.

899. In posting his command, a support commander seeks to cover his sector in such manner that the enemy can not reach the position of his support in dangerous numbers and unobserved, or pass by it within the sector intrusted to it. On the other hand, he must economize men on observation and patrol duty, for these duties are unusually fatiguing. He must practice the greatest economy of men consistent with the requirements of practical security.

900. As soon as the posting of the support is completed, its commander inspects the dispositions and corrects defects, if any, and reports the disposition of his support, including the patrolling ordered, to the outpost commander. This report is preferably made by means of a sketch. Dispositions are also communicated to adjacent supports.

901. Each outguard is marched by its commander to its assigned station, and especially in the case of a picket, is covered by the necessary patrolling to prevent surprise.

Having reached the position, the commander explains the situation to his men and establishes reliefs for each sentinel and if possible, for each patrol to be furnished. Besides these sentinels and patrols, a picket must have a sentinel at its post.

The commander then posts the sentinels and points out to them the principal features, such as towns, roads, and streams, and gives their names. He gives the direction and location of the enemy, if known, and of adjoining parts of the outpost.

He gives to patrols the same information and the necessary orders as to their routes and the frequency with which the same shall be covered. Each patrol should, when practicable, go over its route once before dark.

The reliefs pertaining to each sentry post accompany the first relief at the original establishment of the post. The outguard commander prescribes whether they are to return to the post of the outguard or remain near the sentry on post as a sentry squad or cossack post.

902. Every picket maintains connection by patrols with outguards on its right and left. Each commander takes precautions to conceal his outguard and generally strengthens his position by entrenching.

4. SECURITY IN POSITION WARFARE

General

903. In case the position held by the front-line troops is not favorable for defensive combat or when for other reasons it is

inadvisable to offer the main resistance to a serious hostile attack in an advance position, a defensive position is selected further to the rear, and the ground in front lightly held by an outpost. This arrangement is especially necessary when the end of an engagement leaves our troops in a disadvantageous position for fighting a defensive engagement.

When an outpost zone is not held, the line of resistance is, as a general rule, preceded by a line of observation held by outguards detailed by first-line companies.

The general principles of security set forth in preceding paragraphs of these regulations are applicable to position warfare. More detailed prescriptions which are the consequence of the stationary character of position warfare are treated in succeeding paragraphs.

904. Position warfare permits of the development of a highly organized service of security and observation and requires in part the training of a specialized personnel. The organization of this service comprises : (1) guard service of the position ; (2) observation posts ; (3) night patrols in front of the accessory defenses ; (4) sniper's posts.

Guard Service

905. The first-line platoons are the principal organs of the guard service of the position. They furnish the sentry posts for the line of observation and the advanced posts.

Units in rearward echelons establish such sentries as are necessary to insure their own readiness for action and for giving the alarm in case of gas attack. At least one sentry for each shelter is posted.

906. One officer in each company and one noncommissioned officer in each platoon is constantly on duty. They are responsible to their respective commanders for the service of security of their units. They make frequent inspections to assure themselves of the vigilance of the sentries and observers and their proper instruction and ascertain whether they have any information about the enemy to report.

907. The duties of the noncommissioned officer on guard are :

To familiarize himself with the location and exact duties of each combat group of the platoon ;

To insure that sentries are alert, rifles loaded, gas-alarm apparatus in readiness ;

To verify the condition of loopholes ;

To verify the orders, written or verbal, which sentries transmit to each other ;

To make known to sentries the time of departure and return of patrols and their itinerary ;

To keep the flare pistol and fire it if suspicious noises are heard ;

To report to the officer on watch and the platoon leader all incidents of his tour and the arrival of a superior officer ;

To transmit to his successor the written or verbal orders and the panoramic sketch of the portion of the hostile position under observation.

908. Sentries may be posted directly from the first-line platoons by the noncommissioned officer on guard or from a sentry squad or cossack post.

909. Each sentry must be informed as to location of the post of his platoon leader and that of the sentry on each side and as to whether there are any patrols or working parties in front. Should there be any salients in our line, the sentry is instructed so as to avoid any possibility of his firing toward our trenches. All sentries are instructed as to the method of giving the gas alarm. At night, sentries are posted at the entrance to all shelters to arouse the occupants in case of attack or gas alarm. They are similarly posted during hostile bombardment to give warning when the enemy debouches for attack.

Sentries make as little noise as possible in challenging and advancing parties.

910. During the day, sentries observe through loopholes or by means of a periscope ; at night, they observe over the parapet.

911. Listening posts are advanced sentry posts (usually cossack posts) established at night to warn the front-line garrison of the approach of hostile raiding or attacking parties.

When the listening post is connected with the front-line trench by a communicating trench, arrangements must be made for blocking or barricading the latter by the sentinel, who falls back after giving the alarm (see Figure 53, page 84).

912. As advanced posts are easy prey for hostile raiding parties, their habitual use should be avoided and should be resorted to only when it has been impossible to precede the line of resistance by an observation parallel or for certain specific purposes such as observation of the accessory defenses when these are very wide, flanking the front of the trenches, etc.

913. Sentries are relieved every two hours except under unusual conditions. The number of sentries varies with the

proximity of the enemy's trenches, the character of the enemy, the nature of our own defenses, the field of view to the front, and the distribution of our own troops. A larger number of sentries is required at night than during the day.

914. The primary function of sentries is to insure the immediate readiness of the command in case of hostile attack and to offer the first resistance to the enemy's advance. The continuous surveillance of the hostile position for the purpose of collecting information relative to the enemy is carried out by the observation posts.

Both sentries and observers serve as lookouts.

Observation

915. The functions of observation posts are :

(*a*) To gather information relative to the enemy ; his daily life, habits, emplacements of his guns, movements carried out near the front, etc. ;

(*b*) To give the alarm in case of attack.

916. Each unit (platoon, company, battalion, etc.) furnishes the personnel for its own observation posts.

917. The posts of commanders should be established near their observation posts. The choice of the latter precedes that of the former. In each unit, a sufficient number of posts should, when practicable, be established to insure that the entire sector of the unit is under continuous observation.

918. The essentials of a good observation post are good field of view, concealment, and sufficient space for two men. The design of the post should permit of construction in a single night and the post should be rainproof and splinter proof. The equipment of the post will vary with its importance and the field of view. The more important posts should be equipped with a telescope, an alidade, map, panoramic sketch, luminous compass, protractor, luminous watch, note book and pencil.

919. Except in the first-line companies, observation posts should, when practicable, be located at some distance from the trenches so that they will not be included in the fire directed against them. Placing the observation posts near prominent points of the terrain should be avoided. Men should prohibited from walking about in the vicinity of observation posts. The posts and the passages leading to them should be carefully concealed and camouflaged. The formation of paths converging at a post should be particularly avoided.

For better protection and concealment, observation posts should when practicable be oblique to the front (Figure 56).

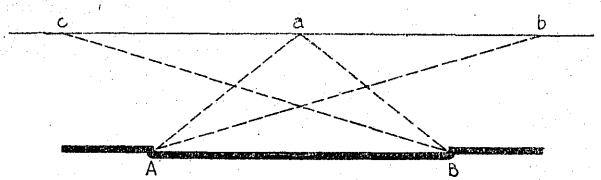


FIG 56

ab, Part of the enemy's trench observed by lookout A.
ac, " " " " " " " B.

920. Some men are naturally better qualified as observers than others ; ability is developed by practice. The training of good observers is a matter of the greatest importance. They must not only be able to see without being seen, but they must have tenacity and patience to observe. The responsibility for their training rests on the company, battalion, or regimental officers under whose daily control the observers serve.

921. Each platoon should have at its disposal at least 6 observers of keen vision who are good shots. They alternate on duty in order to insure continuity of observation and are excused from certain other duties.

922. Observers thoroughly familiarize themselves with their sectors of observation by a detailed study of the terrain, of the panorama of the observation post, of maps of the sector, and of photographs. They are instructed in the use of the matériel of the observation post.

923. The observer should be particularly on the lookout in respect to :

Enemy sentries, snipers, working parties and any points where he indicates his presence by periscopes, etc. :

Enemy trenches : saps, lookout posts, loopholes, breaches in trench, signs of reliefs, occupied sections, dugouts, new work, latrines, depots ;

Wire : gaps, new wire, tracks of patrols through wire ;

Mining : signs of soil excavated and materials carried ;

Gas and liquid fire : indications, such as the escape of gas after shelling, suspicious emplacements ;

Batteries : activity, nature of guns, shells and direction ;

Lights : signals, rockets, flares, and searchlights ;

Weather : wind (direction and force) ; visibility ;

Airplanes and balloons.

The least change in the enemy lines (obstacles, ground dug up), or any other indication of preparation for an attack should be reported to the watch officer or noncommissioned officer. Observers watch particularly the points to which their attention has been drawn by preceding observers and upon which they may hope to fire with success.

Patient, attentive observation always gives valuable information about the enemy's customs (time for reliefs, supplies, etc.).

Dust blown up by a shot, or smoke from a cigarette may reveal a loophole habitually occupied. Earth thrown up indicates that a fatigue party is constructing a dugout or field work. A small earth heap and smoke reveal the location of a dugout. Study of the battle map and of aerial photographs may show the location of crossroads and the most important communication trenches, upon which it is always advisable to fire with trench mortars at hours when they are supposed to be occupied.

Every effort should be made to locate machine guns, trench mortars, observation posts, etc., and to interpret the presence of the smallest object or any unusual sign appearing on the enemy's side. This information is indispensable in case we attack, and also to insure the daily wearing down of the enemy.

924. The observers combine their special work with giving the alarm by the means at hand in case of surprise attack or an attack preceded by a bombardment ; giving the gas alarm ; observing and repeating the prearranged signals. Observation posts must possess sure and rapid means of transmitting information to the units to be warned. Facility of communication should be considered in locating the post.

925. Observers in rearward echelons repeat signals and rockets from the first line.

Night Patrols

926. Observation is supplemented during the night by the reconnaissance of patrols detailed by the captain or the battalion commander.

The missions of night patrols may be :

To gain information relative to enemy troops or enemy defensive works ;

To capture prisoners ;

To kill or harass the enemy.

These patrols always have a definite mission : to reconnoiter such point ; to prepare an ambush at such place, etc. For the

general mission of protection of the front line, stationary listening posts are more effective than patrols.

927. The officer sending out the patrol determines the time and point at which it will leave the lines (through hidden passages prepared in the barbed wire or from a listening post), the route, and the probable time and place of return. This information is communicated to watch officers and non-commissioned officers, neighboring companies, and artillery, trench-mortar, and machine-gun units covering the sector.

928. Night patrolling should be systematically organized. For troops just commencing the occupation of a stabilized sector, the reconnaissances to be carried out should embrace :

(*a*) Our own front line and accessory defenses in front of it ;

(*b*) Shell craters and old trenches between our front line and the hostile front line ;

(*c*) Enemy wire, saps, listening posts.

These reconnaissances should as a rule be carried out in the order stated.

929. Reconnaissance of our own wire is first carried out for the purpose of ascertaining its condition and in order to locate gaps for the purposes of exit and entry. Landmarks on our own parapet are also located for purposes of subsequent orientation when operating in " No Man's Land. " By taking bearings on these landmarks, patrols will be able to determine their own position at any time and render accurate report as to the location of objects reconnoitered.

930. Shell craters and old trenches are next reconnoitered to determine whether they are occupied by the enemy, and if so, the strength of the post, the state of wire protection, practicability of raiding the post, etc.

931. In investigating the enemy's wire, it is generally best to work from one or both flanks inward. The starting point is located by taking a bearing from some point within our own lines or from a sap head. The stopping point should similarly be located by bearings on prominent objects in our own back area or within the enemy's lines. When reporting on wire, the following points should be observed :

1. Strength, height, depth, thickness or density, number of lines of wire.

2. Distance of inner line from enemy front line, distance between lines, map location of portion examined.

3. Gaps : map location, width, whether straight or zigzag, whether left purposely for passage of enemy patrols or cut by our gunfire.

4. Effect of our recent gun or trench-mortar fire.

5. Nature of construction : Apron wire, chevaux-de-frise, barbed, whether wooden or metal-screw stakes are used, etc.

6. New work : position and extent and probable date of construction.

When investigating a gap for a raid, it is imperative that the patrol leader go completely through it in order to be certain that no obstacle to the passage exists.

932. Patrols sent out to gain information should not fight unless it is necessary to do so to accomplish their mission.

These patrols should be small in numbers (2 to 5 men).

Patrols sent out for the capture of prisoners should be stronger than reconnoitering patrols (5 to 15 men).

933. Before departure, patrols should have studied the ground to be covered from maps, airplane photographs, and observation posts. In case the mission is the capture of prisoners, they should be familiar with the habits of the enemy, the routes followed by his patrols, the location of his sentries, listening posts, advanced posts, etc. The best means of capturing a hostile patrol is the preparation of an ambush along its route ; stalking hostile patrols should in principle be avoided.

Patrols for the protection of working parties should select a good covering position and avoid unnecessary movement.

934. Before departure, the patrol leader examines the equipment of the patrol to see that is makes no noise. Patrols should never wear steel helmets as they click when they hit a piece of barbed wire, show an unmistakable outline, and prevent crawling with the face on the ground. Revolvers and grenades are usually the only arms carried. Rifles are too unwieldy and noisy and soon become unserviceable due to clogging with mud. Hands and face and the outside of revolvers should be stained with mud. Men subject to cough should carry gum as a preventive ; a cough close to the enemy is certain means of detection. All forms of identification such as identity disks, insignia, and letters should be removed. Luminous watches and compasses should be covered. All men of the patrol should know the time and place of departure, the route to be followed, the time and place of return, and the signals for communication with each other.

935. For the purposes of better observation by the patrol, flares may be sent up from our front-line trench at pre-arranged times. When the time comes for the flare to be fired, the entire patrol must be in shell holes or under other cover. Care must be taken that the flare is so fired as to pass over the heads of the patrol. A flare falling behind the patrol will throw it into relief and expose it to hostile view. A light dropping just in

front of the hostile front line blinds the enemy and shows up the wire very plainly to the patrol. If the light goes beyond the hostile trench, it does not blind the enemy but still shows up the wire very plainly to the patrol. The best time to observe is while the light is still in the air and before it has passed over the hostile front line. While the patrol is out, no other flares must be fired near the place where it is working.

A patrol should remain motionless the moment a flare goes up. The best time to move is when it has just gone out.

936. The formation of the patrol will vary according to circumstances. Generally, some form of wedge formation which permits the patrol to form rapidly for action in any direction is most effective. Unless the night is very bright or many flares are being sent up, the patrol may advance by crouching or creeping to within 100 yards of the hostile line. Beyond this point, movement must be by crawling, using increasing care to within 15 or 20 yards of the enemy line, where movement is possible only by inches. During this latter stage of the advance, members of the patrol must be in constant physical touch with each other. One man must be constantly listening while the others are advancing. The route of advance selected should be in dead ground as far as possible. Care must be taken to avoid sky lines and get off the lips of shell craters as soon as possible.

The following method of crawling should be practiced :

Lie flat on the belly on the ground, heels down, left side of face on ground ; extend arms forward overhead, being careful not to raise the head. Feel the ground in front and then bring back the hands to the side of the head. Pull up right leg and push the body forward, raising very slightly on the elbows. For faster travelling when farther away from the enemy, alternate movement on right and left side. Keep the heels down.

937. The return journey of the patrol should be made by a different route from that followed in its advance.

938. Patrol duty is an excellent means of elevating a soldier's courage. Volunteers should be called for in exceptional cases only.

Sniping

939. The purpose of observation in the trenches is not only to give warning when the enemy leaves his trenches but continuously to watch for every detail which may take place within his defensive organization and take advantage of his slightest movement for inflicting losses upon him.

Fire for the purpose of wearing him down should be the

constant object of all platoon leaders and troops and should not be slackened for fear of reprisals.

940. In the execution of harassing fire, observers and snipers frequently work in pairs, the observer indicating the targets discovered to the sniper and observing the results of his fire.

941. Sniping fire may be delivered from specially constructed sniping posts, from shell craters, sapheads, or other position outside the trenches, through loopholes in the parapet, or over the parapet. The rifle may be laid in a fixed rest or on a sniperscope mounting or fired without special rest, using a telescopic sight or ordinary rifle sights modified to increase their visibility for night firing.

942. Sniping posts are so located and sectors of fire so assigned to each post as to cover the entire front. The posts must be located within 400 yards from the hostile front line. They may be in the first, second, or third trench, in approach trenches, in our own wire, in shell holes in front of our front line or between our lines or in trees or houses. For each post, at least one alternative position should be selected.

