CHAPTER 10

THE OFFENSIVE

Section I. GENERAL

OBJECTIVE

433. An objective sometimes may be attained by maneuver alone; ordinarily it must be gained by battle. A sound tactical maneuver has a great influence on the successful outcome of battle.

434. The purpose of offensive action is the destruction of the hostile armed forces. To facilitate the accomplishment of this purpose, the commander selects a physical objective such as a body of troops, dominating terrain, a center of lines of communication, or other vital area in the hostile rear for his attack. The attainment of this objective is the basis of his own and all subordinate plans. This objective should have the following characteristics:

a. It's capture must be possible within the time and space limits imposed by the assigned mission.

b. Its capture should assure the destruction of the enemy in his position, or. the threat of its capture should compel the enemy to evacuate his position.

c. It should produce a convergence of effort.

d. It must be easily identified.

e. Its capture should facilitate contemplated future operations.

435. The objective having been selected, all components are directed in coordinated efforts towards its attainment. Actions which do not contribute to this purpose are avoided.

436. Sound tactical maneuver in the offensive is characterized by a concentration of effort in a direction where success will insure the attainment of the objective. On the remainder of the front are used only the minimum means necessary to deceive the enemy and to hinder his maneuver to oppose the main attack.

DISTRIBUTION OF FORCES

437. In the offensive, troops are distributed into two or more principal tactical groupings: one or more main or decisive attacks in which the greatest possible offensive power is concentrated to bring about a decision, and one or more secondary or holding attacks whose mission is to render maximum assistance to the main attack.

Main attack groupings are designed to secure the objective and to destroy the hostile force. Secondary attack groupings are designed to hold the enemy in position, to force him to commit his reserves prematurely and to an indecisive location, and to prevent him from reinforcing the front of the main attack.

438. In each tactical grouping, the mass of the available means of combat is applied in a decisive direction.

439. *Main attacks* are characterized by narrow zones of action, strong support of artillery, tanks, and other supporting weapons, effective support of combat aviation, and deep echelonment of reserves.

440. *Secondary attacks* are characterized by lack of depth, reduction of reserves to the minimum, maximum fire power in the attacking echelon, and wide zones of action for the attack units. They will therefore usually be assigned limited objectives initially.

441. When it is impracticable to determine initially when or where the main attack is to be made, the com-

mander retains his freedom to act by disposing his forces in great depth, by holding out strong reserves, and by maintaining close control of his supporting weapons. Mobility of general reserves permits the shifting of the location of the main attack to exploit the success of a secondary attack.

442. Attacking echelons once committed to action lose their immediate availability for employment in the execution of other missions. Deployed and under fire, they can change front only at the risk of incurring heavy losses. The commander can materially influence the course of an action once begun through the employment of reserves, fire support, and by coordination with the air forces commander.

443. In *selecting the direction for the main attack,* the terrain must be carefully studied. The choice of the front on which the main attack and the main efforts of subordinate units are made often is determined by the possibilities which the terrain offers for effective employment of artillery and mechanized units.

Selection of the direction of the main attack is influenced also by the time available for movement before the attack must be launched. In situations where speed is essential, mobile units composed largely of armor may be employed. Such units should not be employed against strongly prepared positions protected by obstacles.

Air superiority and effective coordination with combat aviation is an essential part of any major attack.

FORMS OF OFFENSIVE ACTION

444. Attack maneuvers are classified as *envelopments* and *penetrations.*

445. In an envelopment, the main attack is directed against the flank or rear of the initial disposition of

the enemys' main forces and toward an objective in rear of his front lines. It seeks to surround that portion of the enemys' forces in front of the objective. It is assisted usually by a secondary attack directed against the enemys' front.

A successful envelopment depends largely on the degree of surprise attained and on the ability of the secondary attack to contain the bulk of the enemy's forces. Surprise is secured by maneuvering to avoid observation by the enemy and by deceiving him. Superior mobility increases the prospect of success.

An envelopment avoids attacking on ground chosen by the enemy, and forces him to fight in two or more directions to meet the converging efforts of the attack. Every effort is made to strike the defenders' flank or rear in order to avoid any part of his organized front. Such an attack minimizes losses, handicaps the defender's ability to meet it promptly, compels the defender to fight on ground chosen by the attacker, and produces decisive results.

446. A *turning movement* is an enveloping maneuver which passes around the enemy's main forces to strike at some vital point deep in the hostile rear. The force making the maneuver usually operates so far from the secondary attack that the principal tactical groupings are beyond mutual supporting distance (the distance by which forces may be separated and yet permit one to move to the aid of another before it can be defeated by an enemy force); hence, each grouping must be strong enough or mobile enough to avoid defeat in detail. When conditions favor such action, all combat elements of the command may be employed in the turning force, leaving only reconnaissance elements confronting the hostile dispositions. The turning movement is adapted particularly to highly mobile commands, such as cavalry, armored and motorized forces, and forces transported by aircraft. It is invariably employed by highly mobile

forces in situations in which the vital objective in the hostile rear can be seized by such a maneuver before it is necessary to involve the enveloping force in a major engagement with the enemy. Deception, secrecy, and mobility are vital to successful execution of a turning movement.

447. When the enemy takes up a defensive position, the commander of the attacking forces should consider the possibility of turning the enemy out of his position and forcing him to withdraw and fight on ground more favorable to the attacker.

Situations may occur, especially in the pursuit of a defeated force, in which the enemy can be forced by direct attack to take up a defensive position while a portion of the more mobile attacking forces executes a turning movement against his lines of communication.

448. A *double envelopment* is executed by three principal tactical groups, two enveloping attack forces and a secondary attack force. A simultaneous envelopment of both flanks generally requires considerable superiority.

The command seeking to attack by double development must be deployed or capable of deploying on a broad front against an enemy on a much narrower front or with little capability or room for maneuver. The maneuver is executed by fighting a holding battle with the center while enveloping forces strike on both hostile flanks. When mobile forces are available in reserve, they may complete the envelopment by an attack from the rear. When conditions favor it, this form of maneuver should be used because of the decisive results it promises. After an initial envelopment of one flank, favorable conditions for passing to a double envelopment through the use of reserves may be created when the success of our troops has placed the enemy in a disadvantageous situation.

449. The enemy's preparations to meet an envelopment of his flank ordinarily cannot be organized as completely as the defense of his front without sacrificing the strength of his original front, especially if the envelopment is launched from a locality deep on the hostile flank or rear.

The defender strengthens an unsupported flank by reserves echeloned in depth and in width. When threatened with envelopment he moves them to meet the maneuver, if necessary reconstituting reserves from those portions of his front not heavily attacked. He may attempt to envelop the attacking forces, or to extend his flank beyond that of the attack up to the limit of his strength. An attempt on the part of the attacker to meet such hostile extension may lead to overextension or to a dangerous separation of the enveloping forces from those making the secondary attack. It usually is better to take advantage of the enemy's extension and consequent weakness by retaining a deep formation and to penetrate his thinly held front than to overextend in an effort further to outflank the position. When the enemy extends his position beyond the enveloping forces, particular attention must be paid to protecting the exterior flank by the use of the general reserves of the higher commander.

450. When the situation does not favor an envelopment, the main attack is directed to penetrate the hostile front. *Conditions which demand a penetration* are enemy's flanks unassailable or lack of time to make an enveloping maneuver. *Conditions which favor a penetration* are overextension of the enemy or terrain and observation favorable for more effective cooperation of the combined arms. Such an attack often can be organized more quickly than can an envelopment.

451. In a *penetration* the main attack passes through some portion of the area occupied by the enemy's main forces and is directed on an objective in his rear.

It is characterized by the complete rupture of the enemy's dispositions; the seizure of the objective by operations through the gap; and the envelopment of one or both flanks created by the break-through.

The essential conditions for success are surprise, sufficient fire power, especially artillery, to neutralize the area of penetration, favorable terrain within the hostile position for the advance of the attacking troops, and strength to carry the attack through to its objective.

452. In the penetration of a defensive position, the main attack is launched on a front wider than that of the contemplated break-through in order to hold the enemy in place on the flanks of the penetration. The attack on the remainder of the hostile front is designed to contain the enemy and prevent him from moving his reserves.