Concealment is the most important element in the construction of sniper's posts. Background must be given careful consideration. The post may be concealed by the adaptation of various objects, such as an old boot with a loophole cut in the heel ; spool of barbed wire ; dummy sandbag ; artificial tree stump, etc.

The design of snipers' posts must embody the following requisites :

The post must be capable of construction in one night ;

It must afford sufficient space for two men ;

It must be rainproof ;

It must provide room for head and shoulders ;

It must provide a rest for rifle and arm ;

Loopholes must be pointed in the proper direction ; the proper alignment may be insured by driving stakes on the line of fire ;

A cover for the loophole must be provided ;

There must be a curtain or other means of darkening the entrance.

943 The following precautions should be observed in the use of sniping posts :

The loophole should be masked when the curtain is drawn ;

Smoking must not be permitted in the post ;

Glittering objects should be kept out of sight ;

The rifle should not be allowed to project too far beyond the loophole ;

Care must be taken that shots do not kick up dust in front of the loophole and betray the location of the post;

If the post is discovered, it should be temporarily discontinued or completely abandoned, and a new location selected.

Sniping posts should be provided with a landscape sketch and a range card.

For night firing, provision must be made for blinding the flash of discharge by placing a double thickness of canvas or sandbag 18 or 20 inches in front of the muzzle. The screen should be removed before dawn.

944. The rifle may be laid by day on the objectives selected for for night firing and clamped on its line of fire.

Favorable objectives are : gaps in enemy's wire which will probably be repaired at night ; sap heads ; sentry and lookout posts; loopholes; dugouts; exposed points in approach trenches; machine guns spotted by their flashes.

945. Sniping fire may be employed in conjunction with the operations of patrols to distract the attention of the sentry at the point to be reconnoitered.

946. Targets are usually most numerous in the early morning or at dusk, and snipers should be particularly alert at these times. The sniper is at a disadvantage when he is facing the sun. He should if possible select the time for firing when the light is full on the ground where targets are expected and he himself is in a comparatively bad light. Additional protection from discovery may be secured by the use of camouflage clothing and by disguises improvised by using grass, leaves, etc., and by smearing hands, face, and equipment to harmonize with surroundings. Regular outline of any shape and abrupt movements must be avoided.

947. Provision should be made for firing on transient objectives which reveal themselves at night. For this purpose, a visible line of sight must be improvised or telescopic sights employed. A line of sight may be improvised by attaching a piece of white cotton to the front sight and a strip of white tape along the barrel from front to rear sight and by pasting a piece of white cardboard with a hole punched in center on the rear sight. An effective range of from 30 to 50 yards may be obtained in this manner. With a bright moon, effective fire at a range of 200 yards can be delivered with the telescopic sight.

948. Snipers must be skilled in working the bolt of the rifle and in loading noiselessly. To avoid long flashes, the barrel and bolt must be absolutely dry. The sniper should remain in shadow, occupy low ground, and try to get the enemy on

the sky line. To draw targets or locate hostile snipers, some sort of decoy may be successfully employed. Effort should be made to locate the direction from which hostile sniping comes. Any casualty from rifle fire should be at once reported and investigated, and snipers especially detailed to deal with hostile snipers responsible.

949. Rifle grenades are also used for the delivery of harassing fire. For night firing, the rifle is registered by day on important objectives.

5. COORDINATION AND TRANSMISSION OF INFORMATION

950. Regulations relative to coordination and transmission of information obtained through observation are contained in " Instructions for Regimental Intelligence Service ".

6. TACTICAL CONDUCT OF OUTPOSTS

951. The conduct of an outpost is essentially a defensive operation. The provisions of these regulations relative to the defensive apply to the conduct of an outpost in case of hostile attack and to the preparation of plans of outpost defense.

CHAPTER X. — SPECIAL OPERATIONS

1. NIGHT OPERATIONS

952. The object of night operations may be to effect a secret concentration before an attack ; to gain time ; to effect an approach to a hostile position with a view to launching an attack at daybreak ; to cross a zone made impassable by hostile fire by day ; to effect a withdrawal ; to deliver an attack ; to execute a reconnaissance ; or (in position warfare) to effect a relief, execute works under the cover of darkness, or bring up supplies on roads under hostile observation.

953. Night operations are characterized by :

(*a*) Decrease in the effectiveness of aimed fire and corresponding increase in the importance of the means of close combat, of the defensive fire of fixed weapons that can be laid on a definite line of fire by day (machine guns), and in general of the importance of movement.

(*b*) Difficulty in the maintenance of control and of contact and communication between units, with consequent necessity for close formations. Decrease in the effectiveness of fire permits of dense formations.

(*c*) Difficulty in the maintenance of direction and consequent necessity for limitation of objectives.

(*d*) Highly sensitive morale of troops with consequent increase in the importance of the effect of surprise on the part of the offense and of the service of security and the preparation of ambushes on the part of the defense.

954. Night marches must be carefully prepared. The column must be kept well closed up, advance and rear guard distances greatly reduced, guides stationed at cross roads to prevent the wrong route from being taken, strict march discipline maintained, and a moderate rate of march observed. Numerous connecting files should be provided. When practicable, night concentrations should be effected by motor transport. Daybreak should find the troops either in position or in concealed localities (woods, villages) and trains under cover.

In movement off roads, the route should be carefully laid out by compass bearings and the march directed by means of illuminated compasses.

In night marches where protection against the reconnaissance or attack of hostile airplanes making use of flares must be

provided, special precautionary measures are necessary. The command should march in small units and avoid main routes, taking secondary routes as far as practicable. No assembly of troops should be permitted to take place at railway stations. When a unit is illuminated, it should stop, keep to the side of the road, and remain motionless.

A night advance made with a view to making an *attack* in the course of the following day usually terminates with the hasty construction of entrenchments in the dark. Such an advance should be so timed as to allow an hour or more of darkness for entrenching.

An advance that is to terminate in an *assault* at the *break of day* should be so timed that the troops will not arrive long before the assault is to be made ; otherwise the advantage of surprise will be lost, and the enemy will be allowed to reinforce the threatened point.

955. A night attack may be delivered with a view to carrying important points necessary for the offensive of the following day or to the driving in of outposts. In the pursuit of a defeated force which seeks to cover its withdrawal by weak forces heavily equipped with machine guns, a night advance will often offer a means of avoiding the disproportionate losses incident to a daylight advance, and permit the attacker to close with the retreating force.

The time of night at which the attack should be made depends upon the object sought. If a decisive attack is intended, it will generally yield the best results if made shortly before daybreak with a view to following up immediately the success obtained and exploiting to the maximum the effect of surprise. If the object is merely to gain an entrenched position for further operations, an earlier hour is necessary in order that the position gained may be entrenched under the cover of darkness. Moonlight is especially favorable to a night attack as it greatly facilitates movement without materially increasing the efficiency of fire.

The ground to be traversed should be reconnoitered by daylight, and if practicable, at night. Features that are distinguishable at night should be carefuly noted, and their distances from the enemy, from the starting point of the troops, and from other important places should be made known.

The most favorable time for beginning the reconnaissance is shortly before dusk so that both the day and night aspects of the terrain may be studied.

The approaches should be staked out as far as practicable or outlined by luminous tape.

Orders must be formulated with great care and clearness. Each unit must be given a definite objective and direction, and care must be exercised to avoid collision between units. A distinctive badge (*e. g.*, white armband) should be worn. The conduct to be observed by each unit on carrying its objective should be prescribed.

Preparations must be made with secrecy, with a view to effecting as complete a surprise as possible. All possible precautions are taken ; arms and equipment are secured so as to make no noise ; silence is strictly enforced ; the use of whistles is prohibited ; orders are transmitted by agents in a low tone. Bayonets are fixed but pieces are not as a rule loaded.

Units are usually formed for attack in small columns (sections or squads). In each platoon, these columns are usually formed in depth, each being assigned the same objective and following the same route. They should follow one another at such distance (about 50 yards) that no two will be caught in the same ambush. The leading unit of each column acts as a covering detachment ; it is usually preceded by two or three scouts. The advance will usually be effected by short bounds ; at each halt, scouts reconnoiter for the next advance. Halts should be of the shortest possible duration ; rapidity is an essential element of the success of a night attack. As soon as a hostile post is discovered, it is rushed with fixed bayonets. If the advanced element falls into an ambush, the rearward columns move out toward the flank and endeavor to pass it. If this is impracticable, they rush the hostile resistance without hesitation ; delay after the attack is discovered is fatal.

In all cases, the attack is carried out with the bayonet without firing.

After each attack, the unit engaged is re-formed before initiating a further advance.

Immediately after the capture of the objective, the position must be rapidly organized with a view to checking counter-attacks.

In position warfare, the intensified organization of obstacles and machine-gun defense usually limits night attacks to raids by small units.

956. The principal means of defense against night attack are :

(*a*) The fire of fixed weapons and grenades.
(*b*) Obstacles.
(*c*) Illumination of the foreground.
(*d*) Counter-attack.
(*e*) Patrols and outguards.

These defensive elements are so combined as to take the attacking forces by surprise. Ambushes are created by constructing obstacles along the most probable lines of hostile advance (roads, paths, etc.), and these are swept by the fires of fixed weapons sited to a flank or to the rear. The obstacles should be so concealed that the enemy will not discover them before falling into them. While the attacker is held up in front of the obstacle, the fixed weapons open a heavy fire with a view to checking his advance and giving the alarm to troops in rear. The latter at once advance to counter-attack with the bayonet in such manner, if practicable, as to take the attacking troops in flank. Supports and reserves should be posted with this object in view or with a view to recapturing the position if lost. The distance of supports and reserves should be greatly reduced. Supports fix bayonet but do not load. Outguards provide for the security of the command; when practicable, they prepare ambushes in advanced positions with a view to breaking up an attack before it reaches the defensive position or to capturing hostile patrols.

In the use of artificial illumination, care must be taken that the location of the defensive position is not revealed.

Especial vigilance must be maintained shortly before daybreak and on moonlight nights.

Preparations to resist night attacks should be made by daylight whenever such attacks are to be feared.

Reserve units must be able to form rapidly at designated assembly positions and proceed therefrom along previously reconnoitered routes to any part of the front where they may have to intervene.

957. Offensive and defensive night operations should be practiced frequently in order that troops may learn to cover ground in the dark and arrive at a destination quietly and in good order, and in order to train officers in the necessary preparation and reconnaissance.

Troops should be trained in the necessary details (night movements, night patrolling, night marching, and communication at night, see paragraphs 159, 926-938).

958. Only well trained, thoroughly disciplined troops should be employed in a night attack.

2. COMBAT IN WOODS

959. Combat in woods partakes in a lesser degree of many of the characteristics of night combat. These are : decrease in the effectiveness of fire ; increase in the importance of close

combat and surprise; difficulty in the maintenance of direction, communication, and cohesion of the troops; effectiveness of ambushes; ineffectiveness of aerial observation.

Woods lend themselves to gas concentrations.

They are especially favorable to delaying actions by relatively small forces. They keep the attacker in ignorance of the strength of the forces confronting him.

960. The attack of a woods comprises three general phases:

(*a*) The advance over open ground to the edge of the woods;

(*b*) The advance through the woods;

(*c*) Egress from the woods.

961. The main general feature of the situation during the advance over open ground to the edge of the woods lies in the fact that the defender sees all the movements of the advancing troops while his own position is concealed. When wind and atmospheric conditions are favorable, this advantage may be neutralized by the use of smoke screens; or the approach to the edge of the woods may be effected at night.

962. The edge of the woods should be carried like any other position and employed as a departure position from which the advance through the woods is organized and launched. If the attacker attempts to advance uninterruptedly through the woods without reorganizing at the edge of the woods, great inequality in the advance of different parts of the line will unavoidably result, and the more advanced elements will be exposed to being taken in flank by the prepared ambushes of the defense.

963. In general, the advance through the woods should be methodically organized with a view to maintaining cohesion between the attacking units. The movement should be effected in a series of bounds, with halts to restore contact and cohesion either on certain predetermined lines or at prescribed periods. Paths or roads perpendicular to the line of advance are especially useful for this purpose.

Direction must be carefully maintained by means of compass bearings.

Especial measures for maintaining contact with units advancing on the flank outside the woods must be taken (strong combat patrols with machine guns).

964. The formation to be adopted depends upon the density of the woods. In sparse woods, formations resembling those employed on open ground (close line of skirmishers) are generally most suitable for the leading elements. In dense woods, the conditions more closely resemble those of night

operations, and similar formations will be most effective (section or squad columns disposed in depth and preceded by scouts). Supports should closely follow the assaulting units. Connecting files maintain contact between adjacent columns and between rearward and leading units.

965. Absolute silence must be maintained throughout the advance. Sound signals must as a rule be prohibited. When necessary, the line is marked for airplanes by Bengal flares. Rocket signals are used to indicate arrival on important terrain lines.

966. The rate of the advance depends largely upon necessity for reconnaissance and other security measures, and is necessarily slower than on open ground.

Scouts reconnoiter to the front and flanks of the advancing columns, remaining within sight of their units. As soon as the scouts have indicated that all is clear, the platoon or section advances, and the scouts move forward for further reconnaissance. If the scouts discover a hostile post, the leading columns rapidly form skirmish line facing it, and the post is rushed without hesitation. Rearward columns move to one side of the line of advance with a view to taking the hostile resistance in flank or checking a counter-attack against the flanks of the leading columns.

967. Especial care must be taken when scouts discover an obstacle across the line of advance. Reconnaissance toward the front and flanks must be carried out with a view to the discovery of any hostile post located with a view to sweeping the obstacle with frontal or flanking fire.

968. Especial provision for the protection of its flanks must be made by any unit which advances so far beyond adjacent units that its flanks are unsupported. Reconnaissance must be pushed sufficiently toward the flanks to insure that the advancing columns will not be taken under flanking fire.

969. Special precautions must be taken before debouching in clearings or on wide roads.

When advancing along a road or path, the leading columns should halt at all turns until the reconnaissance of scouts has progressed sufficiently to insure the safety of the column.

970. Before debouching from the far edge of the woods, the columns should halt and re-form far enough within the interior of the woods to be beyond the enemy's view. The position to be occupied after debouching should be reconnoitered. Machine guns and accompanying weapons should be brought up and posted so as to cover the egress. If the situation is such that heavy fire from hostile artillery registered on

the edge of the woods may be expected as soon as the units commence to debouch, the movement should be carried out in a single rush and by surprise. When greater danger is to be apprehended from close combat weapons than from artillery, the egress may be effected by infiltration; automatic riflemen rapidly build up a thin line on the new position, and under the cover of their fire, the rest of the unit forms up on the new position.

971. The methods of defense in woods are similar to those in night defense.

The defense aims to take the attacking units under flanking fire and by surprise. It therefore makes extensive employment of prepared ambushes. By the establishment of carefully concealed strong points and obstacles at intervals along the front in the interior of the woods, it endeavors to break up the continuity of the attacking line. Ambushes, echeloned to the rear of the strong points, are so established as to take under flanking fire hostile elements penetrating through the intervals between the strong points. Obstacles are constructed in rear of the intervals in such manner as to hold the penetrating elements under the fire of the troops in ambush. Supports and reserves are so posted as to take in flank by counter-attack hostile elements held up in front of the strong points or penetrating through the intervals. Roads and paths are swept by the fire of machine guns and automatic rifles.

972. The advanced line of strong points should be established at a short distance from the edge of the woods. Tiers of fire may be created and the field of fire extended by posting sharpshooters and machine guns in trees. Arrangements for flanking the edge of the woods should be made. The defense of clearings is similarly organized.

973. Sound signals are employed by the defense to give warning of the enemy's approach.

974. Woods are especially favorable to covering a withdrawal as they force the pursuer to a deliberate advance. A weak rear guard can delay the advance of large hostile forces until the main body has withdrawn beyond reach of pursuit. By its movement in withdrawal, a skillfully handled rear guard can often attract the enemy in a direction favorable to counter-attack.

975. Troops must be carefully trained in the maintenance of direction in woods. Exercises in which widely separated units are assigned a common rendezvous at the far edge of the woods should be held for training in keeping direction by compass bearings.

3. WITHDRAWAL

976. When it is no longer possible to give the action a favorable turn and the necessity for withdrawal arises, every effort must be made to place distance and a rear guard between the enemy and the defeated troops.

977. A withdrawal by daylight involves such heavy losses and so great a degree of disorganization that it is as a rule preferable to hold out at all cost until nightfall and effect the withdrawal under the cover of night. Rearward echelons only can as a rule be withdrawn by day.

Any order for withdrawal from an uncertain source must be disregarded. Orders for withdrawal are especially suspicious when passed along a line of skirmishers.

978. The steps involved in withdrawal are in general :

(*a*) Selection of a covering position for supports and reserves.

(*b*) Selection of an assembly position where the several units will assemble when withdrawn and form in column of route ; or of a defensive line on which resistance will be renewed.

(*c*) Withdrawal of transportation and evacuation of such stores as can be removed and destruction of unremovable supplies.

(*d*) Withdrawal of rearward echelons (supports and reserves) to the covering position.

(*e*) Withdrawal of the combat echelon.

979. When the withdrawal takes place by day, troops in the first line are withdrawn by successive echelons and placed in reserve as soon as the supports and reserves have occupied the covering position. The fire of the echelons remaining in position, the overhead fire of machine guns and artillery, and the use of smoke screens are the most effective means of covering the movement of the withdrawing troops.

980. When withdrawal is effected at night, supports, reserves and the greater part of the combat echelon are successively withdrawn to the covering or the assembly position. The front lines are held by weak elements, which by simulating great activity (heavy firing from different positions, reconnaissances of strong combat patrols, numerous flares and rockets), endeavor to create the impression of heavily held lines. These advanced elements are withdrawn toward daybreak, leaving the position vacant.

The movement in withdrawal takes place in small columns (sections or platoons) which pass the covering position and move toward the designated rendezvous. Platoon and company organization should be restored during the movement

so that battalions will be well in hand on reaching the assembly position.

981. The covering position should be far enough to the rear to prevent the troops occupying it from being influenced by the withdrawal but sufficiently near to exert an influence on the action as soon as the withdrawal begins (1000-3000 yards). It should give the covering troops a good field of fire at mid and long ranges and should facilitate their own safe and timely withdrawal. The selection of other successive covering positions in rear of the first may become necessary.

982. The route to be followed by each unit in reaching the assembly position should be prescribed. Guides should be furnished when necessary.

983. Routes must be cleared by the timely movement of all transportation.

984. The strength of the troops on the covering position should be as small as possible. They should be plentifully supplied with machine guns and infantry guns (artillery pieces). These remain in position until the last moment if necessary; the infantry guns fire over open sights against the advancing enemy.

985. The assembly position should be far enough to the rear to enable the advanced lines to free themselves completely from contact with the enemy and insure sufficient time for undisturbed reorganization. When practicable, this position should be protected by natural obstacles, such as woods, watercourses, etc. The position should be selected with regard to the routes leading to the rear.

986. In small units, a limited withdrawal may sometimes be effectively employed as a means of drawing a pursuing enemy in a direction such that he will come under heavy flanking fire or expose himself to being counter-attacked from the flank.

4. MINOR WARFARE

987. Minor warfare embraces both regular and irregular operations.

Regular operations consist of minor actions involving small bodies of trained and organized troops on both sides.

The tactics employed are in general those prescribed for the smaller units.

988. Irregular operations consist of actions against unorganized or partially organized forces, acting in independent or semi-independent bodies. Such bodies have little or only

crude training and are under nominal and loose leadership and control. They assemble, roam about, and disperse at will. They endeavor to win by stealth or by force of superior numbers, employing ambuscades, sudden dashes or rushes, and hand-to-hand fighting.

Troops operating against such an enemy usually do so in small units, such as platoons, detachments, or companies, and the tactics employed must be adapted to meet the requirements of the situation. Frequently the enemy's own methods may be employed to advantage.

In general, such operations should not be undertaken hastily; every preparation should be made to strike suddenly and to inflict the maximum punishment.

989. In general, the service of information will be insufficient; adequate reconnaissance will rarely be practicable. March and bivouac formations must be such as to admit of rapid deployment and fire action in any direction.

990. In open country, where surprise is not probable troops may be marched in column of squads preceded, within sight, by a squad as an advance party.

991. In close country, where surprise is possible, the troops must be held in a close formation. The use of flank patrols becomes difficult. Occasionally, an advance party, never less than a squad, may be sent out. In general, however, such a party accomplishes little, since an enemy intent on surprise will permit it to pass unmolested and will fall upon the main body.

Under such conditions, especially when the road or trail is narrow, column of twos or files is a convenient formation; the officers place themselves in the column so as to divide it into nearly equal parts. If rushed from a flank, such a column will be in readiness to face and fire toward either flank or it may form toward both flanks with the ranks back to back; if rushed from the front, the head of the column may deploy, the rest of the column closing up to support it and to protect its flanks and rear.

992. The column may often be broken into two or more approximately equal detachments, separated on the march by distances of 50 to 100 yards. As a rule, the detachments should not consist of less than 25 men each. With this disposition, it will rarely be possible for an enemy to close simultaneously with all of the detachments as one or more will be left unengaged and available to support those engaged or to inflict severe punishment upon the enemy when he is repulsed.

993. The site for camp or bivouac should be selected with

special reference to economical and effective protection against surprise. Double sentinels are posted on the avenues of approach, and the troops sleep in readiness for instant action. As far as practicable, troops should be instructed in advance as to what they are to do in case of attack at night.

994. Night operations are frequently advisable. With the small forces employed, control is not difficult. Irregular troops rarely provide proper camp protection, and they may frequently be surprised and severely punished by a properly conducted night march and attack.

CHAPTER XI. — CEREMONIES AND INSPECTIONS

1. CEREMONIES

General Rules

995. The order in which the troops of the various arms are arranged for ceremonies is prescribed by Army Regulations.

When forming for ceremonies, the companies of the battalion and the battalions of the regiment are posted from right to left in line and from head to rear in column, in the order of rank of their respective commanders, the senior on the right or at the head, unless otherwise directed by the proper commanding officer.

The commander faces the command; subordinate commanders face to the front.

996. At the command present arms, given by the commanding officer of the troops, his staff salutes; the major's staff salutes at the major's command; other staffs salute with their commanders; the lieutenant-colonel salutes with colonel's staff.

997. At the assembly for a ceremony, companies are formed on their own parades and informally inspected.

At adjutant's call, except for ceremonies involving a single battalion, each battalion is formed on its own parade, reports are received, and the battalion presented to the major. At the second sounding of adjutant's call, the regiment is formed.

998. Formations for ceremonies may be modified to suit the ground.

999. The formations of the machine-gun and supply companies (when formed with guns, carts, and transportation) are as follows (Plates V, VI, and VII):

Regiment	*Machine-Gun Company*	*Supply Company*
Line of masses.... Column of masses.	Line	Formed in depth of 3 wagons.
Column of battalion close lines..	Close line.....	Formed on frontage of 6 wagons.
Line of battalion columns	Close column	Formed in depth of 6 wagons.
Line of battalions in column of company close lines	Column of squads.	Formed on frontage of 3 wagons.

The formation of one-pounder and light-mortar units with guns and ammunition carts is similar to that shown for a ma-

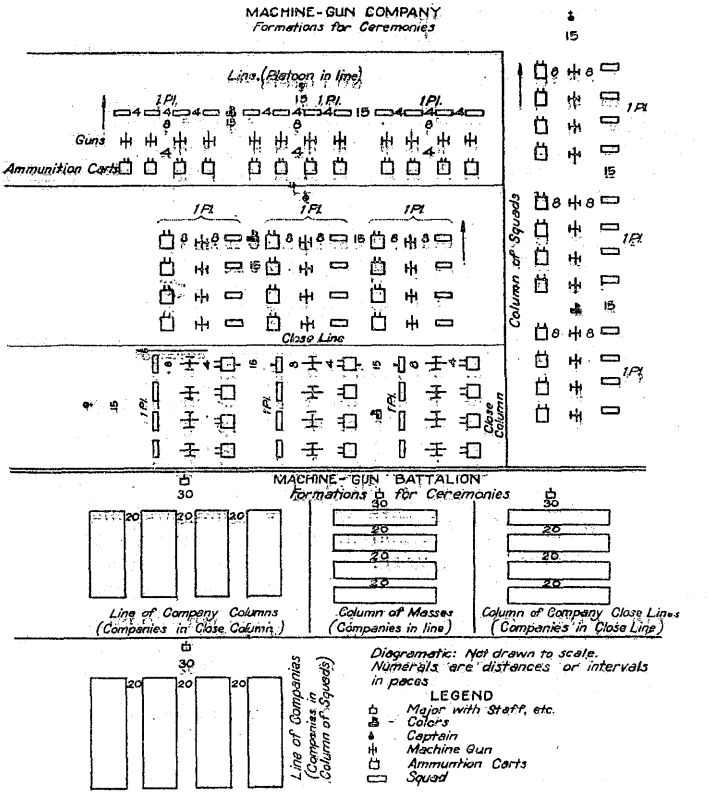


PLATE VI

chine-gun platoon (Plate VI). In ceremonies involving more than one regiment, they are attached to the machine-gun company and formed as an additional platoon or platoons; the

remainder of the headquarters company (less band, noncommissioned staff and mounted men) is attached to a rifle battalion and formed as an additional company or distributed by platoons to rifle companies as required by the nature of the formation (Plate VII).

When formed without guns, carts, and transportation in regimental ceremonies, the headquarters company (less band, noncommissioned staff, and mounted men), the machine-gun company, and the supply company are formed as prescribed for rifle companies in the positions shown in Plate V ; in ceremonies involving more than one regiment they are commanded as a provisional battalion and formed as prescribed for a rifle battalion.

For regimental ceremonies, the supply company, when formed with transportation, is, as nearly as practicable, divided into units of a frontage and depth of 3 wagons. The units are formed with wagons at intervals of 15 paces, and distances of 5 paces.

1000. In commands in which the average strength of companies is less than 9 squads, each unit will adopt the formations prescribed for the next lower unit, *i. e.*, the company will be formed as a platoon, the battalion as a company, etc.

For ceremonies, members of company headquarters detachments are posted in the line of file closers, or formed as an extra squad of a platoon, or used to fill blank files.

1001. When reviewed with infantry regiments, machine-gun battalions with guns and ammunition carts are formed as follows (Plates VI and VII) :

Regiment	*Machine-Gun Battalion*
Line of battalion columns	Line of company columns.
Column of masses	Column of masses.
Column of battalion close lines	Column of company close lines.
Line of battalions in column of company close lines.....	Line of companies.

Reviews

General Rules

1002. The adjutant posts men or otherwise marks the line of march of the column in such manner that its flank in passing will be about 20 paces from the reviewing officer.

The post of the reviewing officer is indicated by a marker.

Officers of the same grade as the reviewing officer or of higher

grade, and distinguished personages invited to accompany him place themselves on his left or as otherwise indicated; their staffs and orderlies place themselves respectively on the corresponding side of the staff and the orderlies of the reviewing officer; all others who accompany the reviewing officer place themselves on the left of his staff or as otherwise indicated, their orderlies in rear. A staff officer is designated to escort distinguished personages and to indicate to them their proper positions.

1003. While riding around the troops, the reviewing officer may direct that his staff, flag, and orderlies remain at the post of the reviewing officer, or that only his personal staff and flag accompany him; in either case, the commanding officer alone accompanies the reviewing officer. While passing around the troops, the commanding officer rides on the flank of the reviewing officer away from the command. If the reviewing officer is accompanied by his entire staff, the staff officers of the commander place themselves on the side of the staff of the reviewing officer corresponding to the position of the commander.

The reviewing officer and others at the reviewing stand salute the color as it passes; when passing around the troops, the reviewing officer and those accompanying him salute the color when passing in front of it.

The reviewing officer returns the salute of the commanding officer of the troops only. Those who accompany the reviewing officer do not salute.

1004. In passing in review, each staff salutes with its commander.

1005. After saluting the reviewing officer in passing in review, the commanding officer of the troops turns out of the column and takes post on the side of the reviewing officer toward the direction of march of the command; the members of his staff accompanying him take post on the corresponding side of the reviewing officer's staff. When the rear element of his command has passed, the commanding officer of the troops, without changing his position, salutes the reviewing officer; he and the members of his staff accompanying him then rejoin the command. The commanding officer of the troops and the members of his staff are the only ones who turn out of the column and take post at the side of the reviewing officer.

1006. If the person reviewing the command is not mounted, the commanding officer and his staff, on turning out of the column after passing the reviewing officer, dismount preparatory to taking post. In such case, the salute of the commanding

officer, prior to rejoining his command, is made with the hand before remounting.

1007. When the rank of the reviewing officer entitles him to the honor, each regimental color salutes at the command present arms, given or repeated by the major of the battalion with which it is posted ; and again in passing in review.

1008. The band of an organization plays while the reviewing officer is passing in front, and in rear, of the organization.

During the march in review, each band turns out of the column, takes post as hereinafter prescribed or as otherwise directed, continues to play until its regiment has passed, then ceases playing and follows in rear of its regiment ; the band of the following regiment commences to play as soon as the preceding band has ceased.

While marching in review, but one band in each brigade plays at a time, and but one band at a time when within 100 paces of the reviewing officer.

In large commands, bands may be massed and posted as directed by the commanding officer.

1009. If the rank of the reviewing officer entitles him to the honor, the band plays the prescribed national air or the field music sounds to the color, march, flourishes, or ruffles when arms are presented. When passing in review, at the moment the regimental color salutes, the musicians posted with the band sound to the color, march, flourishes, or ruffles.

1010. The present arms and the ride around the line by the reviewing officer may be dispensed with.

1011. Troops march in review with the guide toward the flank on which the reviewing officer is posted.

1012. Troops pass in review in quick time only.

1013. In reviews of regiments or larger commands, each battalion and special unit after the rear has passed the reviewing officer 50 paces, takes the double time for 100 yards in order not to interfere with the march of the column in rear ; if necessary, it then turns out of the column and returns to quarters by the most practicable route.

When review is to be followed by muster or inspection, units reform in their original places or as otherwise directed, after passing in review.

1014. In a brigade or larger review, a regimental commander may cause his regiment to stand at ease, rest, or stack arms, and fall out and resume attention, so as not to interfere with the ceremony.

1015. When an organization is to be reviewed before an inspector junior in rank to the commanding officer, the com-

manding officer receives the review and is accompanied by the inspector, who takes post on his left.

1016. The march in review may commence from either flank of the command. When the march is to commence with the left flank, the command should be formed from left to right. The march in review is described in these regulations as commencing with the right flank; appropriate changes in commands and movements are made when the movement is to commence with the left flank.

Battalion Review

1017. The battalion having been formed in line or in line of close columns, the major faces to the front ; the reviewing officer moves a few paces toward the major and halts ; the major turns about and commands : 1. Present, 2. ARMS, and again turns about and salutes.

The reviewing officer returns the salute ; the major turns about, brings the battalion to order arms, and again turns to the front.

The reviewing officer approaches to about 6 paces from the major, the latter salutes, takes post on his right, and accompanies him around the battalion. The band plays. The reviewing officer proceeds to the right of the band, passes in front of the captains to the left of the line and returns to the right, passing in rear of the file closers and the band.

On arriving again at the right of the line, the major salutes and halts, and the reviewing officer with his staff proceeds to his post in front of the center of the battalion. When the reviewing officer and his staff have passed him, the major moves directly to his post in front of the battalion, faces it, and commands : 1. Pass in review, 2. MARCH.

At the first command, the band changes direction, if necessary, and halts.

The second command is given when the band has changed direction.

Being in line : At the major's first command, each captain commands : Squads right. At the major's second command, the band and the battalion move off, the band playing ; without command from the major, the column changes direction at the points indicated, and column of platoons at full distance is formed successively to the left at the second change of direction. Captains take post eight paces in front of their leading platoons after the second change of direction.

Being in line of close columns: At the major's first command, the captain of the right company commands : Squads right.

At the major's second command, the band and the right company move off, the band playing ; without command from the major, the band changes direction at the points indicated, and the company forms close column at the first change of direction and close line at the second change. The other companies successively execute squads right in time to follow the preceding company at 30 paces, form close column to the left, and pass in review in close line.

The major takes his post 15 paces in front of the band immediately after the second change of direction : the band, having passed the reviewing officer, turns to the left out of the column, takes post in front of and facing the reviewing officer, and remains there until the review terminates.

The major and staff salute when the major is 6 paces from the reviewing officer and terminate the salute when the major has passed 6 paces beyond him (see pars. 1060 and 1083).

If passing in review in column of platoons, each captain and the second in command execute and terminate the salute in the same manner and when in the same relative positions with respect to the reviewing officer as prescribed for the major and his staff. Each platoon leader, without facing about, commands : 1. Eyes, in time to add, 2. RIGHT, when at 6 paces from the reviewing officer, and commands FRONT when at 6 paces beyond him.

If passing in review in close line, all units of the company execute eyes right and front at the command of the captain ; each captain commands : 1. Eyes, in time to add, 2. RIGHT, when at 6 paces from the reviewing officer, and FRONT, when 20 paces beyond him (pars. 1059 and 1083).