The amount of artillery, mechanized units, and combat aviation available largely determines the width of the front of penetration. The wider the front of penetration, the deeper it can be driven and the more difficult it will be for the enemy to close the gap. The deeper the penetration, the more effective will be the action of mobile reserves in seizing the objective and rolling up the hostile flanks.

The greatest distribution in depth is placed opposite the prospective front of penetration. The distribution of troops provides for *three separate impulses:* a break through the hostile position, a widening of the gap thus created by enveloping one or both interior hostile flanks, and the seizure of the objective and exploitation of the success.

The sequence of these impulses depends on the situation. In some situations it is practicable through the existence of weaknesses or gaps in the enemy's front for mobile troops (armored, motorized, or cavalry divisions) to break through and to proceed straight to the objective, while operations of local envelopment

and exploitation are performed by less mobile troops. In other situations foot troops must break through, the more mobile troops being held initially in reserve and used later to operate through the gap created by the foot troops.

453. The mission of the attacking echelon of troops is to break through the enemy's dispositions to a depth which will prevent the maintenance of the continuity of his battle position. Until this mission has been accomplished, the attacking troops do not divert their strength to the attack of the flanks of the gap. Hostile counterattacks against the flanks of the penetration are met by reserves, by the fire of the artillery, and by combat aviation.

The missions of rolling up the flanks of a gap created by penetration and of exploiting the breakthrough are assigned to reserves. Cavalry, armored, and motorized units are especially suitable for seizing the objective and for exploitation. Combat aviation is employed against hostile reserves and other important objectives to prevent reinforcement of the area under attack. Troops transported by air may be used to support these operations.

454. In large commands, a penetration often is initiated by launching simultaneously two or more powerful attacks (a multiple penetration) against weak localities on the hostile front. Strong localities are contained initially by secondary attacks. When the penetrating attacks have advanced sufficiently far, the interior strong localities are reduced by maneuver, and the penetrating attacks are united into a single main attack. The pinching out of strong hostile localities often is facilitated by launching multiple penetrations in converging directions. The doctrines applicable to a single penetration govern the organization and conduct of a multiple penetration.

455. Whether the maneuver adopted is an envelopment or a penetration, success will depend primarily on intelligent, energetic, and coordinated execution. This execution must be based on a sound plan which is influenced largely by the objective and direction of the main attack.

The doctrines which underlie the employment of the combined arms in the offensive are conservation of the combat power of troops in the attack echelon, provision of assistance for them to close with the enemy, and thereafter support of their attack until the enemy's power of resistance is broken.

FRONTAGES AND DEPTHS

456. The *frontage* assigned to any unit in an attack varies with the mobility, type of armament, mission, and combat power of the unit, the terrain, the amount of fire support available, and the probable hostile resistance. As a general guide, an infantry battalion at full strength in a main attack seldom is assigned a frontage less than 500 yards or more than 1,000 yards measured on the front of the hostile position. In the development or in a secondary attack, frontages up to 2,000 yards may be assigned.

457. Units are distributed in *depth* to provide flexibility of maneuver, continuity in the attack, and security. For infantry units, depth of formation for combat rather than a wide extension of front is necessary in the initial deployment since the progress of battle will call for maneuvers that cannot be clearly foreseen. This condition can be met only by initial distribution in depth.

Laterally the distribution of troops in attack is governed principally by the scheme of maneuver. It is influenced also by the relative advantages offered by different sections of the terrain. When the situation requires an unusually wide extension of the command,

the increase is effected by widening the gaps between units.

RESERVES

458. The initial strength and location of the *reserve* will vary with its contemplated missions, the type of maneuver, possible hostile reaction, and clarity of the situation. After the attack is launched the reserve and the fires of supporting arms are the principal means available to the commander for shaping the course of action and for enforcing a favorable decision.

The primary mission of the reserve is to enter the action offensively at the proper place and moment to clinch the victory. Hence its initial strength and location are controlled largely by the maneuver to be executed.

459. In a penetration the reserve must be large enough to exploit the break-through by enveloping one or both of the flanks created and by operating deep in the hostile rear.

460. In an envelopment the reserve must be large enough to extend the envelopment or to exploit a successful enveloping action by operating against the hostile rear. To favor the envelopment the reserve is disposed toward the flank enveloped.

461. When open flanks exist or when there is danger of a hostile threat, some reserves are disposed to meet dangerous contingencies. This situation will frequently be met by echelonment of these reserves to provide depth in at least two threatened directions.

462. When the situation is relatively clear and enemy capabilities are limited, the reserve may consist of a small fraction of the command disposed to favor the maneuver. When the situation is obscure, the reserve

may consist initially of the bulk of the command, centrally located and prepared to move to any point on the front or flanks.

463. The location of the reserve should combine a maximum of protection for itself against hostile observation and air and mechanized attack with a road net which facilitates rapid movement to any point of possible employment. Motor vehicles should be held available for the movement of reserves lacking organic means of rapid movement.

464. Choosing the proper time at which the reserve should be used is often the commander's most difficult and most important decision.

Nevertheless, at the decisive moment of action every man that can be used to advantage must participate in the battle and the reserve must be launched without hesitation. As far as practicable the reserve is sent by complete units. Reinforcement by driblets is avoided. Commanders endeavor to reconstitute reserves from troops which the course of the action has made available.

COORDINATION

465. The commander is responsible for coordination of the action of all elements of his command.

466. In all cases the highest degree of coordination permitted by the situation and time element is sought. The considerations discussed below are applicable in general to situations in which thorough coordination can be prescribed. In other situations they are applied to the degree practicable.

467. Against a strong enemy, a decision to develop and deploy for attack directly from march columns risks loss of control and sacrifices some of the capabili-

ties of artillery, tanks, and other supporting weapons. An attack in a moving situation may be best organized and coordinated in assembly positions.

468. From a march formation the commander develops the main body for a coordinated attack by assigning march objectives to the larger units, usually the assembly positions they are to occupy, and routes or zones of advance thereto. The development order announces the missions of units already engaged, the missions of the artillery, the dispositions of the main body, the security measures to be taken, and instructions for further reconnaissance. It provides for essential administrative details so that the necessary preparations can be made. Instructions given in the development order are as complete as possible so that the attack order may be brief. For movement to assembly positions and security during development, see paragraphs 356–361, and 428.

469. The location of assembly positions is dependent on several factors. Darkness, cover from observed hostile artillery fire, a thorough knowledge of the situation, and a plan of attack already decided favor advanced positions located in conformity with the plan of maneuver. Conditions the reverse of these require the selection of assembly positions well back.

Units of high mobility such as tanks, cavalry, and armored forces may complete their development and preparations for battle at greater distances from the hostile front.

If the plan of attack involves an enveloping maneuver, the assembly position of the enveloping force is set off at a sufficient interval from the troops in the secondary attack to preclude interference between units when deployed for attack.

470. Subordinate commanders assigned assembly positions may in turn assign more advanced assembly

positions to the component units of their commands as knowledge of the situation and of plans becomes available. The final assembly position of an infantry battalion in the attack echelon usually is in the most forward concealed position available in rear of the line of departure. It should afford cover from hostile small-arms fire.

471. While units are moving into and during the occupation of their assembly positions, the commander prepares his orders and completes arrangements for the execution of his plan of maneuver.

Commanders of troops in the attack echelon and the commanders of units designated to support them coordinate the action of their units. Wherever possible, reconnaissance and planning should be conducted concurrently with troop movement into such positions to insure against unnecessary delay.

472. As each unit arrives in its assembly position, measures are taken immediately for clearing the roads and for security against air, mechanized, or other attack. Signal communication is established without delay between the superior command post and the major subordinate units. Equipment not essential to combat is disposed of, extra ammunition is issued to troops, reconnaissances are completed, coordination of the plans of maneuver and plans of fire of subordinate units is completed, and attack orders are issued promptly.

473. Development of the command terminates with the troops distributed in accordance with the plan for their employment, and in an approach march formation favoring rapid deployment.

474. Should the commander decide that rapidity of action is essential to retain a tactical advantage, he may dispense with assembly positions, decentralize

operations to combat teams or task forces, and issue orders to those units to develop and attack.