Non-commissioned staff officers and the drum major execute and terminate the salute at the points prescribed for the major. Guides charged with the step, trace, and direction, do not execute eyes right.

If the reviewing officer is entitled to a salute from the colors, the regimental color salutes when at 6 paces from him and is raised when at 6 paces beyond him.

The major, having saluted, takes post on the right of the reviewing officer and remains there until the rear of the battalion has passed, then salutes, and rejoins his battalion.

The review terminates when the rear unit has passed the reviewing officer ; the band then ceases to play, and unless otherwise directed by the major, returns to the position it occupied before marching in review, or is dismissed ; the major rejoins the battalion. The battalion then executes such move-

ments as the reviewing officer may have directed, or is marched to its parade ground and dismissed.

1018. At battalion review, the major and his staff may be dismounted in the discretion of the commanding officer.

Regimental Review

1019. The regiment is formed in line of masses.

The review proceeds as in the battalion, substituting "colonel" for "major" and "regiment" for "battalion."

At the colonel's command: Present arms, the major of the center battalion commands: 1. Present. 2. ARMS. The other majors successively from the center bring their battalions to present arms. Order arms is similarly executed.

To march the regiment in review the colonel commands, orders or signals: Pass in review. The major of the right battalion then commands: 1. Column of close lines, first company squads right, 2. MARCH. Other majors successively move their battalions by similar commands in time to follow the preceding battalion at sixty paces. The band and companies change direction without command from the majors and pass in review as prescribed for battalion review.

At the second change of direction each major takes post 15 paces in front of his leading company.

The headquarters company (less band, noncommissioned staff, mounted men, and one-pounder and light-mortar platoons) moves to the front in close column, marches to the right in close line on the ground originally occupied by the right company, forms close column to the left, and passes in review in close line in rear of the battalions as prescribed for a rifle company. The one-pounder and light-mortar platoons and the platoons of the machine-gun company (with guns and carts) move successively to the front in line and march to the right in column of squads in time to follow the preceding unit at 30 paces, form line to the left, and pass in review in column of squads (Plate VI) with guns and carts on the left. The captain of the machine-gun company takes post 15 paces in front of his leading platoon after the last change of direction before passing in review. The units of the supply company (with transportation — see par. 999) move successively to the front in time to march by the flank and follow the preceding unit at 40 paces; at the several changes of direction, they march by the flank as prescribed for other units of the regiment. The captain of the supply company takes post 15 paces in front of his company after the last change of direction before

passing in review. The captains of the machine-gun and supply companies salute as prescribed for the major of a rifle battalion.

The commands, eyes right and front, are given by one-pounder, light-mortar and machine-gun platoon leaders as prescribed for the captain of a rifle company.

The rear of the column having passed the reviewing officer, the battalions and special units, unless otherwise directed, are marched to their parades and dismissed.

1020. The review of a small body of troops, composed of different arms, is conducted on the principles laid down for the regiment. The troops of each arm are formed and marched so as to conform as nearly as practicable to the movement of the infantry.

Reviews of Large Commands

1021. The principles of regimental review are observed as far as applicable.

1022. A command, consisting of one regiment or less and detachments of other arms, is formed for review as ordered by the commanding officer.

1023. In the review of a brigade or larger command, regiments are formed in line of battalion columns, column of masses, column of battalion close lines, or line of battalions in column of company close lines (Plate V). The particular formation to be chosen depends chiefly upon the method adopted for passing the command in review. Transportation is usually massed and posted in rear or on a flank of the command.

The basic units of movement are the rifle battalion, the machine-gun company, and the field artillery battery.

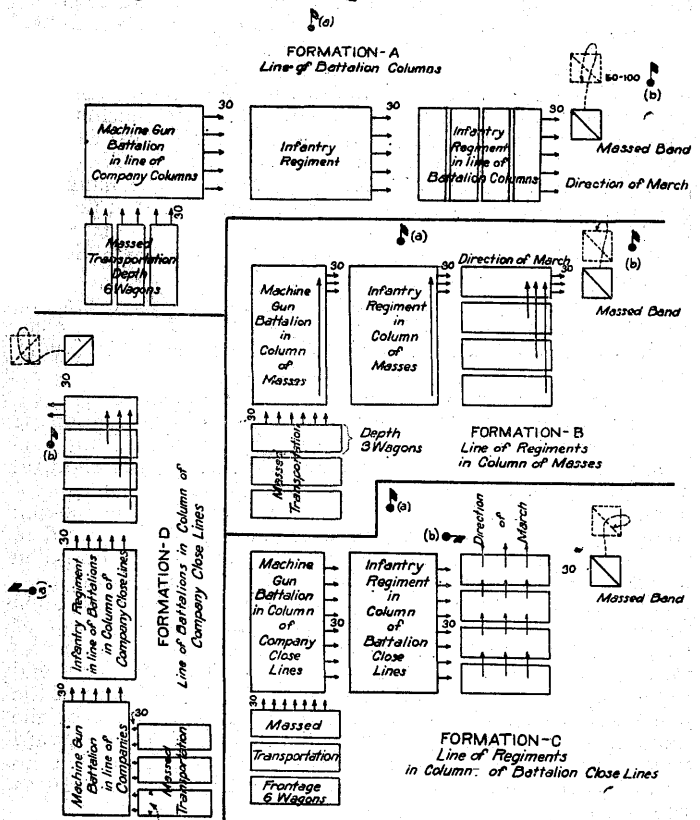
1024. The reviewing officer takes post opposite the center of the command. The commanding officer of the troops commands : Present arms. Battalions and other units are presented and brought to the order successively from the center as prescribed for regimental review. Only the commanding officer of the troops and battalion commanders give the command present arms. Brigade and regimental commanders and their staffs salute as soon as their last battalions have been presented.

1025. One of the following formations for review of brigades and larger commands will be adopted whenever practicable :

Formation A : Line of battalion columns (see Plate V, paragraphs 999 and 1001, and Plate VII).

The reviewing officer receives the present at (*a*) (Plate VII).

After passing around the command, he takes post at (*b*). The commanding officer of the troops commands : **Pass in review.**



The band moves forward playing, countermarches, and takes post 50-100 paces to the right of the reviewing officer. The major of the right battalion commands : 1. **Squads right,**

2. MARCH, and moves his battalion directly by the flank in close line with guide left. The other battalions and the machine-gun company of the right regiment move successively by the flank in time to follow the preceding battalion in close line at 30 paces. The right battalion of each succeeding regiment and the right company of the machine-gun battalion move by the flank in time to follow the preceding unit in close line at 60 paces. The other rifle battalions and machine-gun companies move successively by the flank and follow the preceding unit in close line at a distance of 30 paces. The transportation moves forward in time to march by the flank and follow the rear of the column as soon as the ground in its front has been cleared.

Eyes left is executed at the command of rifle battalion and machine-gun company commanders.

This formation and procedure in passing in review may be adopted when there is sufficient space on the flank of the command to permit the leading units to clear the field without blocking the march of those in rear.

Formation B : Line of regiments in column of masses.

Posts of the reviewing officer and band as in Formation *A*. At the command : Pass in review, the major of the leading battalion of the right regiment commands : 1. Squads right, 2. MARCH, and moves his battalion directly by the flank in column of close lines. The other battalions and the machine-gun company of the right regiment move successively forward in time to march by the flank and follow the preceding battalion at 30 paces. The leading battalion of each succeeding regiment and the leading company of the machine-gun battalion move by the flank in time to follow the preceding unit at 60 paces. Other rifle battalions and machine-gun companies move successively forward in time to march by the flank and follow the preceding unit at 30 paces. The leading unit of the massed transportation moves forward in time to march by the flank and follow the preceding unit at 60 paces. Rearward transportation units move successively forward in time to move by the flank and follow the preceding unit as soon as the latter has cleared its front.

Eyes left is executed at the command of captains of rifle companies and leaders of one pounder, light-mortar, and machine-gun platoons.

This formation and procedure in passing in review may be employed when troops are to march by the flank in review and there is not sufficient space for the use of Formation *A* ; it may also be employed when the march past is to take place

without change of post of the reviewing officer, the leading battalion of the right regiment moving straight to the front and then by the flank so as to pass the reviewing post in column of close lines, other battalions, machine-gun companies, and transportation units following the leading battalion as already described.

Formation C : line of regiments in column of battalion close lines.

The reviewing officer receives the present at (*a*) (Plate VII). After passing around the command, he takes post at (*b*). The commanding officer of the troops commands : **Pass in review.** The major of the leading battalion of the right regiment commands : 1. **Forward,** 2. **MARCH.** 3. **Guide left,** and marches his battalion in review in close line. The band moves out playing with the leading battalion, changes direction to the right when opposite the reviewing officer, countermarches, and takes post facing him. Other battalions and the machine-gun company of the right regiment move successively forward in time to follow the preceding battalion at 30 paces and pass in review in close line. The leading battalions of other regiments and the leading company of the machine-gun battalion move by the flank in time to march to the front and follow the preceding unit in the same formation as soon as the latter has cleared the front of the formation. Other rifle battalions and machine-gun companies move successively by the flank in time to march to the front and follow the preceding unit at 30 paces, and pass in review in close line. The massed transportation moves forward as soon as its front has been cleared, marches by the flank when its leading elements have reached the original front of the formation so as to follow the rear of the column, and again moves by the flank so as to pass in review on the same ground as the rifle battalions and machine-gun companies.

Eyes left is executed at the command of rifle-battalion and machine-gun company commanders.

This formation may be employed when there is more suitable ground for passing the command in review to the front of the formation than toward the flank.

Formation D : line of battalions in column of company close lines.

Posts of reviewing officer and band as in Formation *C*.

The right battalion moves to the front and passes in review in column of close lines. Other battalions and the machine-gun company of the right regiment move successively by the flank and to the front in time to follow the preceding battalion at a

distance of 30 paces. The right battalions of other regiments and the right company of the machine-gun battalion move by the flank and to the front in time to follow the preceding unit at 60 paces. The other rifle battalions and machine-gun companies move successively by the flank and to the front in time to follow the preceding unit at 30 paces. The right unit of the massed transportation moves forward as soon as the preceding unit has cleared its front, marches by the flank so as to follow the rear of the column and again moves by the flank so as to pass in review on the same ground as the rifle battalions and machine-gun companies. The other transportation units move successively forward as soon as the tail of the unit on their right has cleared the front on which the transportation was originally formed, march by the flank, and pass in review as prescribed for the right unit.

Eyes left is executed at the command of rifle-company and one-pounder, light-mortar and machine-gun platoon commanders.

This formation may be employed when there is not sufficient space for passing the command in review on a battalion front as in Formation *C*.

Formations *C* and *D* are especially adapted to the massing of a large command in a very restricted area.

The command may be passed in review by the left flank (Formations *A* and *B*) or to the front of the left unit (Formations *C* and *D*) when required by the condition of the ground.

The above formations are described for reference only when required.

Parades

General Rules

1026. If dismounted, the officer receiving the parade and his staff stand at parade rest, with arms folded, while the band is sounding off ; they resume attention with the adjutant. If mounted, they remain at attention.

1027. At the command **report**, given by a battalion adjutant, the captains in succession from the right salute and report: **A (or other) company, present or accounted for ; or, A (or other company, (so many) officers or men absent.**

Battalion Parade

1028. At **adjutant's call**, the battalion is formed in line or line of close columns but is not presented. The major takes

post at a convenient distance in front of the center and facing the battalion.

The adjutant, from his post in front of the center of the battalion, commands : 1. **Parade**, 2. **REST** ; the battalion executes **parade rest.** The adjutant directs the band : **SOUND OFF.**

The band, playing in quick time, passes in front of the line of captains to the left of the line and back to its post on the right, when it ceases playing. At evening parade, when the band ceases playing, retreat is sounded by the field music, and following the last note and while the flag is being lowered, the band plays the **Star Spangled Banner.**

Just before the last note of retreat, the adjutant comes to attention, and as the last note ends, commands : 1. **Battalion**, 2. **ATTENTION**, 3. **Present**, 4. **ARMS**, and salutes, retaining that position until the last note of the National Anthem. He then turns about, salutes, and reports : **Sir, the parade is formed.** The major directs the adjutant : **Take your post, Sir.** The adjutant moves at a trot (if dismounted, in quick time), passes by the major's right, and takes his post.

The major commands : 1. **Order**, 2. **ARMS**, and adds such exercises in the manual of arms as he may desire. Officers, noncommissioned officers commanding platoons or armed with the with the saber, and the color guard, having once executed order arms, remain in that position during the exercises in the manual.

The major then directs the adjutant : **Receive the reports, Sir.** The adjutant, passing by the major's right, advances at a trot (if dismounted, in quick time) toward the center of the line, halts midway between it and the major, and commands : **REPORT.**

The reports received, the adjutant turns about, and reports : **Sir, all are present or accounted for** ; or **Sir, (so many) officers or men are absent,** including in the list of absentees those from the band and field music reported to him by the drum major prior to the parade.

The major directs : **Publish the orders, Sir.**

The adjutant turns about and commands : **Attention to orders** ; he then reads the orders, and commands : 1. **Officers**, 2. **CENTER**, 3. **MARCH.**

At the command **center**, captains face to the center. At the command **march**, they close to the center and face to the front ; the adjutant turns about and takes his post.

The captains, having closed and faced to the front, the senior commands : 1. **Forward**, 2. **MARCH.** The captains advance,

the band playing ; the senior captain is the guide, and marches on the major ; the captains are halted at 6 paces from the major by the senior who commands : 1. Officers, 2. HALT. They halt and salute. The major then gives such instructions as he deems necessary, and commands :

1. Officers, 2. POSTS, 3. MARCH.

At the command posts, captains face about.

At the command march, they step off with guide as before, and the senior commands : 1. Officers, 2. HALT, so as to halt 8 paces from the line ; he then adds : 1. Posts, 2. MARCH.

At the command posts, captains face outward, and at the command march, step off in succession at 4 paces distance, and resume their posts.

The music ceases when the captains have resumed their posts.

The major then commands : 1. Pass in review, 2. MARCH.

The battalion marches according to the commands and principles of review ; when the last company has passed, the ceremony is concluded.

The band continues to play while the companies are in march upon the parade ground. After passing in review, companies are marched to their respective parades by their captains.

When the captains have saluted the major, he may direct them to form line with staff, in which case they move individually to the front, passing to the right and left of the major and staff, halt on the line established by the staff, face about, and stand at attention. The music ceases when the captains join the staff. The major causes the companies to pass in review under the command of the seconds in command by the same commands as before.

Regimental Parade

1029. The regiment is formed in line of masses.

The parade proceeds as for the battalion with the following exceptions :

" Colonel " is substituted for " major ", " regiment " for " battalion " in the description, and " battalions " for " battalion " in the commands.

The battalions execute present arms, order arms, parade rest, and come to attention at the command of execution of their commanders, successively from the center battalion.

Exercises in the manual of arms and reports are omitted.

After publishing the orders, the adjutant commands : 1. Officers, center, 2. MARCH.

Company commanders remain at their posts with their companies.

The field and staff officers form one line, closing on the center. The senior commands : 1. Forward, 2. MARCH. The senior major is the guide and marches on the colonel.

After being dismissed, each major moves individually to the front, turns outward, and followed by his staff, resumes his post by the most direct line.

The colonel gives the necessary commands, orders, or signals for marching the regiment in review. The regiment marches according to principles of review.

Presentation of Decorations

1030. When practicable, a review will be held on occasion of the presentation of the Medal of Honor, the Distinguished Service Cross, the Distinguished Service Medal or the decoration of the colors.

The persons to receive the award assemble in single rank in front of the center of the command on line with the captains; colors to decorated take post 5 paces in front of the center of the line of persons. After the reviewing officer has ridden around the line and resumed his post in front of the center of the command the persons and colors to be decorated are marched line to a point 12 paces from the reviewing officer by the commanding officer of the troops. The colors not to be decorated follow the center of the line of the persons to be decorated. The commanding officer of the troops advances toward the reviewing officer, salutes, and reports : Sir, the persons to be decorated are present. The reviewing officer returns the salute and directs that the command be presented. The band then plays the Star Spangled Banner, or if only field music is present, To the Colors is sounded. On completion of the music, the commanding officer of the troops brings the command to order arms. The persons to be decorated and the colors salute and terminate the salute at the commands present arms and order arms respectively of the commanding officer of the troops.