475. Subordinate units to be deployed for attack ordinarily are assigned a zone of action, a line of departure, and a direction of attack or an objective. Zones of action regulate the limits for battle reconnaissance and combat of the unit. It is not necessary that troop formations extend across the entire zone of action of a unit, as part of the zone of action can often be covered by fire, by small patrols, or by both. A preponderance of force on any particular part of the front is obtained by varying the width of the zones of action of subordinate units.

Zones of action are defined by designating their lateral boundaries or by the assignment of a front of deployment and the designation of the lateral limits of the objective. An open flank ordinarily is not bounded. In some situations, the designation of the objective is sufficient to indicate the zone of action. In large units the designation of objectives and boundaries may be made from the map; in small units these designations are made on the ground. *Points designated should be easily identified on the ground.*

Zones of action should extend through the depth of the hostile position at least as far as the location of the hostile artillery and reserves, more deeply if the situation is definite. Important localities and terrain corridors commensurate with the size of a tactical unit should lie wholly within the zone of action of that unit. If it is desired that an adjacent unit render special assistance to another in the attack, this assistance should be clearly stated. During the progress of combat and especially when reserves are committed to action, appropriate changes in zones of action are made.

To take advantage of favorable routes of approach, units may move temporarily into adjacent zones. Such movement must not interfere with the action of

adjacent units or result in a dangerous massing of troops. The emplacement and movement of artillery and other supporting weapons in zones of action adjacent to the zone of the units they support are permissible, but must be carefully coordinated. (See par. 519.)

The battalion is ordinarily the smallest unit which is assigned a zone of action. Smaller units are usually assigned directions and objectives.

When lateral boundaries are not clearly defined they are supplemented by assigning compass directions of attack. This is particularly important in small units.

When tactical groupings are separated initially by wide intervals and the direction of their subsequent maneuvers cannot be foreseen, designation of a boundary between them may be withheld until a later phase of the action. In such situations it frequently will be necessary to establish a limiting line between them for coordination and control of their supporting fires.

476. A *line of departure* usually is designated from which the attacking troops are launched at the prescribed hour or separate lines of departure, and hours are assigned to the several attacking units. The purpose of the line of departure is to coordinate the advance of the attack echelon so that its elements will strike the enemy in the order and at the time desired. This line should be recognized easily on the ground and should be approximately perpendicular to the direction of attack.

477. The *time of attack* is the hour at which the attack is to be launched. If a line of departure is prescribed, it is the hour at which the line is to be crossed by the leading elements of the attack. It is determined by the time required for commanders to make the necessary reconnaissance, prepare plans, and issue orders; for the cooperating arms to coordinate their

plans; and for the attack echelon to organize its attack and move to position.

The secondary attack may be launched prior to the main attack to force the enemy to commit the greatest possible portion of his forces against that attack, or the main and secondary attacks may be launched simultaneously.

Unity of effort is promoted by assigning subordinate units objectives which insure mutual support and by prescribing where and in what direction subordinate units are to make their main effort. The combat action and direction of attack taken by subordinate commanders must be such as to build up the main effort in accordance with the scheme of maneuver of the superior commander.

The commander must endeavor constantly to prevent the attack from breaking up into a series of uncoordinated combats.

478. The *degree of surprise* attained is dependent in a large measure on the coordination and timing of the measures taken to deceive the enemy. Ruses, demonstrations, feints, and other measures for deception executed at the wrong time and place will be obvious to an alert enemy and will warn him of the impending attack. Superior mobility and speed of execution may be determining factors in achieving surprise.

479. The best guarantee for success in the attack is effective cooperation between the troops in the attack echelon, the supporting artillery, and combat aviation. The superior commander coordinates the fire support of his artillery with the plan of maneuver of the attacking troops.

The ground and air commanders must plan the attack jointly. The efforts of ground and air units must be coordinated closely to insure success of the theater commander's scheme of maneuver.

480. To assure close cooperaton with the attacking troops, *artillery units* assigned to direct support of designated units maintain constant connection with supported units through common command posts or by liaison agents. Ordinarily an artillery battalion is placed in direct support of an infantry regiment or a cavalry brigade. Cooperation is facilitated by habitually associating the same units on the march and in combat.

481. The command post of the division artillery is at or in the proximity of the division command post. The same rule applies in the case of the senior artillery commander of a smaller force of combined arms.

Initially both the command post of the artillery and of the supported unit are located together. Locating command posts together is a responsibilty of both commanders. If separation of command posts becomes necessary during the course of action, the artillery commander establishes liaison and maintains signal communication with the commander of the supported unit.

482. The commander of the supported unit informs the supporting artillery commander of the situation, his plan of attack, and the artillery support desired. The supporting artillery commander informs the supported commander of the terrain features essential for artillery observation and those that must be seized during the advance to obtain essential observation, the terrain which the artillery commands with observation and fire, and the means by which the artillery can most effectively support the attack. (See par. 509.)

Based on this exchange of information, the associated commanders arrange the plan of fire support to be given by the artillery during the attack.

The artillery commander must comply with the requests of the supported unit commander to the limit of his capabilities, subject only to orders received

from higher authority. If he receives a fire mission which conflicts with the needs of the supported troops, he reports the situation to the commander ordering the mission and then complies with the resulting decision. If the urgency of the situation precludes this report, the artillery commander acts on his own initiative in accordance with his knowledge of the situation, reporting his action to his superior at the first opportunity.

A liaison section is assigned to each supported infantry battalion or cavalry regiment. A mutual obligation rests upon the commanders of supported and supporting units that liaison once established is maintained. It is essential that the supporting artillery know at all times the location of the leading elements of the attack echelon and be kept informed of the plans of the supported unit.

483. The fire of other supporting weapons is coordinated with that of the artillery. The fire of these weapons supplements the artillery fire of direct support chiefly by engaging targets in the immediate foreground whose neutralization by artillery might endanger the attack echelon, and targets within range on which artillery fire cannot be placed.

484. Early and adequate joint planning is necessary in order to obtain close coordination of the ground force elements and combat aviation which are employed in the attack. The first objective of this combat aviation is those hostile elements, the destruction or neutralization of which will contribute most toward a successful attack. During battle, combat aviation is especially useful as a means, immediately available through the air force commander, to exploit a success, to correct an adverse ground situation, to attack hostile reserves or reinforcements, or to aid friendly ground troops in overcoming unexpected resistance.

485. For cooperation between the air and ground command concerning air operations on or about the battle area, see FM 31–35 and 100–20.

486. An integration of the attack into a unified whole requires complete coordination and cooperation, prior to and during the operation, between supporting tanks, artillery, and combat aviation. (See chs. 2 and 16.)

487. Because of the difficulty of establishing and maintaining effective chemical concentrations in mobile operations, use by the attacker of chemical agents other than smoke is limited. Smoke must be carefully employed in respect to both time and space and must be closely coordinated with other supporting fires and with the action of tanks and supporting aviation. Under favorable conditions of wind and weather, smoke is used to conceal the approach of the attack by blinding hostile observation posts, antitank guns, and infantry supporting weapons. It is especially useful during short periods when troops must cross exposed ground.

488. As soon as the commander has made his decision, he completes his plan of attack and issues his *attack order,* wherein he prescribes the necessary coordination for the action. (See FM 101–5.)

489. When conditions limit the ability of the commander to exercise a timely and direct influence on the action, the initiative of subordinates must be relied upon to a great extent. The commander issues less detailed orders to those tactical groupings over whose action he can not exercise a direct influence, and attaches to them the means necessary to accomplish their tasks. He remains with and personally directs the action of the troops whose mission is of decisive importance to the action. This method of

conducting an operation is most prevalent in pursuits, in opening phases of a meeting engagement, during crises of battle, and in envelopments in which the main and secondary attacks are separated by wide intervals. The greatest degree of coordination possible is prescribed initially; complete coordination is accomplished as soon as the course of action permits. (See par. 128.)

490. Coordination is assured by command and staff visits to subordinates to see that orders are understood and are being carried out.

Section II. ATTACK IN WAR OF MOVEMENT

491. A *meeting engagement* is a collision between two opposing forces en route. A tactical situation which develops on first contact may have a strong influence on the course of the subsequent action. A great advantage, therefore, accrues to the force which first completes effective preparations for combat. Action cannot be delayed awaiting the result of detailed reconnaissances. Prompt estimate of the situation, quick decision, and prompt action are essential for success.

492. As soon as the prospect of contact becomes apparent, the superior commander initiates plans for the operation and disposes his command to facilitate rapid entry into action. (See par. 1040 for missions of armored units.) Information gained by the reconnaissance agencies during the advance affords a basis for the commander's preliminary disposition, and may enable him to determine the general line of engagement and the plan of attack.

As a rule, however, the enemy's intentions will remain obscure and seldom will be clarified until after the initial engagement. When timely information is lacking, subordinate commanders are relied upon to exercise their initiative and make important decisions

in accordance with the general mission and known intentions of the superior commander. Without delay, the latter coordinates the action which his subordinates have begun. To insure prompt and correct decisions, adequate and quick coordination, and proper employment of units, commanders of all echelons must be well forward when the enemy is engaged.

493. Early and rapid transmission of orders is essential to an orderly and timely employment of the command and may be vital, particularly for columns of high mobility. Initial orders are ordinarily issued in fragmentary form, their sequence of issue being based upon the priority of, and time required for, execution. To facilitate prompt communication, one (or more) advance message center or command post is established.

494. Employment of the *advance guard* is the commander's first problem and is the basis for the subsequent employment of the remainder of his force. When contact is imminent or when the zone of effective artillery fire is entered, the advance guard moves forward on a broad front. Upon encountering resistance the advance guard must seize terrain affording good observation for the artillery and other supporting weapons. Its principal function is to gain time and space for the development and use of the main body.

These missions require aggressive action against the enemy's leading troops. However, unfavorable terrain or superior hostile forces may necessitate or make advisable a temporary defense or even a limited retirement to preserve freedom of action. Whatever the situation, all advance guard actions are characterized by speed and aggressiveness, by broad fronts, and by small or no reserves.

495. The advance guard performs its mission most effectively when, after possessing itself of essential ter-

rain features, it is disposed to protect the development of the main body. Artillery deploys on a broad front, opens long range fire on enemy columns to force their early deployment, and interdicts the principal routes of approach.

The advance guard is strongly reinforced by artillery from the main body. It is reinforced by other elements of the main body only when the situation clearly demands it.

496. *Cavalry* after withdrawing from the front of advance-guard infantry may be employed on the flanks to screen our own dispositions, to execute further reconnaissance or harassing action against the hostile flanks and rear, or may be held in reserve.

497. The speed of modern offensive operations demands that supporting artillery be prepared to react immediately with fire when opportune targets are presented. To do this, observation and gun positions must be as far forward as possible.

Early entry into action of the bulk of the artillery is essential to protect the development, to give support and cohesion to the advance-guard action, and to gain an early superiority over the hostile batteries.

It may be necessary for a portion of the artillery to occupy temporary firing positions to insure that troops do not come under fire without artillery protection.

498. The artillery preferably is deployed initially to protect the development and support the attack from the same position areas. When initial positions are too distant, the artillery in direct support must displace forward to assure close support of the attack echelon.

499. In accordance with his estimate of the situation, the commander develops the main body and organizes a coordinated attack; strikes directly from march

columns with part of his command while organizing a more coordinated blow with the remainder; or attacks with his whole force from march columns as units become available, the latter an uncoordinated piecemeal commitment. (See pars. 467–469 and 489.)

500. While the main body is developing for its attack, units in contact with the enemy execute a concurrent phase of the maneuver, the *development of the enemy position*. Their mission is to determine the strength and dispositions of the enemy, the location of his flanks, artillery, and local reserves, in order to provide a picture of the enemy's situation upon which the commander can base a workable attack plan. This mission should be accomplished early to avoid loss of time in launching an attack because of faulty or inadequate intelligence.

The commander of each attack unit directs its advance in the assigned zone of action to cross the line of departure at the prescribed hour. Each attack unit reconnoiters its zone of action and supports the reconnaissance elements with its supporting weapons. To keep troops in hand prior to contact, a base unit is usually designated on which other units regulate their advance from one terrain line to the next. Terrain features which afford extended observation, or which are otherwise of tactical importance, are the objectives of each bound.

501. Regardless of whether the attack is launched from assembly positions or directly from march columns, the method of approach to the hostile position is the same. Each battalion of the attack echelon moves to the most advanced position in which it can make its final preparations under cover from small-arms fire.

502. Whether an offensive battle is the result of a meeting engagement or is based on the attack of an

organized position, the *conduct of the attack* from the time the enemy is engaged until he is defeated is essentially the same. What difference there is exists in the coordination, power, and speed developed in the opening phases. (See pars. 516–553.)

Section III. ATTACK OF AN ORGANIZED POSITION

PRELIMINARY OPERATIONS

503. Ordinarily the defender will attempt to screen his main position and deceive the attacker regarding his dispositions by the employment of covering forces. A thorough reconnaissance of the hostile position and its foreground is of primary importance. This reconnaissance seeks to determine the location, depth, and extension of the hostile position, the hostile occupation of the position, contaminated areas, the location of the hostile artillery, and natural and artificial tank obstacles. It involves a thorough study of the map and air photographs of the enemy's combat zone, and the use of available air and ground reconnaissance agencies.

504. If reconnaissance and advance detachments fail to establish definitely the hostile main position, the leading troops are reinforced strongly by artillery and other supporting troops. The reinforced leading troops execute a *reconnaissance in force* against critical points in the enemy's outpost zone to drive in the enemy's covering forces and determine the hostile main position. Their mission is to seize the terrain which will permit the proper deployment of the command and permit observation of the hostile battle position.

When the leading troops finally encounter a well-organized system of defensive fires of hostile artillery and other supporting weapons it may be taken as a

reliable indication that the hostile battle position has been reached. The leading troops establish themselves on the critical points and cover the movement of the artillery to positions to support the attack.

505. During these preliminary operations, cavalry and other troops seek to locate the flanks of the hostile position. The leading elements are protected from hostile counterattack by strong supporting fires and by the presence of other units moved to concealed positions within supporting distance. The remainder of the command is held in readiness beyond the range of effective hostile artillery fire. Necessary measures are taken to protect it against air attack and attack by mechanized units.

506. Reconnaissance is continued to obtain information as a basis for the conduct of the attack. This reconnaissance provides more detailed information for the assignment of objectives and as a basis for the plan of fire of the artillery and the other supporting weapons.

Reconnaissance of the terrain must determine the most favorable routes of approach to the hostile position, the nature and strength of obstacles, location and extent of mine fields, and the possibilities for employment of mechanized units.

Air photographs of the hostile main position are distributed to subordinate commanders.

The terrain over which the attack must pass is studied on the ground and from air photographs to determine the areas which the defender has organized for defense and can cover with defensive fires, and the areas in which the attacker can advance best by flanking fire and maneuver.

Artillery conducts reconnaissance to determine the possibilities of artillery observation and fire, and the location of its firing positions and the routes of approach thereto.

507. *Determination of the weak points* in the enemy dispositions is of vital importance. By fire of artillery and other supporting weapons delivered from different directions, and by feints and raids, effort is made to ascertain the enemy's dispositions and his plan of defensive fires. Against an aggressive enemy a series of attacks may have to be launched before a weak spot is located.

PREPARATIONS FOR ATTACK

508. Based on the estimate of the situation, the main attack is made either as an envelopment or a penetration. A carefully coordinated attack is required. Orders are issued for the preparations for the attack and for the measures for secrecy and deception to be adopted.

Preparations for the attack include the completion of the signal communication system, organization of the command for combat, provision for ammunition supply, and the regulation and coordination of supporting fires of all arms. During this period, combat aviation is employed to gain and maintain air superiority and to prevent the movement of reserves and supplies into the area.

Special consideration is given during the preparation to measures designed to insure the continuity of the attack. Adequate provision is made for placing in readiness the necessary material and engineer units to clear paths through mine fields and other obstacles, to assist the advance of tanks and heavy weapons, and for the construction of roads connecting our own system with that of the enemy.