A designated staff officer then reads the order announcing the awards. After the reading of the order, the reviewing officer, accompanied if necessary by his staff or designated members thereof, advances toward the colors and the line of persons to be decorated and fastens the appropriate streamer to the

staff of the color, and pins the decoration awarded on the left breast of each person. He then directs the commanding officer of the troops to march the command in review and resumes his post. The persons decorated then form line on the left of reviewing officer or as otherwise directed, and the colors return to their post.

Escorts

Escort of the Color

1031. The regiment being in line of masses, the colonel details a company, other than the color company, to receive and escort the national color to its place. During the ceremony, the regimental color remains with the color guard at its post with the regiment.

The band moves straight to its front until clear of the line of field officers, changes direction to the right, and is halted ; the designated company forms column of platoons in rear of the band, the color bearer in the line of file closers of the center platoon.

The escort then marches without music to the colonel's office or quarters and is formed in line facing the entrance, the band on the right.

The color bearer, preceded by the senior first lieutenant and followed by a sergeant of the escort, then goes to obtain the color.

When the color bearer comes out, followed by the lieutenant and sergeant, he halts before the entrance, facing the escort ; the lieutenant places himself on the right, the sergeant on the left of the color bearer ; the escort presents arms, and the field music sounds to the color ; the first lieutenant and the sergeant salute.

Arms are brought to the order ; the lieutenant and the sergeant return to their posts ; the company is formed in column of platoons, the band taking post in front of the column ; the color bearer places himself in the center of the interval in rear of the center platoon ; the escort marches in quick time, with guide left, back to the regiment, the band playing ; the march is so conducted that the escort arrives at 50 paces in front of the right of the regiment, marching parallel to its front ; when the color arrives opposite its place in the formation of the regiment, the escort is formed in line to the left ; the color

bearer, passing between the platoons, advances and halts 12 paces in front of the colonel.

The color bearer having halted, the colonel, who has taken post 30 paces in front of the center of his regiment, faces about, commands : **Present arms,** faces to the front, and salutes ; the field music sounds to the color.

The colonel then faces about and brings the regiment to the order ; the color bearer then takes his post with the color company.

The escort presents arms and comes to the order with the regiment, at the command of the colonel, after which the captain forms it again in column of platoons, and preceded by the band, marches it to its place, passing around the left flank of the regiment.

The band plays until the escort passes the left of the line, when it ceases playing and returns to its post on the right, passing in rear of the regiment.

The regiment may be brought to rest when the escort passes the left of the line.

1032. Escort of the color is executed by a battalion according to the same principles.

Escorts of Honor

1033. Escorts of honor are detailed for the purpose of receiving and escorting personages of high rank, civil or military. The troops detailed for this duty are selected for their soldierly appearance and superior discipline.

The escort forms in line, opposite the place where the personage is to present himself, the band on the flank of the escort toward which it is to march. On the appearance of the personage, the honors due to his rank are rendered. The escort then forms column of platoons or squads and takes up the march, the personage with his staff or retinue taking position in rear of the column ; when he leaves the escort, line is formed, and the same honors are rendered as on his arrival.

When the position of the escort is at a considerable distance from the point where the personage is to be received, as for instance, where a courtyard or wharf intervenes, a double line of sentinels is posted from that point to the escort, facing inward ; the sentinels successively salute as he passes and are then relieved and join the escort.

An officer is designated to attend the personage and bear such communication as he may have to make to the commander of the escort.

Funeral Escort

1034. The composition and strength of the escort are prescribed in Army Regulations.

The escort is formed opposite the quarters of the deceased, the band on the flank of the escort toward which it is to march.

Upon the appearance of the coffin, the commander commands : 1. Present, 2. ARMS, and the band plays an appropriate air ; arms are then brought to the order.

The escort then forms column of platoons or squads ; escorts of the strength of a platoon or less may form line. The procession forms in the following order :

1. Music, 2. Escort, 3. Clergy, 4. Coffin and pallbearers, 5. Mourners, 6. Members of the former command of the deceased, 7. Other officers and soldiers, 8. Distinguished persons, 9. Delegations, 10. Societies, 11. Civilians. Officers and soldiers (Nos. 6 and 7), with side arms, are in the order of rank, seniors in front.

When the procession has been formed, the commander of the escort puts it in march.

The escort marches slowly to solemn music ; when the column arrives opposite the grave, line is formed facing it.

The coffin is then carried along the front of the escort to the grave ; arms are presented, and the music plays an appropriate air ; when the coffin has been placed over the grave, the music ceases, and arms are brought to the order.

The commander next commands : 1. Parade, 2. REST. The escort executes parade rest, officers and men inclining the head.

When the funeral services are completed and the coffin lowered into the grave, the commander causes the escort to resume attention and fire three rounds of blank cartridges, elevating the muzzles of the pieces. When the escort is larger than a company, one company is designated to fire the volleys.

A musician then sounds taps.

The escort is then formed into column, marched in quick time to the point where it was assembled, and dismissed.

The band does not play until it has left the inclosure.

When the distance to the place of interment is considerable, the escort, after leaving the camp or garrison, may march at ease in quick time until it approaches the burial ground, when it is brought to attention. The music does not play while marching at ease.

The field music may alternate with the band in playing.

1035. At the funeral of a person entitled to the honor, the band plays the prescribed national air, or the field music sounds

to the color; march, flourishes, or ruffles, according to the rank of the deceased, when arm are presented; on conclusion of the musical honors, the band plays an appropriate air.

1036. At the funeral of a mounted officer or soldier, his horse, in mourning caparison, follows the hearse.

1037. Should the entrance of the cemetery prevent the hearse from accompanying the escort to the grave, the column is halted at the entrance long enough to take the coffin from the hearse, when it is again put in march.

1038. When necessary to escort the remains from the quarters of the deceased to the church before the funeral service, arms are presented upon receiving the remains at the quarters and also as they are borne into the church.

1039. Prior to the funeral, the commander of the escort gives the clergyman and pallbearers all needful directions.

2. INSPECTIONS

Company Inspection

1040. The company being in column of platoons at full distance, the captain commands: 1. **Prepare for inspection,** 2. **MARCH.**

At the first command, each platoon leader commands: **Open ranks.**

At the command march, the front rank of each platoon executes right dress; the rear rank and the file closers march backward 4 steps, halt, and execute right dress.

Each platoon leader aligns the front rank, rear rank, and file closers of his platoon, takes post 3 paces in front of the right guide, facing to the left, and commands: **Front,** and faces to the front.

The captain then commands: **Rest,** and commencing at the head of the column, makes a minute inspection of the arms, accouterments, dress, and ammunition of the personnel of the several platoons and company headquarters. As he approaches each platoon, its leader faces to the left and commands: 1. **Platoon,** 2. **ATTENTION,** 3. **PREPARE FOR INSPECTION,** and faces to the front; as soon as inspected, he accompanies the captain.

The inspection is from right to left in front, and from left to right in rear, of each rank and of the line of file closers.

Each man, as the captain approaches him, executes **inspection arms.**

The captain takes the piece, grasping it with his right hand just above the rear sight (Model-1903 rifle) or the lower band

(Model-1917 rifle), the man dropping his hands. The captain inspects the piece, and with the hand and piece in the same position as in receiving it, hands it back to the man, who takes it with the left hand at the balance and executes **order arms.**

Men successively execute **inspection arms,** as the inspecting officer returns the piece to the man on their right.

Should the piece be inspected without handling, each man executes **order arms** as soon as the captain passes to the next man.

Enlisted men armed with the pistol execute **inspection pistol** by drawing the pistol from the holster and holding it diagonally across the body, barrel up, and 6 inches in front of the neck, muzzle pointing up, and to the left. The pistol is returned to the holster as soon as the captain passes.

Upon completion of the inspection of each platoon, its leader takes post facing to the left, 3 paces in front of the right guide, and commands : 1. **Close ranks,** 2. **MARCH,** and adds **Rest,** after the ranks have been closed.

At the command **MARCH,** the rear rank closes to 40 inches, each man covering his file leader ; the file closers close to 2 paces from the rear rank. The platoon leader then resumes his post in front of the center of the platoon.

The company may be inspected in line according to similar principles.

1041. If the company is dismissed, rifles are put away. In quarters, headdress and accouterments are removed, and the men stand near their respective bunks ; in camp, they stand covered but without accouterments, in front of their tents.

If the personal field equipment has not been inspected in ranks and its inspection in quarters or camp is ordered, each man arranges the prescribed articles, on his bunk if in quarters or permanent camp, in front of his half of the tent if in shelter-tent camp, in the same relative order as prescribed in paragraph 1042.

The captain, accompanied by the platoon leaders, then inspects the quarters or camp. The first sergeant precedes the captain and calls the men to attention on entering each squad room or on approaching the tents ; the men stand at attention but do not salute.

1042. If the inspection is to include an examination of the equipment while in ranks, the captain, after the inspection of arms has been completed, causes the platoons to stack arms, march backward 4 paces in rear of the stacks, and take intervals. He then commands : 1. **UNSLING EQUIPMENT,** 2. **OPEN PACKS.**

At the first command, each man unslings his equipment and places it on the ground at his feet, haversack to the front, the pack 1 foot in front of toes.

At the second command, pack carriers are unstrapped, packs removed and unrolled, the longer edge of the pack along the lower edge of the cartridge belt. Each man exposes shelter tent pins and pole, removes meat can, knife, fork, and spoon from the meat-can pouch, and places them on the right of the haversack, knife, fork, and spoon in the open meat-can ; removes the canteen and cup from the cover and places them on the left side of the haversack ; unstraps and spreads out the haversack so as to expose its contents ; folds up the carrier so as to uncover the cartridge pockets ; opens the pockets ; unrolls toilet articles and places them on the outer flap of the haversack ; places underwear carried in pack on the left half of the open pack, with round fold parallel to front edge of pack ; opens first-aid pouch and exposes contents to view. Special articles carried by individual men, such as flag kit, field glasses, compass, steel tape, notebook, etc., are arranged on the right half of the open pack. Each man then resumes the attention.

The captain then passes along the ranks and file closers as before, inspects the equipment, returns to his position in front of the center of the leading platoon, and commands: **CLOSE PACKS.**

Each man rolls up his toilet articles and underwear, straps up his haversack and its contents, replaces the meat can, knife, fork, and spoon, and the canteen and cup ; closes cartridge pockets and first-aid pouch ; restores special articles to their proper receptacles ; rolls up and replaces pack in carrier ; and leaving the equipment in its position on the ground, resumes the attention.

All equipments being packed, the captain commands : **SLING EQUIPMENT.**

The equipments are slung, and belts fastened.

The captain then causes the platoons to assemble and take arms. The inspection is completed as already explained.

1043. The noncommissioned officer or private in charge of company headquarters prepares the detachment for inspection as prescribed for platoon leaders, posting his detachment at ten paces from the rear platoon before opening ranks.

1044. The captain may direct the platoon leaders to make the detailed inspection of the arms, equipment, etc., of the men of their platoons.

The second in command accompanies the captain throughout the inspection or makes such part of the inspection as the captain may direct.

1045. Should the inspector be other than the captain, the latter, after commanding REST, faces to the front. When the inspector approaches, the captain faces about, brings the company to attention, faces to the front, and salutes. As soon as inspected, he faces about, commands : REST, and accompanies the inspector. The inspection proceeds as before.

Battalion Inspection

1046. If the formation is to include both inspection and review, the inspection may either precede or follow the review.

The battalion is formed in line of close columns (Plate IV), all officers dismounted. The major causes the companies to extend to full distance ; the band, noncommissioned staff and colors conform to the movement of the companies.

The major commands : 1. Prepare for inspection, 2. MARCH.

At the first command, each captain commands : Open ranks.

At the command march, ranks are opened in each company as in the inspection of the company.

Buglers join their companies.

The band opens ranks.

The inspector inspects the major, and accompanied by the latter, inspects the staff officers.

The major then commands : REST, and with his staff, accompanies the inspector.

If the major is the inspector, he commands : REST, and inspects his staff, which then accompanies him.

The inspector, commencing at a flank of the battalion, then makes an inspection of the arms, accouterments, dress, and ammunition of each soldier of the band, the several companies, the color guard, and the noncommissioned staff.

The adjutant gives the necessary commands for the inspection of the band, the color guard, and the noncommissioned staff.

When the inspector approaches the band, the adjutant commands : PREPARE FOR INSPECTION.

As the inspector approaches him, each man raises his instrument in front of the body, reverses it so as to show both sides, and then returns it. Buglers execute inspection similarly.

The band plays during the inspection of the companies.

As the inspector approaches each company, its captain commands : 1. Company, 2. ATTENTION, and faces to the front ; as soon as inspected, he faces about, commands : REST and accompanies the inspector. The inspection proceeds as in company inspection. At the completion of the inspection of

the noncommissioned staff and each company, the major directs their dismissal, unless otherwise directed by the inspector.

1047. If the inspection will probably last a long time, the companies not under inspection may be permitted to stack arms and fall out; as the inspection of the preceding company nears completion, they fall in and take arms.

1048. At the inspection of quarters or camp, the inspector is accompanied by the captain, followed by the other officers or by such of them as he may designate. The inspection is conducted as described in company inspection.

Regimental Inspection

1049. The commands, means, and principles are the same as described for a battalion.

The regiment is formed in line of masses or such other suitable formation as required by the ground and the space available.

Before opening ranks, companies are extended to full distance.

On the approach of the inspector, each major brings his battalion to attention. Battalion inspection follows. Inspection of special units follows that of the battalions.

3. MUSTER

1050. The company is formed for muster in line or close column. The captain is provided with the roll of company and a list of absentees, alphabetically arranged, showing cause and place of absence.

As the mustering officer approaches, the captain salutes. The mustering officer returns the salute and directs the captain to prepare his company for muster. The captain commands: 1. Right shoulder, 2. ARMS, 3. Attention to muster.

The mustering officer or the captain then calls the names on the roll; each man as his name is called answers here and brings his piece to order arms.

After muster, the mustering officer verifies the presence of men reported in hospital, on guard, etc.

Muster is so conducted as to interfere as little as possible with the instruction of the troops.

4. HONORS AND SALUTES

1051. Further rules governing honors, courtesies, etc., are prescribed in Army Regulations.

1052. (1) Salutes are exchanged between officers and soldiers not in a military formation, nor at drill, work, games, or mess, on every occasion of their meeting, passing near or being addressed, the officer junior in rank or the soldier saluting first.

(2) When an officer enters a room where there are several soldiers, the warning " attention " is given by some one who perceives him, when all rise, uncover, and remain standing at attention until the officer leaves the room or directs otherwise. Soldiers at meals stop eating and remain seated at attention.

(3) A soldier, if seated, rises on the approach of an officer, faces toward him, stands at attention, and salutes. If standing, he faces an officer for the same purpose. If the parties remain in the same place or on the same ground, such compliments need not be repeated. Soldiers actually at work do not cease work to salute an officer unless addressed by him.

(4) Before addressing an officer, a soldier executes the prescribed salute with the weapon with which he is armed, or if unarmed, with the right hand. He salutes after receiving a reply.

(5) In uniform, covered or uncovered, but not in formation, officers and soldiers salute military persons as follows: With arms in hand, the salute prescribed for that arm (sentinels on interior guard duty excepted); without arms, the right-hand salute.

(6) In civilian dress, covered or uncovered, officers and soldiers salute military persons by executing the right hand salute.

(7) Officers and soldiers render the prescribed salutes in a military manner, the officer junior in rank, or the soldier, saluting first. When several officers in company are saluted, all entitled to the salute return it.

(8) Except in the field under campaign or simulated campaign conditions, a mounted officer or soldier dismounts before addressing a superior not mounted.

(9) A man in formation does not salute when directly addressed, but comes to attention if at rest or at ease.

(10) Saluting distance is that within which recognition is easy. In general, it does not exceed 30 paces.

(11) When an officer entitled to the salute passes in rear of

a body of troops, it is brought to attention while he is opposite the post of the commander.

(12) In public conveyances, such as railway trains and street cars, and in public places, such as theatres, honors and personal salutes may be omitted when palpably inappropriate.

(13) Soldiers at all times and in all situations pay the same compliments to officers of the Army, Navy, Marine Corps, and Volunteers, and to officers of the National Guard as to officers of their own regiment, corps, or arm of service.

(14) Sentinels on post doing interior-guard duty conform to the foregoing principles but salute by presenting arms when armed with the rifle. They do not salute if it interferes with the proper performance of their duties.

1053. (1) Commanders of detachments or other commands salute officers of higher grades by first bringing the unit to attention and then saluting as required by subparagraph (5), paragraph 1052. If the person saluted is of a junior or equal grade, the unit need not be at attention in the exchange of salutes.

(2) If two detachments or other commands meet, their commanders exchange salutes, both commands being at attention.