All preparations for the attack are completed as far as practicable before the occupation of final assembly positions. Preparatory measures likely to betray the imminence of the attack are carried out secretly or are deferred as long as possible.

Restrictions are imposed on those activities within our front lines and in rear areas which may disclose, to hostile reconnaissance, operations for the attack. Strict surveillance is imposed on the use of radio communication.

509. The plan of attack consists of the *plan of maneuver* and *plan of fire.* The attack unit, artillery, and other supporting unit commanders make detailed arrangements for coordinating the action of their units to carry out the common mission. (See pars. 480–482.)

In coordinating their plans, it is essential that the supported and supporting commanders carefully study the terrain in which hostile resistance may be encountered and identify the successive intermediate objectives of the attack.

An agreement is reached relative to the known targets to be engaged by the artillery and other supporting weapons. Areas to be kept under surveillance for targets appearing after the attack is launched, especially those targets in adjacent zones which are dangerous to the advance, are agreed upon. Associated commanders must arrange for mutual reinforcement of fire. If targets along the line of contact are to be engaged every effort must be made to prearrange the details of attack and provide means of identification.

510. Attack unit commanders must receive early information of their assembly positions and zones of action in order that they may make their own reconnaissances and formulate plans.

Attack units usually move at night into final assembly positions, preparatory to an attack the next morning. Movement of units into their assembly positions by day generally is practicable only when visibility is poor or when overwhelming artillery and combat aviation are available.

When tanks are employed, their assembly positions

and routes of approach are reconnoitered, marked, and prepared.

511. The first *mission of the artillery* is to protect the movement into and the assembly positions of attack units. During this phase, hostile artillery and observation posts constitute its principle targets. Registration fires should be so conducted as not to disclose the impending attack. The artillery gives special consideration to those measures which will attain surprise in the opening of effective fire, gain fire superiority over the hostile artillery, and concentrate the mass of its fire on the decisive objectives.

512. *Artillery positions* are selected so that fire can be concentrated on the objectives of the attack. Defilade, concealment from air reconnaissance, and proximity to observation are sought. Sufficient time must be allowed for the preparation of firing data, establishment of signal communication, and organization of the artillery ammunition supply.

Artillery usually moves into position by echelon. The movement is frequently wholly or partly executed at night. Units assigned to positions screened from hostile air reconnaissance are moved first. The movement of artillery is regulated to avoid interfering with the attack echelon in its occupation of final assembly positions. Long-range artillery is placed well forward to be able to take under fire the most distant echelons of the defender's light and medium artillery.

513. During the advance of the attack echelon from assembly positions, the hostile artillery constitutes the principal target of our artillery fire. Superiority over the hostile artillery is indispensable for the success of the attack. It rarely can be attained after the attack is launched.

Located hostile batteries are silenced early in the artillery action. Their neutralization is maintained by

a portion of the artillery in order that the mass may be employed on other missions, until again required for counterbattery fire as new hostile batteries are located. If counterbattery fire is unable to gain superiority over the hostile artillery, neutralization of the hostile observation just prior to the attack is of great importance.

514. Artillery fires prior to the hour of attack may be limited to normal fires already in progress or the attack may be preceded by an artillery preparation.

The duration of the preparation varies with the situation. A prolonged preparation is destructive of surprise and gives the enemy time to take countermeasures. The length of the preparation is influenced also by the extent to which tanks are to participate in the attack and the role assigned to them. The duration of the artillery preparation may vary from 15 minutes to several hours.

The nature of the artillery preparation depends upon its mission. Concentration of effect is greatly favored by dividing the preparation into phases.

The object of the first phase of the preparation is to neutralize the defender's artillery, destroy the most important hostile agencies of command and fire control, isolate the defender's forces from the rear, disrupt assembled hostile mechanized forces, and protect our troops from the enemy's counterpreparation fires. Artillery fire of the first phase comprises counterbattery fire; destruction fire on command posts, observation posts, and signal communication installations; interdiction and destruction fire on enemy routes of communication; destruction fire on mine fields and hostile obstacles; and concentrations on the hostile defense areas and assembled mechanized units.

In the subsequent phase of the preparation, sufficient artillery continues counterbattery fire to maintain neutralization of the hostile artillery. The fire of the

mass of the remaining artillery is concentrated on the hostile defense areas.

515. During the preparation, supporting weapons fire on sensitive points in the zone of resistance. Massed air action on the immediate front selected for the main attack may be used to soften resistance. Combat aviation is concentrated against signal communication centers and reserves, with particular attention to artillery and mechanized units which cannot be covered effectively by artillery.

CONDUCT OF THE ATTACK

516. The *attack* is characterized by the positive action of fire and maneuver, combined and controlled to create a preponderance of force in the decisive direction.

517. The attacking echelon advances from its final assembly positions so as to cross the line of departure at the prescribed time. Any mass formation of units runs grave risks of incurring heavy losses from hostile counterpreparation fires and air attack. The leading echelon is therefore thin initially; its fire power is gradually built up as the enemy discloses his plan of defense.

When *fire superiority* has been gained, the leading echelon closes to assaulting distance.

518. Superiority of fire rests chiefly upon the mutual support of units in the attacking echelon, and the coordination of their action with the support of artillery, combat aviation, and supporting tanks. It depends not only on volume of fire but also on its direction and accuracy.

Fire effect is increased by enfilade action. Flanking or oblique fire is especially effective when frontal fire is delivered simultaneously against the same objective.

A convergent fire forces the enemy to defend himself against attack from several directions and creates a powerful moral as well as material effect.

Units seek to gain flanking fire by enveloping action. Flanking fire is also secured through the lateral echelonment of supporting weapons with respect to the units they support. Heavy machine guns, from positions in adjacent zones of action, deliver oblique fire over the troops in their front and protect the flanks of troops in the attack echelon. Light machine guns of rifle units follow the leading elements closely in order to take advantage of and deliver flanking fire through the gaps along the front. Units which have succeeded in gaining advanced positions deliver flanking fire across the front of adjacent rearward units.

Lateral echelonment of artillery for purpose of flanking fire increases the difficulties of fire control and of liaison between the artillery and supported units. The fire of supporting artillery is more reliable and effective when its positions and observation posts are in the zone of action of the supported unit.

519. The attacking echelon advances to assaulting distance of the hostile position under its own and supporting fires. Until the main hostile resistance is broken, attack units advance by bounds to successive terrain lines on each of which the fire support for the next bound is organized. Fire and maneuver are alternated in such manner that an attack unit, whose advance is made possible by the combined fire of adjacent and supporting units, moves forward to an advanced position and by its fire from that position assists the advance of the adjacent units.

520. Troops transported by air may be employed to seize, hold, or destroy objectives which contribute directly to the success of the main attack.

521. Artillery and other supporting weapons insure

continuity of support by displacing forward in groups (by echelon), while the bulk remains in position and maintains fire. Fire is lifted successively to more distant targets as the attacking eschelon becomes endangered by it. When supporting artillery, mortar, and heavy machine-gun fires are lifted from the hostile position to permit the attacking echelon to close with the enemy, the loss of this support must be compensated for by the increased fire of the lighter weapons and by the cooperative action of tanks. (See ch. 16.)

522. Artillery supports the attack through the depth of the hostile position by successive concentrations in accordance with the requests of the supported commanders. Concentrations of artillery fire are regulated to bring the greatest possible volume of fire on objectives of decisive importance at the critical moments of the attack. Attack units must follow closely the artillery fires in order to take immediate advantage of artillery fire effect to gain ground to the front. The artillery is prepared for early movement forward to maintain close support as the attack progresses. Essential fire missions of units being displaced are distributed to units in position.

Combat aviation can be used during this period to insure the momentum of the attack by prearranged missions against targets which cannot be engaged by artillery.

523. Artillery must employ all means at its disposal (observers, liaison sections, airplanes, wire and radio communication to attack units) to obtain exact information on the location of the hostile defensive position and location of the forward elements of the attack. The attacking units must cooperate by employing all means of transmitting information to the artillery (display of panels, pyrotechnics, and various other means of signal communication). When uncertain as to the location of the attack echelon, direct support

artillery takes immediate steps to establish close contacts with those elements.

524. During the attack, the supporting fires are concentrated against the fronts where the attacking echelon is making the greatest progress. Artillery fires are supplemented by fires of other supporting weapons. The fire of these weapons is used to increase the density of the artillery fire or is placed on those areas and targets which can not be effectively engaged by the artillery. When the attack echelon arrives close to the hostile position, the fire of all artillery, including that in general support, is concentrated on rearward hostile defense areas.

525. The primary purpose of close supporting fire is to prevent the enemy from manning his defensive works in time to meet the assault. Its progression to successive objectives is arranged between supporting and supported commanders. It may be regulated by a time schedule based upon

a. A signal given by assaulting troops.

b. A probable rate of advance of the attacking troops.

c. A desirable duration of fire.

Other fire is placed on critical points in the hostile position to protect the attack echelon from hostile long-range and flanking fires and from counterattack. It is lifted to correspond with the advance of the attacking echelon.

526. Each attack unit uses the close supporting fires of its artillery and other supporting weapons to close with the enemy and to push on to its successive objectives without deviating from the prescribed general direction of attack.

527. It is desirable that combat aviation support the attack through the depth of the hostile position by

concentrated attacks on that part of the front where the attack seeks decisive results. (Coordination with combat aviation will be in accordance with FM 100–20 and 31–35.)

528. The attack must not permit its advance to be long arrested by hostile chemical concentrations. Contaminated terrain which cannot be avoided is posted and passed with the protection of gas masks.

529. Whether the main attack is based upon an envelopment or a penetration, the battle generally develops into local conflicts along two opposing fronts. During the course of battle, the combat action of units may undergo a change as between envelopment and penetration. A force that has successfully enveloped the enemy's flank may have to make a frontal attack to defeat a hostile reserve, or may find a favorable opportunity to attack the hostile resistance in flank. In a penetration, once minor resistances have been overrun, the outflanking action of small units is the most effective means of reducing the stronger hostile defense areas.

530. An attack seldom is executed exactly as planned. As long as the enemy has any freedom of action, unexpected difficulties are encountered which culminate in a crisis. The approach of this critical phase of the attack must be recognized by the commander so that timely measures can be taken to shape the course of action to secure a favorable outcome or to prevent a reverse. (See pars. 458–464.)

531. As the attack progresses, more control will of necessity have to be decentralized to subordinate commanders to permit them to meet the rapidly shifting situation. Means must be provided these commanders to permit execution of the mission assigned them.

Reconnaissance aviation must also continue to in-

form higher commanders concerning developments farther in rear of the battle front, such as shifting of hostile reserves, arrival of reinforcements, and train movements. From these reports and other information, commanders direct the movements of reserves toward those portions of the hostile front that offer the greatest prospects for decisive success, and to support the attacking troops in repulse of counterattacks. Combat aviation may be effectively employed to attack enemy reserves and counterattacking forces.

532. In an attack of a stabilized front, the approach has already been effected and the attack opens with a coordinated assault. The hour of the assault is fixed by the commander of the whole front from which the assault is to be launched. The exact day and hour are kept secret until the latest practicable moment.

533. On a stabilized front, the period during which the opposing forces have been in contact makes available more detailed information of the enemy's defensive dispositions. The completeness of information will depend upon the length of time the front has been stabilized and the efficiency of intelligence measures. Available information is augmented by continuous reconnaissance. Reconnaissance throughout preparation for the attack is conducted in such manner that the appearance of normal activity is maintained. Information is disseminated in the form of intelligence summaries, maps, and air photographs.

THE ASSAULT

534. Against a strong resistance and well-organized defense, the superior commander will prepare the assault by concentrating the firepower of all supporting weapons to neutralize the enemy and wear down his power of resistance before launching the assault. After the first onrush, a series of local assaults deliv-

ered by units of varying strength on their own initiative continues the action. Each unit delivers its assault at the earliest moment that promises success.

The commander of the unit will have arranged to deliver the assault on a time schedule, or will notify the supporting weapons, by a prearranged signal, that he is about to assault. The intensity of supporting fires is increased. Under cover of the supporting fire, the assault unit advances close to its objective. When the supporting fires are lifted from the objective, the assault unit overruns the hostile resistance in a single rush. Any delay in launching the assault after the fires lift allows the enemy to man his defenses.

CONTINUATION OF THE ATTACK

535. After the assault of an organized position, the attack often breaks up into a series of separate combats which are continued throughout the depth of the hostile position. These combats are directed by subordinate commanders within their zones of action and are supported by all the means at their disposal. The first task is to capture assigned objectives. Resistances are reduced by fire or are outflanked.

Reserves are disposed behind points where the greatest progress is being made, to protect the flanks of the leading units and support them in the repulse of counterattacks. All reconnaissance agencies search for probable assembly areas of hostile reserves, so that enemy preparation for counterattack may be broken up by artillery fire and air attack. If the attack is unable to make further progress, the captured terrain is promptly organized for all-around defense and held until the attack can be continued.

536. Road conditions, the possibility of maintaining ammunition supply, and the enemy's reaction following our successful assault determine when and in what

strength the artillery will be moved into advanced positions.

Artillery executes its missions with the fewest possible changes of position. Frequent changes of position reduce the volume of fire support. The occupation of new positions and renewal of fire require considerable time. Nevertheless, change of position should be made unhesitatingly when fire effect or deficiency in liaison with the attacking echelon requires it. Changes of position generally are effected by echelon after timely reconnaissance of advanced positions.

Artillery promptly fires upon enemy troop assemblies, troops forming for counterattack, and on any rearward position on which the enemy attempts to reconstitute his defense.

537. If the tide of battle turns against the enemy, he may endeavor to disengage his forces and renew the defense on a rearward position, or he may fight a delaying action until battle can be renewed under conditions more favorable to him. Ordinarily, the enemy will strive to hold out until nightfall and effect his withdrawal under cover of darkness.

Frequently the enemy will disclose his intentions to withdraw. Attacking troops must exercise great vigilance in observing the conduct of the enemy in their front, press their attack with energy and maintain close contact with him. Reconnaissance aviation searches the rear areas for indications of retrograde movements of artillery and trains.

538. If the enemy succeeds in withdrawing his major forces from action, the commander intensifies reconnaissance to obtain the necessary information upon which to decide what line of action to follow. Aggressive action may prevent the enemy from reconstituting his defense on a rearward position. If the enemy succeeds in occupying a new position during darkness,

a renewal of the attack in force must be delayed until daylight.

It may be of great advantage to regroup the attack forces during the advance to the new position and launch the main attack on another part of the front. Effort is made to exploit the moral ascendency by a quick and powerful blow before the enemy can reconstitute his defense. The action of tanks or armored units and combat aviation at this time may be decisive.

539. If the enemy is fighting a delaying action on an extended front, the objective ordinarily will be attained more quickly by concentrating on a decisive part of the front and attacking with energy and dispatch. An attack pushed deeply and energetically through the hostile front will force the enemy to an early evacuation of the whole front.

540. In case of a break-through, armored units penetrate deeply into the hostile position and attack the enemy's reserves, artillery, and command and signal communication centers. The gap is widened by attacking its flanks. Other mobile forces are sent through the gap to exploit the advantage gained and to attack the enemy in rear and prevent his escape. At this time the maximum efforts of combat aviation may be concentrated in cooperation with the ground forces exploiting the break-through.

541. When the attack does not reach its objective or does not break through the hostile position during the day, foot troops intrench themselves at the points reached. The night is utilized to extend the advance. Strong patrols with machine guns are sent forward to occupy advanced positions. The foot troops advance and intrench in a new position under the protection of these patrols. Several advances of this character may bring the troops within assaulting distance of

the hostile position. These night advances must be coordinated with the artillery and combat aviation.

RELIEFS TO CONTINUE THE ATTACK

542. In offensive combat, a relief may be necessary to continue the momentum of the attack with fresh troops; to change the direction of the attack, or to extend an envelopment; or to initiate a strong offensive on a front where stabilization has existed.