1054. Salutes and honors, as a rule, are not paid by troops actually engaged in drill, on the march, or in the field under campaign or simulated campaign conditions. Troops on the service of security pay no compliments whatever.

1055. A company in line or close column, or a larger unit in line or line of columns, at a halt (not in the field) and armed with the rifle, is brought to present arms before its commander salutes in the following cases : When the National Anthem is played, or when to the color is sounded during ceremonies, or when a person is saluted who is its immediate or higher commander or a general officer, or when the national or regimental color is saluted.

1056. At parades and other ceremonies, under arms, the command renders the prescribed salute and remains in the position of salute while the National Anthem is being played ; also at retreat and during ceremonies when to the color is sounded, if no band is present . If not under arms, units are brought to attention at the first note of the National Anthem or to the color, and the salute rendered by the officer or noncommissioned officer in command.

1057. Whenever the National Anthem is played at any place where persons belonging to the military service are present, all officers and enlisted men not in formation stand at attention

facing toward the music (except at retreat, when they face toward the flag). If in uniform, covered or uncovered, or in civilian clothes, uncovered, they salute at the first note of the anthem, retaining the position of salute until the last note of the anthem. If not in uniform and covered, they uncover at the first note of the anthem, holding the headdress opposite the left shoulder and so remain until its close, except that in inclement weather the headdress may be slightly raised.

The same rules apply when to the color is sounded as when the National Anthem is played.

When played by an Army band, the National Anthem is played through without repetition of any part not required to be repeated to make it complete.

The same marks of respect, prescribed for observance during the playing of the National Anthem of the United States, is shown toward the national anthem of any other country when played upon official occasions.

1058. Officers and soldiers passing the uncased color render honors as follows : if in uniform, they salute as required by subparagraph (5), paragraph 1052 ; if in civilian dress and covered, they uncover, holding the headdress opposite the left shoulder with the right hand ; if uncovered, they salute with the right-hand salute.

1059. In rendering honors at ceremonies, officers and leaders of platoons and equivalent subdivisions, without arms in hand, execute the first motion of the hand salute at the command arms of present arms and the command right (left) of eyes right (left). They execute the second motion at the command arms of order arms and at the command front. Noncommissioned officers commanding platoons and equivalent subdivisions and armed with the rifle execute present arms and order arms with their platoons ; during exercises in the manual, they remain at order arms ; in executing eyes right (left), they execute the first motion of the rifle salute at the command right (left) and the second motion at the command front. For salutes with the saber, see paragraph 1083.

1060. Officers and noncommissioned officers saluting individually when passing in review at ceremonies execute eyes right (left) at the first motion of the hand salute ; they return to front when the salute is terminated.

CHAPTER XII. — MANUALS

1. THE COLOR

1061. The word " color " implies the national color ; it includes the regimental color when both are present.

The rules prescribing the colors to be carried by regiments and battalions on all occasions are contained in Army Regulations.

1062. In garrison the colors, when not in use, are kept in the office or the quarters of the colonel and are escorted thereto and therefrom by the color guard. In camp the colors, when not in use, are in front of the colonel's tent. From reveille to retreat, when the weather permits, they are displayed uncased ; from retreat to reveille and during inclement weather, they are cased.

Colors are said to be cased when furled and protected by the oil-cloth covering.

1063. The regimental color salutes in the ceremony of escort of the color and in rendering honors to an officer entitled to the salute of the color, but in no other case.

If marching, the regimental color salutes when at 6 paces from the officer entitled to the salute, and resumes the carry when 6 paces beyond him.

The national color renders no salute.

The Color Guard

1064. The color guard consists of two color sergeants, who are the color bearers, and two experienced privates selected by the colonel. The senior color sergeant carries the national color, the junior color sergeant the regimental color. The regimental color, when carried, is always on the left of the national color, in whatever direction they may face.

1065. The color guard is formed and marched in one rank, the color bearers in the center. It is marched in the same manner and by the same commands as a squad, substituting, when necessary, guard for squad.

1066. When battalions are formed abreast, the color company is the center company of the center battalion. When

battalions are disposed one behind the other, the color company is the center company of the leading battalion. The color company at the original formation of the battalion or regiment remains the color company during subsequent movements unless otherwise directed.

1067. The post of the color guard in the several formations of the battalion is as shown in Plate IV. During movements involving changes of formation, the color guard conforms to the plates and maintains its position with reference to the flank or end of the color company on which it was originally posted in accordance with the principles of paragraph 22. In all changes of directions at ceremonies, the color guard moves in such manner as not to interfere with the march of units in its rear.

1068. In line (Plate IV), the color guard is in the center of the interval on the left of the color company on line with the front rank.

In line of close columns (Plate IV), the color guard is in the center of the interval on the left of the leading platoon of the color company on line with the front rank.

In close line (Plate IV), the color guard is in the center of the interval on the left of the color company on line with the leading guides.

When the regiment is formed in line of battalion columns or line of battalions in column of company close lines (Plate V) in the ceremonies of large commands, the color guard forms in the center of the interval on the left of the leading company of the center battalion. It rejoins the color company when the regiment changes formation.

1069. When with a battalion that takes the battle formation, the color guard joins the regimental reserve ; the reserve commander directs the color guard to join a designated company.

1070. The color guard executes neither loadings nor firings ; in rendering honors, it executes all movements in the manual ; in drill, all movements unless specially excused.

To Receive the Color

1071. The color guard presents arms on receiving and parting with the color at the command of the senior color sergeant. After parting with the color, the color guard is brought to order arms by command of the senior member who is placed as the right man of the guard.

1072. At drills and ceremonies in which the color is to part-

icipate, excepting escort of the color, the color is received by the color company prior to the formation of the battalion.

The formation of the color company completed, the captain faces to the front ; the color guard, conducted by the senior sergeant, approaches from the front and halts at a distance of 10 paces from the captain, who then faces about, brings the company to the present, faces to the front, salutes, again faces about and brings the company to the order. The color guard executes the present and the order with the color company, and is then marched by the color sergeant directly to its post on line with the front rank of the company (in line) or of the leading platoon (close column), 5 paces from the guide of the company or platoon.

1073. When the battalion is dismissed, the color guard escorts the color to the office or quarters of the colonel.

Manual of the Color

1074. At the carry, the heel of the pike rests in the socket of the sling ; the right hand grasps the pike at the height of the shoulder.

At the order, the heel of the pike rests on the ground near the right toe, the right hand holding the pike in a vertical position.

At parade rest, the heel of the pike is on the ground, as at the order : the pike is held with both hands in front of the center of the body, left hand uppermost.

The order is resumed at the command attention.

The left hand assists the right when necessary.

The carry is the habitual position when the troops are at shoulder, port, or trail arms.

The order and the parade rest are executed with the troops.

The color salute : Being at the carry, slip the right hand up the pike to the height of the eye, then lower the pike by straightening the arm to the front.

2. THE BAND

1075. The band is formed in two or more ranks with sufficient intervals between the men and distances between the ranks to permit of the free use of the instruments.

The field music, when united, forms with, and in rear of, the band ; when the band is not present, the posts, movements, and duties of the field music are the same as prescribed for the band ; when a musician is in charge, his position is on the right

of the front rank. When the battalion or regiment turns about by squads, the band executes the countermarch; when the battalion or regiment executes right, left, or about face, the band faces in the same manner.

In marching, each rank dresses to the right.

In executing open ranks, each rank of the band takes a distance of 3 paces from the rank next in front; the drum major verifies the alignment.

The field music sounds the march, flourishes, or ruffles, and to the color at the signal of the drum major.

1076. The post of the drum major is 3 paces in front of the center of the front rank. He gives the signals or commands for the movements of the band as for a squad, substituting in the commands band for squad.

Signals of the Drum Major

1077. Preparatory to a signal, the staff is held with the right hand near the head of the staff, hand below the chin, back of the hand to the front, ferrule pointed upward and to the right.

Prepare to play: Face toward the band and extend the right arm to its full length in the direction of the staff. **Play**: Bring the arm back to its original position in front of the body.

Prepare to cease playing: Extend the right arm to its full length in the direction of the staff. **Cease playing**: Bring the arm back to its original position in front of the body.

To march: Turn the wrist and bring the staff to the front, the ferrule pointing upward and to the front; extend the arm to its full length in the direction of the staff.

To halt: Lower the staff into the raised left hand and raise the staff horizontally above the head with both hands, the arms extended; lower the staff with both hands to a horizontal position at the height of the hips.

To countermarch: Face toward the band and give the signal to march; each front-rank man to the right of the drum major turns to the right about, each front-rank man to the left turns to the left about; each front-rank man is followed by the men covering him. The drum major passes through the center.

To oblique: Bring the staff to a horizontal position, the head of the staff opposite the neck, the ferrule pointing in the direction the oblique is to be made; extend the arm to its full length in the direction of the staff.

To march by the right flank: Extend the arm to the right, the staff vertical, ferrule upward, back of the hand to the rear.

To march by the left flank : Extend the arm to the left, the staff vertical, ferrule upward, back of the hand to the front.

To diminish front : Let the ferrule fall into the left hand at the height of the eyes, right hand at the height of the hip.

To increase front : Let the ferrule fall into the left hand at the height of the hip, right hand at the height of the neck.

The march, flourishes, or ruffles : Bring the staff to a vertical position, hand opposite the neck, back of the hand to the front, ferrule pointing down.

To the color : Bring the staff to a horizontal position at the height of the neck, back of the hand to the rear, ferrule pointing to the left.

When the band is playing in marching, the drum major beats the time with his staff and supports the left hand at the hip, fingers in front, thumb to the rear.

The drum major, with staff in hand, salutes by bringing his staff to a vertical position, head of the staff up and opposite the left shoulder.

At a halt, when the band not playing, the drum major holds his staff with the ferrule touching the ground about 1 inch from the toe of the right foot, at an angle of about 60°, ball pointing upward to the right, right hand grasping staff near the ball, back of the hand to the front ; left hand at the hip, fingers in front, thumb to the rear.

3. THE SABER

General Rules

1078. An officer or noncommissioned officer, supervising the formation of a unit, draws saber on taking post for that purpose. An officer in command of a unit draws saber after receiving the report of the officer or noncommissioned officer supervising the formation.

1079. The saber is drawn whenever troops are at attention. It is carried in the scabbard or at will when troops are marching at ease or at route step or standing at rest or at ease.

1080. The saber is held at the carry when giving commands, marching at attention, or changing position in quick time.

1081. The saber, when drawn, is held in the position of order when troops are standing at attention except as prescribed in paragraph 1080. When arms are brought to the order, officers and enlisted men with the saber drawn execute order saber.

1082. *In publishing orders, calling the roll, etc., the saber is held suspended from the right wrist by the saber knot; when the saber knot is used, it is placed on the wrist before drawing saber and taken off after returning saber.

1083. In rendering honors with troops, officers execute the first motion of the present at the command present or eyes and the second motion at the command arms or right (left); noncommissioned officers armed with the saber execute the first motion at the command arms or right (left) and omit the second motion. At the command front, officers and noncommissioned officers armed with the saber return to the carry.

Officers saluting individually when passing in review execute eyes right (left) at the second motion of present saber and front when returning to the carry. Non-commissioned officers, saluting individually when passing in review, execute eyes right (left) at the first motion of present saber and omit the second motion; they execute front when returning to the carry.

1084. At reviews, the commanding officer of the troops returns saber after taking post on the left of the reviewing officer and draws saber before rejoining his command and after saluting the reviewing officer; the staff of the commanding officer of the troops returns and draws saber with him.

1085. After marching to the front and center and saluting the major at battalion parade, officers return to the carry with the major.

1086. At battalion parade, the major draws saber after receiving the report of the adjutant and returns saber after giving the command for passing the battalion in review. Officers posted on line with the major's staff return saber with him.

1087. At inspection, the commanding officer of the troops comes to carry saber after saluting the inspecting officer; other officers come to carry saber on the approach of the inspecting officer. All officers who accompany the inspecting officer during his inspection return saber after being inspected.

Manual of the Saber

1088. 1. Draw, 2. SABER.

At the command draw, unhook the saber with the thumb and the first two fingers of the left hand, thumb on the end of the hook, fingers lifting the upper ring; grasp the scabbard with the left hand at the upper band, bring the hilt a little forward, seize the grip with the right hand, and draw the blade 6 inches

out of the scabbard, pressing the scabbard against the thigh with the left hand.

At the command **saber**, draw the saber quickly, raising the arm to its full extent to the right front at an angle of about 45° with the horizontal, the saber, edge down, in a straight line with the arm ; make a slight pause and bring the back of the blade against the shoulder, edge to the front, arm nearly extended, hand by the side, elbow back, third and fourth fingers back of the grip ; at the same time, hook up the scabbard with the thumb and first two fingers of the left hand, thumb through the upper ring, fingers supporting it ; drop the left hand by the side.

This is the position of carry saber dismounted.

1089. Officers and noncommissioned officers armed with the saber unhook the scabbard before mounting ; when mounted, in executing the first motion of **draw saber**, they reach with the right hand over the bridle hand, and without the aid of the bridle hand, draw the saber as before ; the right hand at the **carry** rests on the right thigh.

On foot, the scabbard is carried hooked up.

1090. Being at the order or carry: 1. **Present**, 2. **SABER** (or **ARMS**). At the command **present**, raise and carry the saber to the front, base of the hilt as high as the chin and 6 inches in front of the neck, edge to the left, point 6 inches farther to the front than the hilt, thumb extended on the left of the grip, all fingers grasping the grip.

At the command **saber** or **arms**, lower the saber, point in prolongation of the right foot and near the ground, edge to the left, hand by the side, thumb on left of grip, arm extended. If mounted, hold the hand behind the thigh, point of the saber a little to the right and front of the stirrup.

1091. Being at the carry : 1. **Order**, 2. **SABER** (or **ARMS**).

Drop the point of the saber directly to the front, point on or near the ground, edge down, thumb on back of grip.

Being at the present saber, should the next command be **order arms**, officers and noncommissioned officers armed with the saber **order saber** ; if the command be other than **order arms**, they execute **carry saber**.

When arms are brought to the order, officers or enlisted men with the saber drawn **order saber**.

1092. Being at the order : 1. **Parade**, 2. **REST.**

Take the position of parade rest, except that the left hand is uppermost and rests on the right hand, point of saber on or near the ground in front of the center of the body, edge to the right.

At the command attention, resume the order saber and the position of the soldier.

1093. In marching in double time, the saber is carried diagonally across the breast, edge to the front ; the left hand steadies the scabbard.

1094. Officers and noncommissioned officers armed with the saber, on all duties under arms, draw and return saber without waiting for command. All commands to soldiers under arms are given with the saber drawn.

1095. Being at the carry : 1. Return, 2. SABER.

At the command return, carry the right hand opposite to and 6 inches from the left shoulder, saber vertical, edge to the left ; at the same time, unhook and lower the scabbard with the left hand and grasp it at the upper band.

At the command saber, drop the point to the rear and pass the blade across and along the left arm ; turn the head slightly to the left, fixing the eyes on the opening of the scabbard, raise the right hand, insert and return the blade ; free the wrist from the saber knot (if inserted in it), turn the head to the front, drop the right hand by the side ; hook up the scabbard with the left hand and drop the left hand by the side.

Officers and noncommissioned officers armed with the saber, when mounted, return saber without using the left hand ; the scabbard is hooked up on dismounting.

1096. At inspection, enlisted men with the saber drawn execute the first motion of present saber and turn the wrist to show both sides of the blade, resuming the carry when the inspector has passed.

4. TENT PITCHING

Shelter Tents

1097. Being in single or double column of platoons, the captain commands : FORM FOR SHELTER TENTS.

The soldiers of company and platoon headquarters form additional files on one or both flanks of the platoons, as directed by company and platoon commanders ; blank files are filled by file closers or by men taken from the front rank.

1098. The captain then causes the company to take intervals as described in the School of the Squad, and commands : PITCH TENTS.

At the command pitch tents, each man steps off obliquely to the right with the right foot and lays his rifle on the ground, the butt of the rifle near the toe of the right foot, muzzle to the front, barrel to the left, and steps back into his place ; each front-rank man then draws his bayonet and sticks it in the ground by the outside of the right heel.

Equipments are unslung, packs opened, shelter half, poles and pins removed ; each man then spreads his shelter half, triangle to the rear, flat upon the ground the tent is to occupy, the rear-rank man's half on the right. The halves are then buttoned together. Each front-rank man joins his pole, inserts the top in the eyes of the halves, and holds the pole upright beside the bayonet placed in the ground ; his rear-rank man, using the pins in front, pins down the front corners of the tent on the line of bayonets, stretching the canvas taut ; he then inserts a pin in the eye of the guy rope and drives the pin at such distance in front of the pole as to hold the rope taut. Both then go to the rear of the tent ; the rear-rank man adjusts the pole and the front rank man drives the pins. The rest of the pins are then driven by both men, the rear-rank man working on the right.