543. When a relief is necessary, warning orders are issued by each commander (higher commander, relieving unit, and unit to be relieved) to each of his subordinate units. Warning orders include: approximate hour the movement for the relief is to begin; zones in which relieving units are to operate; and the restrictions imposed upon reconnaissance parties as to size, routes, and hours of operation.

544. Personal reconnaissance by the commander and staff of the relieving unit and prior conference with the commander and staff of the relieved unit are highly desirable. When neither is possible, relieving units move forward to attack without delay, reconnoitering as they go. As they move forward, commanders make every effort to locate commanders of units to be relieved.

545. A plan is formulated and orders are issued covering the movement of relieving units. Fundamentally the operation is the same as the development of a command for combat. In the preparation of the plan, restrictions imposed by higher authority because of other traffic in the zone of advance to relief, the greater road spaces that may be required because of increased distances between units, the road net, and practicability of cross-country movement must be considered. The plan must be flexible as to times and

routes of movement. The size of the unit involved and the speed with which the relief must be conducted will govern the thoroughness with which the details of the plan are prepared.

546. In accordance with the plan of the higher commander, commanders and staffs of both the relieving and relieved units arrange and agree upon such details as guides, use of roads, fire support to be furnished by the relieved unit, security measures which will be provided for the incoming troops by the unit to be relieved, transfer of the existing signal communication system, administrative matters, and the time command passes to the relieving unit.

547. The principal task involved in a passage of lines is the preparation for continuing the attack. Therefore, the incoming commander must assume command of the zone of action before his troops reach their attack positions.

548. Units to be relieved furnish guides. Guides meet the relieving unit before it enters the area and conduct it to assembly positions. Whenever possible, guides are furnished for units down to and including the platoon.

549. The plans for executing the relief must be in harmony with the plans for continuing the attack.

When the relief is executed in darkness, troops relieved are withdrawn promptly from the zone of action before the attack is continued. Artillery of the relieved unit (and frequently other supporting weapons) may be held in position to support the attack.

When the relief is executed in daylight, troops relieved or passed through remain in position and continue the fire support of the new unit until their fires are masked and until the attack has progressed far

enough for the relieved troops to be assembled and reorganized without undue casualties.

550. If the exact location of forward elements to be relieved is known, and if relief is effected at night, the line of departure for the attack is the line held by the forward elements. When the exact location of the most advanced elements of unit to be relieved is unknown, the line of departure must not be forward of the line held by most advanced elements whose location is known. In daylight and terrain permitting, a line of departure between the forward elements to be relieved and a covered position close in their rear may be better than a line coinciding with the front-line elements.

551. To disclose the fact that a relief is in progress invites disaster—a heavy bombardment by air and artillery, a counterattack, or both—at a time when congestion and traffic circulation are doubled.

552. In reliefs on a scale large enough to require more than a single night, troops and transport of the relieving unit are concealed during periods of visibility. The relief is carried out by echelon. To prevent the discovery of the relief through the capture of prisoners by the enemy during an intervening day or night, front-line elements are relieved during the last night preceding the resumption of the attack.

Woods, fog, and defilade are utilized in the approach when the relief is made in daylight. Smoke is placed on hostile observation posts and hostile forward elements. Mobility, ruses, feints, and demonstrations are exploited.

553. During the course of the relief, artillery maintains its normal fires, but is prepared to execute counterbattery and protective fires along the front of the relief in the event of a counterpreparation or of attack

by the enemy. During a night relief, artillery fires may be so timed as to conceal noise of motor vehicles or tanks moving up into position.

Section IV. ATTACK FROM THE DEFENSIVE

PLANNED DEFENSIVE-OFFENSIVE

554. A commander with an offensive mission may decide to assume the defensive initially because of temporary combat inferiority or to create a situation which will place the enemy at a tactical disadvantage and offer opportunity for a decisive counteroffensive. In either case, an early adoption of the offensive to attain the objective is contemplated. By inducing the enemy to attack first, the commander hopes to fix and exhaust him and then, when he is disorganized, to launch the counteroffensive.

This type of action demands the highest type of leadership and tactical skill and troops with a high order of training. The major problem for the commander lies in timing the attack.

555. The selection, occupation, and organization of the defensive position conform to the general doctrines discussed in sections I and II, chapter 11, except that organization of the ground is not as complete as is required for a protracted defense and a larger proportion of the close-combat elements of the command are assembled concealed in a position favoring the execution of the contemplated counteroffensive.

556. Conduct of the defense conforms to the doctrine discussed in section II, chapter 11.

As soon as the purpose of the initial defense has been accomplished, the counteroffensive is launched. Thereafter, the conduct of the action is that of the attack.

557. A defending force frequently has an opportunity to adopt the offensive. When a general counterattack launched by the defender throws the attacker back following an apparently successful advance, or when a hostile attack breaks down, the enemy seldom will be able to withstand a determined counteroffensive. The enemy artillery fire still may be superior but his attacking echelon will be disorganized and signal communication in his forward area will be disrupted. If the defender seizes the initiative and passes to an offensive before the attacker can recover from his disorganization and can properly dispose his reserves, results often are decisive. The defense must be prepared to pass to the offensive and exploit the results of successful defensive action.

558. The general doctrines governing the preparation for and conduct of an attack are applicable to the counteroffensive.

Section V. PURSUIT

559. The pursuit is launched when the enemy is no longer able to maintain his position and endeavors to escape by retreat. A commander recognizes success by the continued advance of his troops in a decisive direction and the capture of critical objectives; by the number and morale of captured prisoners; by the number of abandoned weapons; by the numbers of hostile dead; by the diminution of hostile artillery fire; by the relaxation or cessation of hostile countermeasures; and from reports that the enemy is withdrawing.

560. When a commander recognizes that the enemy is having difficulty in maintaining his position, he utilizes all means to maintain the continuity of the

attack and to exert a relentless pressure on the defeated enemy.

Effective pursuit requires leadership and exercise of initiative to the highest degree in all echelons of command. All commanders in the attack echelon spur on their troops and clinch the advantage with their reserves. Pursuit of a defeated enemy is pushed to the utmost limit of endurance of troops, animals, and vehicles. Abandoned enemy matériel is promptly put into use to augment that of the pursuing force or to replace losses. No opportunity is given the enemy to reorganize his forces and reconstitute his defense.

561. The object of the pursuit is the annihilation of the hostile forces. This can seldom be accomplished by a straight pushing back of the hostile forces on their lines of communication. Direct pressure against the retreating forces must be combined with an enveloping or encircling maneuver to place troops across the enemy's lines of retreat. Encirclement of both flanks of the retreating forces or of their separate elements is attempted wherever conditions permit. Mechanized units are particularly suited for this purpose.

By the coordinated employment of every available agency of destruction and terrorization, the shaken morale of the defeated enemy is converted into panic. The incipient dissolution of his organization is transformed into rout.

562. In anticipation of the time for launching the pursuit, the commander causes preparatory measures to be taken. These measures include necessary plans and orders in all echelons. Reserves are regrouped and motorized. Artillery and other necessary units are attached to the direct pressure forces for the pursuit. Distant objectives are assigned to the principal tactical groupings. Missions are assigned to the artillery in general support to obstruct movement on hostile avenues of withdrawal. Combat aviation is employed

against those targets of opportunity and other objectives which will contribute most to the success of the pursuit.

563. The pursuit is conducted on a broad front. Motor transportation, including transportation captured from the enemy or abandoned by him, is employed to expedite the movement of foot troops. Troops before whom the enemy is giving way send in their reserves, to gain his flank and rear or to break through his covering troops.

564. The forces engaged in the direct pressure and in the encircling maneuvers are assigned directions, zones of action, and objectives designed to bring the pursuit to a decisive conclusion. Such directions and zones of action may be around the flanks or through the wider gaps which defeat has opened in the hostile dispositions, or may be a continuation of the existing zones of action.

565. Combat aviation concentrates on critical points on lines of communication in the enemy's rear area, on hostile columns in retreat, and on hostile reserves endeavoring to reconstitute the defense. It attacks defiles on the enemy's line of retreat and disrupts traffic on the main roads and railroads in the enemy's rear area. Reconnaissance aviation reconnoiters vital points along the roads in the enemy's zone of retreat to keep contact with retreating columns and to locate any movement of hostile reinforcements, and keeps ground commanders informed of the hostile activities and movement within their zones of action.