As soon as the tent is pitched, each man arranges his equipment and the contents of his pack in the tent and stands at attention in front of his own half on line with the front guy-rope pin.

To have a uniform slope when the tents are pitched, the guy ropes should all be of the same length.

1099. To pitch double shelter tents, the commands are the same as prescribed in paragraph 1098 except that half intervals (2 paces) are taken at the command **Take half interval,** and tents are pitched at the command **Pitch double tents.** Only the odd numbers of the front rank mark the line with the bayonet.

The tent is formed by buttoning together the square ends of two single tents. Two complete tents, except one pole, are used to form a double tent. Two guy ropes are used at each end ; the guy pins are placed in front of the corner pins.

The tents are pitched by Nos. 1 and 2, and by No. 3 and 4, front and rear rank.

All men spread their shelter halves on the ground the tent is to occupy. The halves of front-rank men are placed with the triangular ends to the front. All four halves are then buttoned together, first the ridges and then the square ends. The front corners of the tent are pinned by the front-rank men ;

the odd number holds the poles, the even number drives the pins. The rear-rank men similarly pin the rear corners.

While the odd numbers steady the poles, the even number of the front rank takes his pole and enters the tent; assisted by the even number of the rear rank, he adjusts the pole to the center eyes of the shelter halves in the following order: (1) the lower half of front tent; (2) the lower half of the rear tent; (3) the upper half of the front tent; (4) the upper half of the rear tent. The guy ropes are then adjusted.

The tents having been pitched, the triangular ends are turned back, contents of the rolls arranged, and the men stand at attention, each opposite his own shelter half and facing outward.

1100. When the pack is not carried, the company is formed for shelter tents, intervals are taken, arms are laid aside or on the ground, the men are dismissed and proceed to the wagon, secure their packs, return to their places, and pitch tents as heretofore described.

Single Sleeping Bag

1101. Spread the poncho on the ground, buttoned end at the feet, buttoned side to the left; fold the blanket once across its short dimension and lay it on the poncho, folded side along the right side of the poncho; tie the blanket together along the left side by means of the tapes provided; fold the left half of the poncho over the blanket and button it together along the side and bottom.

Double Sleeping Bag

1102. Spread one poncho on the ground, buttoned end at the feet, buttoned side to the left; spread the blankets on top of the poncho; tie the edges of the blankets together with the tapes provided; spread a second poncho on top of the blankets, buttoned end at the feet, buttoned side to the right; button the two ponchos together along both sides and across the end.

To Strike Shelter Tents

1103. The men standing in front of their tents: STRIKE TENTS.

Equipments and rifles are removed from the tent; the tents are lowered, packs made up, and equipments slung, and the men stand at attention in the places originally occupied after taking intervals.

Common and Wall Tents

1104. To pitch all types of army tents, except shelter and conical wall tents : Mark the line of tents by driving a wall pin on the spot to be occupied by the right (or left) corner of each tent. For pyramidal tents, the interval between adjacent pins should be about 30 feet, which gives a passage of two feet between tents. If the tripod is used, spread it on the ground where the center of tent is to be. Spread the tent on the ground to be occupied, door to the front, and place the right (or left) front wall loop over the pin. The door (or doors, if more than one) being fastened and held together at the bottom, the left (or right) corner wall loop is carried to the left (or right) as far as it will go and a wall pin driven through it, the pin being placed in line with the right (or left) corner pins already driven. At the same time, the rear corner wall loops are pulled to the rear and outward, so that the rear wall of the tent is stretched to complete the rectangle. Wall pins are then driven through these loops. Each corner pin should be directly in rear of the corresponding front corner pin, forming a rectangle. Unless the canvas is wet, a small amount of slack should be allowed before the corner pins are driven. According to the size of the tent, one or two men, crawling under the tent if necessary, fit each pole or ridge or upright into the ring or ridge pole holes, and such accessories as hood, fly, and brace ropes are adjusted. If a tripod be used, an additional man goes under the tent to adjust it. The tent, steadied by the remaining men, one at each corner guy rope, is then raised. If the tent is a ward or storage type, corner poles are next placed at the four corners. The four corner guy ropes are then placed over the lower notches of the large pins which are driven in prolongation of the diagonals at such distance as to hold the walls and ends of the tent vertical and smooth when the guy ropes are drawn taut. A wall pin is then driven through each remaining wall loop, and a large pin for each guy rope is driven in line with the corner guy pins already driven. The guy ropes of the tent are placed over the lower notches of the pins, while the guy ropes of the fly are placed over the upper notches, and are then drawn taut. Brace ropes, when used, are then secured to stakes or pins suitably placed.

Conical Wall Tent

1105. Drive the door pin and center pin, 8 feet 3 inches apart. Using the hood lines with the center pin as center, describe two concentric circles with radii, 8 feet 3 inches, and

11 feet 3 inches. In the outer circle, drive two door guy pins, 3 feet apart. At intervals of about 3 feet, drive the other guy pin.

In other respects, conical tents are erected practically as in the case of pyramidal tents.

To Strike Common, Wall, Pyramidal, and Conical Wall Tents

1106. STRIKE TENTS.

The men first remove all pins except those of the four corner guy ropes or (conical wall tent) the four quadrant guy ropes. The pins are neatly piled or placed in a receptacle.

One man holds each guy, and when the ground is clear, the tent is lowered and folded, or rolled and tied, the poles, or the tripod and pole, fastened together, and the remaining pins collected.

To Fold Tents

1107. In folding common, wall, hospital, and storage tents: Spread the tent flat on the ground, folded at the ridge so that bottoms of side walls are even, ends of tent forming triangles to the right and left; fold the triangular ends of the tent in toward the middle, making it rectangular in shape; fold the top over about 9 inches; fold the tent in two by carrying the top fold over clear to the foot; fold again in two from the top to the foot; throw all guys on the tent except the second from each end; fold the ends in so as to cover about two-thirds of the second cloths; fold the left end over to meet the turned-in edge of the right end, then fold the right end over the top, completing the bundle; tie with the two exposed guys.

Method of Folding Pyramidal Tent

The tent is thrown toward the rear, and the back wall and roof canvas pulled out smooth. This may be most easily accomplished by leaving the rear-corner wall pins in the ground with the wall loops attached, one man at each rear-corner guy and one holding the square iron in a perpendicular position and pulling the canvas to its limit away from the former front of the tent. This leaves the three remaining sides of the tent on top of the rear side, with the door side in the middle.

Next carry the right-front corner over and lay it on the left-rear corner. Pull all canvas smooth, throw guys toward the square iron, and pull the bottom edges even. Then take the

right-front corner and return to the right, covering the right-rear corner. This folds the right side of the tent on itself, with the crease in the middle and under the front side of tent.

Next carry the left-front corner to the right and back as described above ; this when completed will leave the front and rear sides of the tent lying smooth and flat and the two side walls folded inward, each on itself.

Place the hood in the square iron which has been folded downward toward the bottom of tent, and continue to fold around the square iron as a core, pressing all folds down flat and smooth, and parallel with the bottom of the tent. If each fold is compactly made and the canvas kept smooth, the last fold will exactly cover the lower edge of the canvas. Lay all exposed guys along the folded canvas except the two on the center width, which should be pulled out and away from bottom edge to their extreme length for tying. Then, beginning at one end, fold toward the center on the first seam (the one joining the first and second widths), and fold again toward the center so that the already folded canvas will come to within about 3 inches of the middle width. Then fold over to the opposite edge of middle width of canvas. Then begin folding from opposite end, folding the first width in half, then making a second fold to come within about 4 or 5 inches of the part of the tent already folded, turn this fold entirely over that part. Take the exposed guys and draw them taut across each other, turn bundle over on the under guy, cross guys on top of bundle, drawing them tight. Turn bundle over on the crossed guys, and tie lengthwise.

When properly tied and pressed together, the package thus made will be 11 by 23 by 34 inches, requiring about 8,855 cubic inches to store or pack.

Stencil the unit designation on the lower half of the middle width of canvas in the back wall.

5. THE BUGLE

Warning Calls

1108. First call, guard mounting, full dress, overcoats, drill, stable, water, and boots and saddles precede the assembly by such interval as may be prescribed by the commanding officer.

Mess, church, and fatigue, classed as service calls, may also be used as warning calls.

First call is the first signal for formation for roll call and for all ceremonies except guard mounting.

Guard mounting is the *first* signal for guard mounting.

The field music assembles at first call and guard mounting.

In a mixed command, boots and saddles is the signal to mounted troops that their formation is to be mounted; for mounted guard mounting or mounted drill, it immediately follows the signal guard mounting or drill.

When full dress or overcoats are to be worn, the full dress or overcoat call immediately follows first call, guard mounting, or boots and saddles.

Formation Calls

1109. Assembly: The signal for companies or details to fall in.

Adjutant's call: The signal for companies to form battalion; also for the guard details to form for guard mounting on the camp or garrison parade ground; it follows the assembly at such interval as may be prescribed by the commanding officer. It is also used as a signal for the battalions to form regiment, following the first adjutant's call at such interval as the commanding officer may prescribe.

To the color: Sounded when the color salutes.

Alarm Calls

1110. Fire call: The signal for the men to fall in, without arms, to extinguish fire.

To arms: The signal for the men to fall in, under arms, at their company assembly places as quickly as possible.

To horse: The signal for mounted men to proceed under arms to their horses, saddle, mount, and assemble at a designated place as quickly as possible. In extended order, it is used as a signal for troops to remount.

Service Calls

1111. Tattoo, taps, mess, sick, church, recall, issue, officers', captains', first sergeants', fatigue, school, and the general.

The general is the signal for striking tents and loading wagons preparatory to marching.

Reveille precedes the assembly for roll call; retreat follows

the assembly, the interval between the calls being only that required for formation and roll call, except when there is parade.

Taps is the signal for extinguishing lights ; it is usually preceded by call to quarters by such interval as prescribed by Army Regulations.
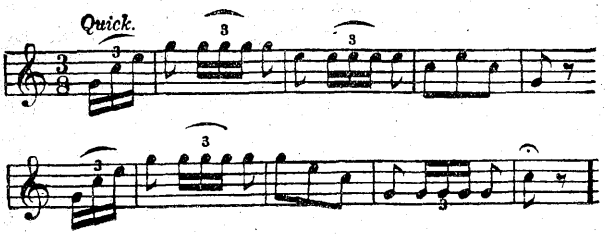
Assembly, reveille, retreat, adjutant's call, to the color, the flourishes, ruffles, and the marches are sounded by all the field music united ; the other calls, as a rule, are sounded by the bugler of the guard or the orderly bugler ; they may also sound the assembly when the buglers are not united.

The morning gun is fired at the first note of reveille, or if marches be played before reveille, it is fired at the commencement of the first march.
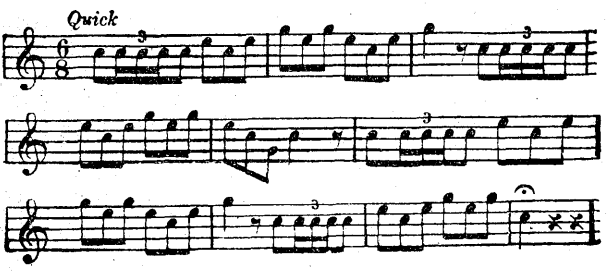
The evening gun is fired at the last note of retreat.

BUGLE CALLS
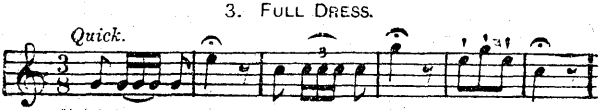
1. FIRST CALL.
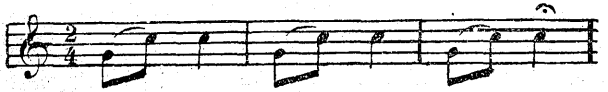


2. GUARD MOUNTING.



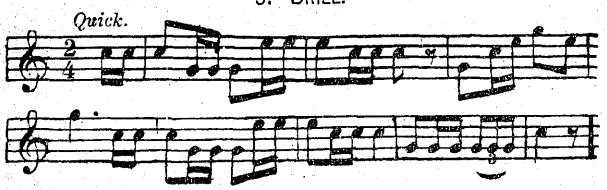
3. FULL DRESS.
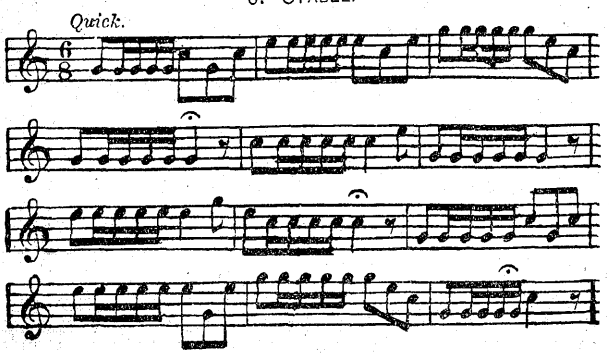


4. OVERCOATS.



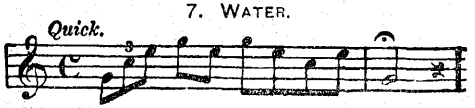
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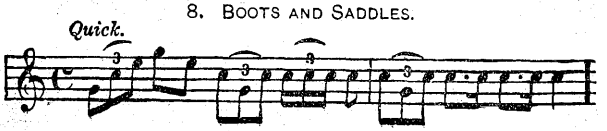


6. STABLE.



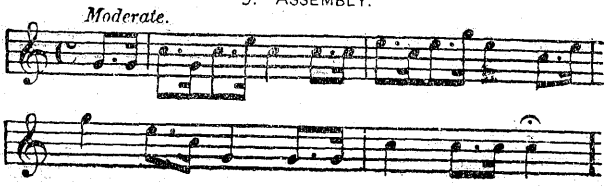
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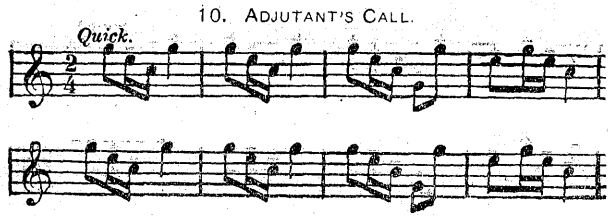
8. BOOTS AND SADDLES.
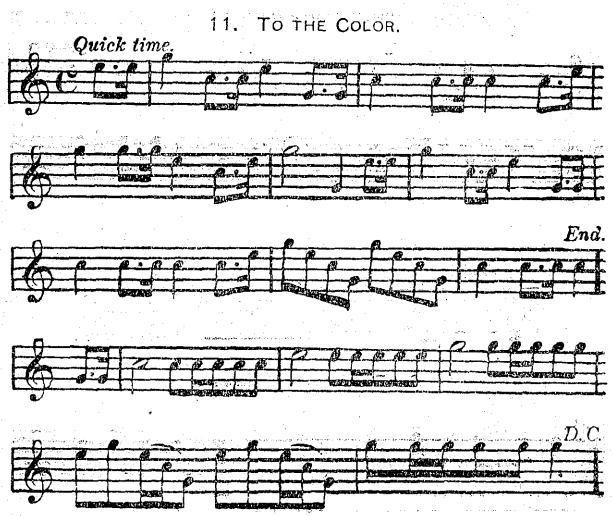


9. ASSEMBLY.
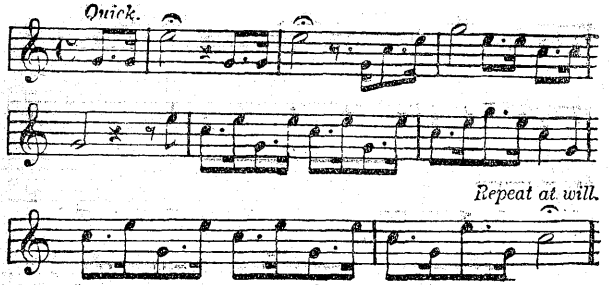


10. ADJUTANT'S CALL.
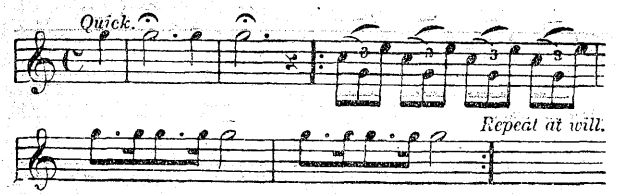


11. TO THE COLOR.



12. FIRE.
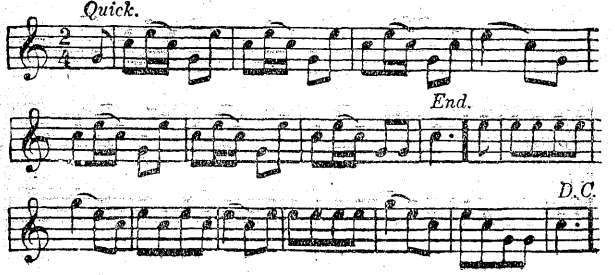


13. TO ARMS
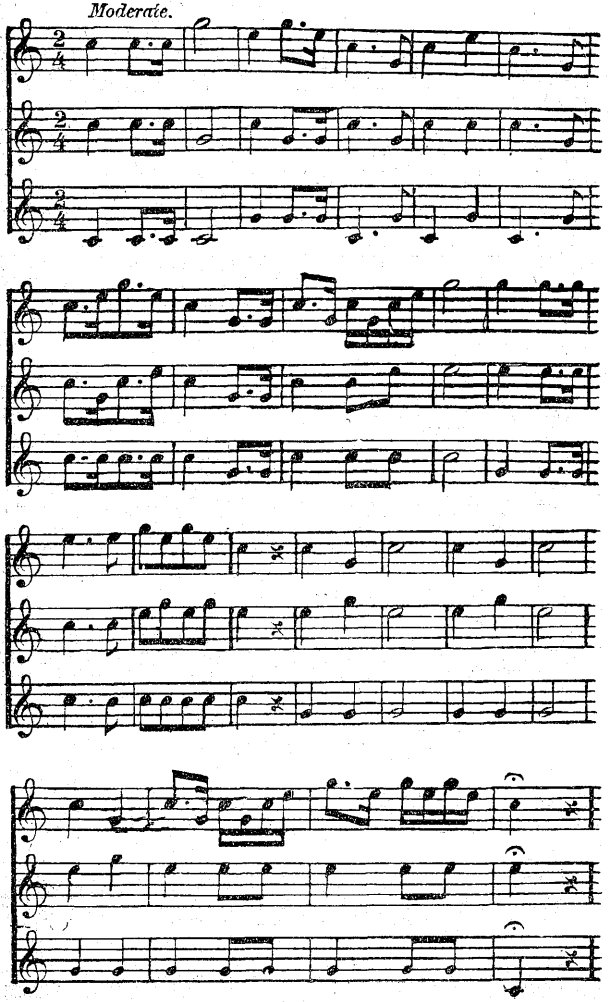


14. TO HORSE.
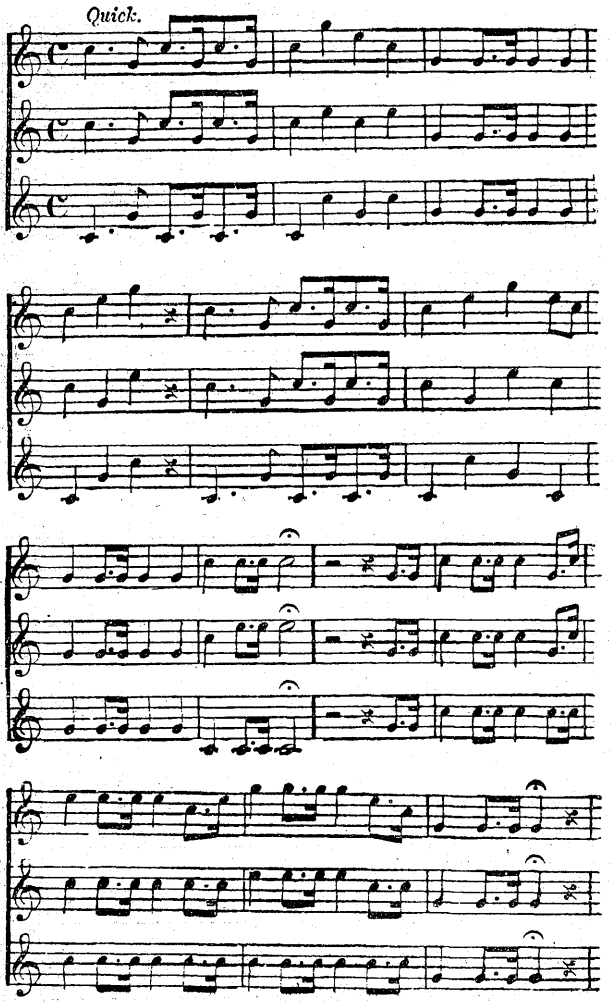


15. REVEILLE
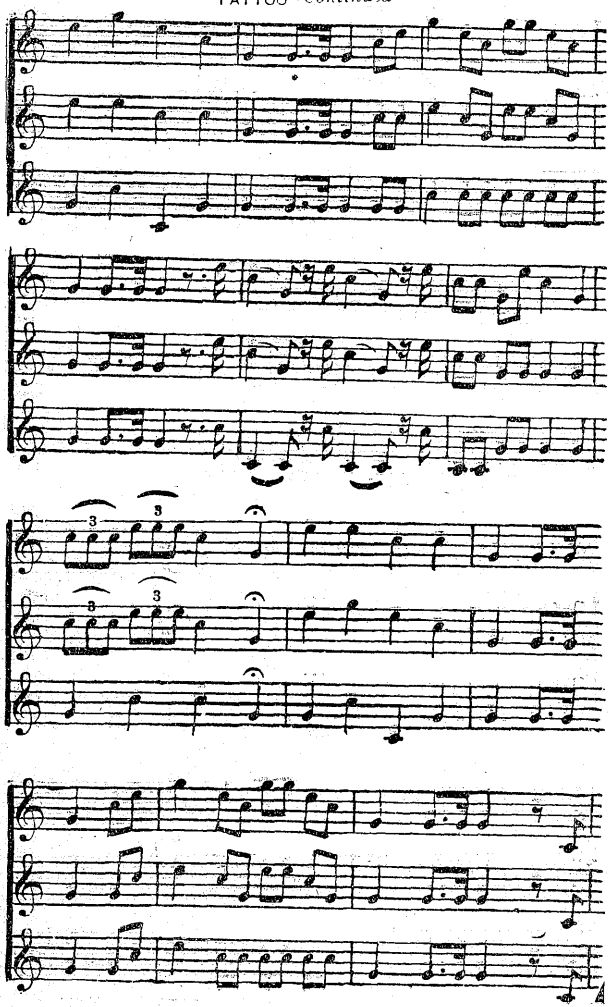


16. RETREAT.
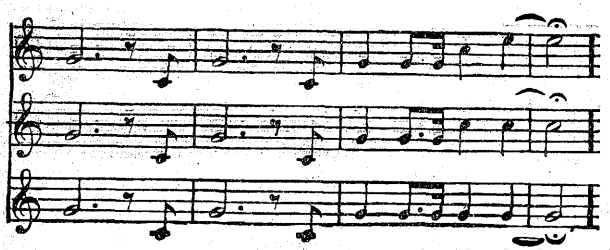


17. TATTOO.



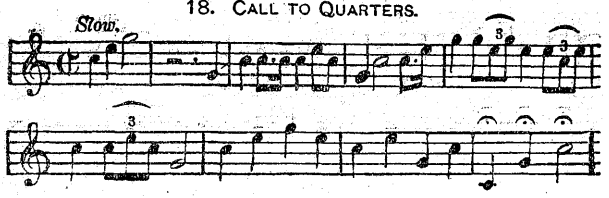
TATTOO—*Continued*
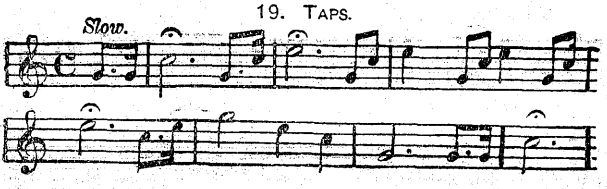


TATTOO—*Concluded.*
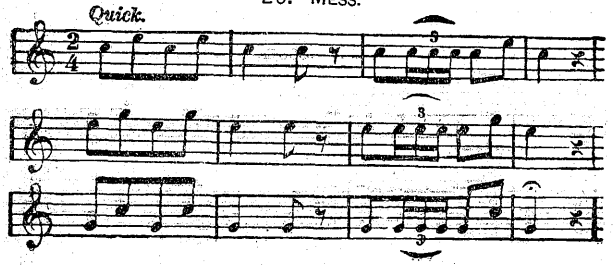


18. CALL TO QUARTERS.
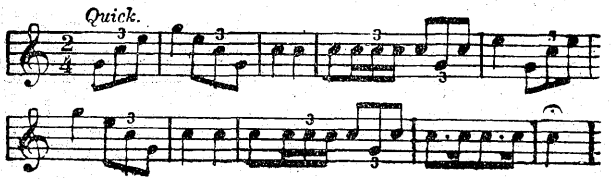


19. TAPS.
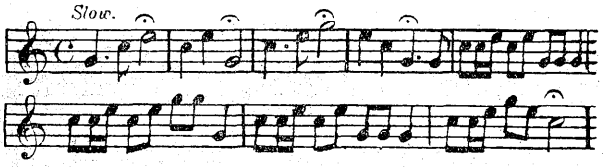


20. MESS.



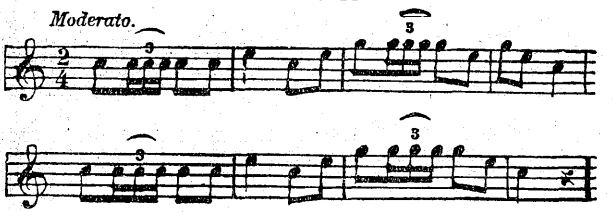
21. SICK.



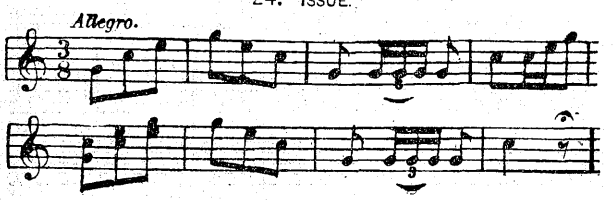
22. CHURCH.
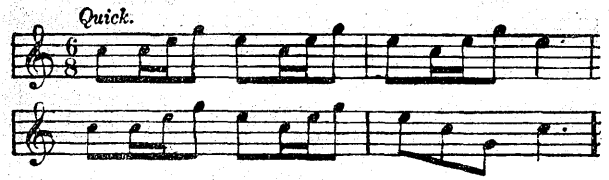


23. RECALL.



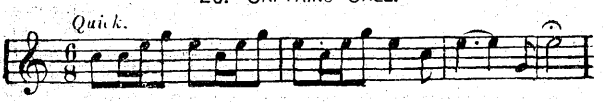
24. ISSUE.
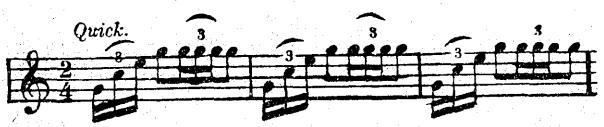


25. OFFICERS' CALL.
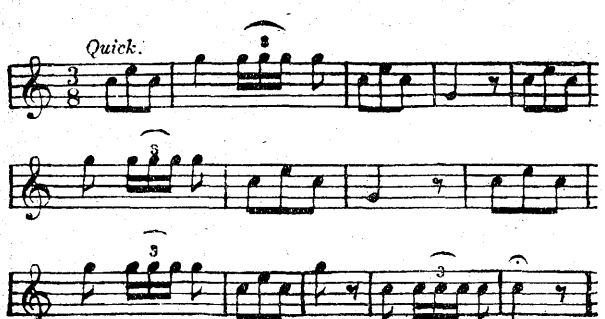


26. CAPTAINS' CALL.
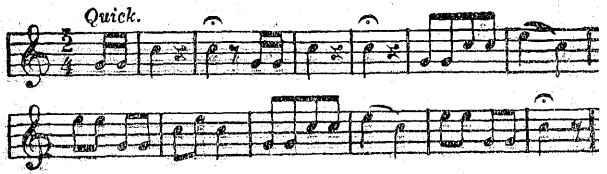


27. FIRST SERGEANTS' CALL.



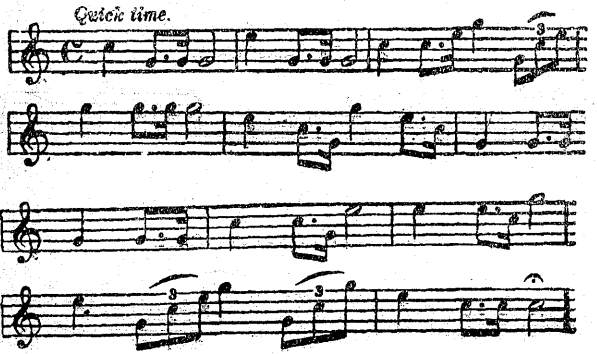
28. FATIGUE.
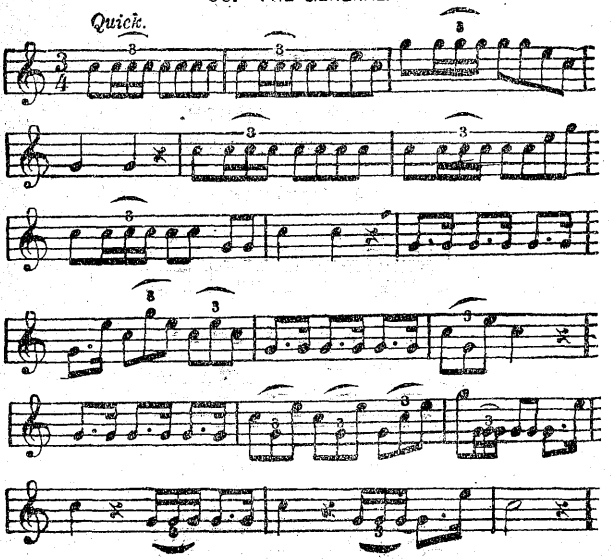


29. SCHOOL.



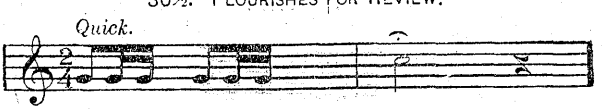
29½ THE GENERAL'S MARCH.



30. THE GENERAL.



30½. FLOURISHES FOR REVIEW.

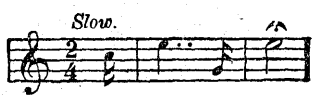


BUGLE SIGNALS
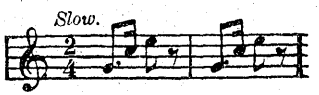
(See paragraph 41).

31. ASSEMBLE. MARCH.
Same as *Assembly*, No. 9.

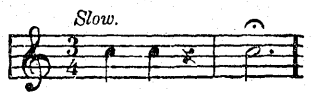
32. ATTENTION.



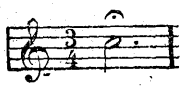
33. ATTENTION TO ORDERS.
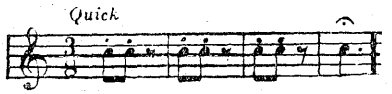


34. FORWARD. MARCH.



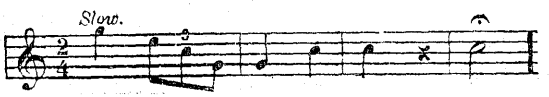
35. HALT.
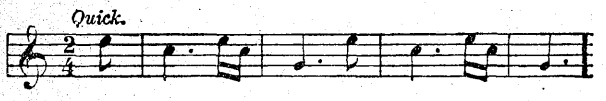


36. DOUBLE TIME. MARCH.



37. TO THE REAR. MARCH.
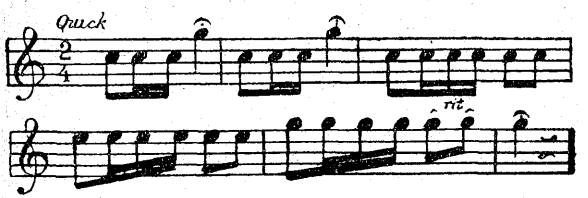


38. COMMENCE FIRING.



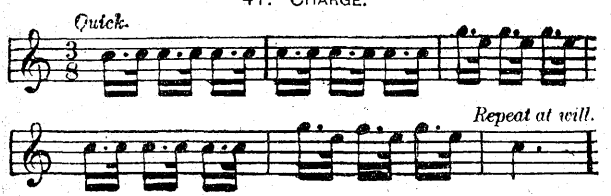
39. CEASE FIRING.



40. FIX BAYONETS.



41. CHARGE.



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