566. The employment of artillery is based upon the maximum exploitation of the mobility of lighter pieces and the long range of the heavier types. So long as the withdrawing enemy can be engaged with observed

and planned fire, a portion of the artillery remains in position to fire on the more distant targets.

The artillery attached to the pusuing forces, in addition to its supporting action, fires on hostile elements attempting to form columns in rear of the enemy's covering troops, and gradually takes over the missions of the artillery remaining in position.

567. The purpose of the encircling maneuver is to get in rear of the defeated enemy, and halt his retreat so that he may be destroyed between the direct pressure and encircling forces.

When practicable, mobile forces in the encircling maneuvers advance along roads paralleling the enemy's line of retreat to cut him off at defiles, bridges, and other critical points. When the encircling forces cannot outdistance the enemy, they push through to a critical locality and engage the enemy's main forces in flank.

Armored and motorized units are employed in the encircling maneuvers and combat aviation may be coordinated with these maneuvers. The employment of airborne troops to seize defiles or other critical terrain objectives deep in the hostile rear, pending the arrival of more powerful mobile encircling forces, may contribute decisively to a successful pursuit.

568. The advance in the decisive direction must be maintained. Hostile rear guards or forces on flank positions must not turn pursuing forces from the decisive direction. Every effort must be made to block the main hostile force. When necessary, a new encircling force to continue the pursuit is constituted.

When the enemy succeeds in establishing himself in a position from which he cannot be dislodged quickly, the superior commander takes prompt measures to coordinate the attack again, supporting it with all available means. (See pars. 538 and 539.)

569. The enemy's attempts to organize his retreat under the cover of darkness must be frustrated. Under no circumstances must he be allowed to break contact. Units which have advanced without serious opposition continue their march during the night. Other units organize successive limited objective attacks against the enemy in their front.

During a night pursuit, the leading detachments push their advance along all available roads, followed by the main pursuing forces. The attached artillery advances by echelon, going into successive positions from which it can interdict the enemy's routes of retreat by map firing or by fire directed by observers which accompany the leading detachments. Prompt report is made when objectives are reached so that artillery fires may be coordinated.

Combat aviation searches enemy routes of retreat with flares, and attacks enemy columns and critical points in the enemy's rear area.

570. Pursuit requires extensive reliance upon radio for communication with the leading troops. The importance attached to hostile interception of radio communication in other situations does not obtain in equal degree in pursuit. Effort is made to intercept the enemy's radio messages. The construction of wire lines is concentrated along the more important axes. Command posts or advance message centers are established close behind the leading troops.

571. Adequate provision for the supply of ammunition and motor fuel to the pursuing troops is essential to the success of the pursuit. Every opportunity must be seized to augment supplies of all kinds from captured or abandoned stocks. The commander must relieve the pursuing columns of all worries concerning supply and evacution.

Section VI. SECURITY IN THE OFFENSIVE

572. Success or failure of an offensive is dependent in a large measure upon the action taken to protect the command from hostile reaction. Open flanks are highly vulnerable. The best security is to keep the enemy so heavily involved that he has no time or means available to endanger the success of the attack. Security of attack forces is assured by a timely search for information in all directions from which a hostile threat may come, by the proper disposition of security forces of ample mobility and combat power, and by prompt dispatch of accurate information and orders to security forces. This is particularly true in security against hostile forces of great mobility such as air, tank, motorized and cavalry units. In offensive operations, the service of security is performed in accordance with the general doctrines discussed in chapter 7.

573. In offensive operations, the mass of available means for defense against air and mechanized attack is disposed to favor the main attack. The combat means for defense against air attack are supplemented by utilization of cover, defilade, dispersion, and night movements to the maximum. The combat means for defense against attack by tanks or other mechanized forces are supplemented by utilization of natural and artificial obstacles to protect the flanks and rear of the command, by dispersion, and by night movements. (See chs. 7 and 11.)

574. Antitank guns in each echelon of troops are disposed to cover the most likely avenues of approach of hostile mechanized units; the bulk of the antitank guns are held mobile, prepared to meet a hostile mechanized attack at any point. Protection against mechanized attack is best assured through the use of strategically located obstacles strengthened by demolitions and mines and protected by mobile antitank

guns supported by every available and effective means of fire support. Such action isolates and destroys the hostile mechanized forces.

575. In offensive operations, the greatest need for security exists during critical phases of the battle. Security is enhanced by meeting possible threats with heavy fire before they can develop. The action of combat aviation against highly mobile threats and against close, less mobile threats is particularly effective, especially if hostile troops or vehicles are in close formation.

Section VII. TERMINATION OF OFFENSIVE ACTION

576. An offensive action once begun is halted only by hostile reaction or by other elements in the situation which demand it.

If, during the course of an attack, it becomes necessary to pass to the defensive, the leading foot elements intrench themselves on the ground held. The leading echelon then is thinned out and forces are redistributed to organize the defense in depth. It may be necessary to move some elements to the front or rear for short distances to establish the defense on favorable terrain and secure flanking fire. Since any major adjustments attempted in daylight will probably result in heavy casualties, the general position of attacking units is maintained until darkness, when the selected defensive position is occupied and organized as described in chapter 11.

If the situation demands major adjustments in daylight, they are accomplished under protection of fog or smoke, and maximum fire support by artillery and other supporting weapons. Combat aviation may be employed in coordination with the other forces.

577. If, during the course of an attack, it becomes necessary to break off the action and withdraw, the

command initially passes to the defensive. The completeness of the defense is dependent upon the situation and whether the initial defensive and the withdrawal must be executed in daylight or darkness. Thereafter, the withdrawal is executed according to the doctrines discussed in chapter 12.

CHAPTER 11

THE DEFENSIVE

Section I. ORGANIZATION FOR DEFENSE

GENERAL

578. The general object of defensive combat is to gain time pending the development of more favorable conditions for undertaking the offensive, or to economize forces on one front for the purpose of concentrating superior forces for a decision elsewhere.

Under the first of these objects, a commander may assume the defensive pending the arrival of reinforcements, or he may be thrown on the defensive by inferiority in numbers, disposition, or training. He may take up a defensive position and invite attack as part of a deliberate plan to win the battle by a counteroffensive.

Under the second object, the defensive is usually expressed in the mission received from higher authority. This mission may be to hold a vital area pending completion of the maneuver of other forces to protect a flank, or to contain an enemy force while an offensive is being conducted on another part of the front or in another theater.

579. Our defensive doctrine contemplates the organization of a *battle position* to be held at all costs, and the use of covering forces to delay and disorganize the advance of the enemy and to deceive him as to the true location of the battle position. (See par. 591.)

RECONNAISSANCE AND SELECTION OF POSITION

580. The mission, the situation, and the terrain limit

the choice of localities where the defense may be offered.

Commanders of large units usually determine from the map the general location of the battle position.

The position on which battle is offered must conform to the object of the defense and should facilitate future maneuver without jeopardizing the success of the defense. It must force the enemy to a direct attack or a time-consuming maneuver, as a position that can be readily avoided has no defensive value. A flank position must draw the enemy from his original direction of advance.

581. Reconnaissance of the position is as detailed as the situation permits. It includes a study of the principal routes of hostile approach, terrain available for hostile observation, and the corridors most advantageous to the hostile attack. A study of the terrain in which the enemy must carry out his attack will give valuable indications of his possible assembly positions, the location of his artillery, the terrain favorable for attack by his mechanized forces, and the area most advantageous for his main attack.

582. If contact with the enemy has not been made, the commander ordinarily is free to make a detailed reconnaissance of position, select the terrain on which to defend, and decide on the best distribution of troops. In this case, the command usually is developed into an assembly position preliminary to deployment for defense.

583. Basing his action on his mission, his personal reconnaissance, the reconnaissance reports of his subordinates, and the available information of the enemy and friendly troops, the commander forms an estimate of the enemy's capabilities and the probable front of hostile attack, and makes his decision regarding the location of the main line of resistance, the employment

of the artillery, the assignment of sectors, the strength and location of the general reserve, the antimechanized defenses, and other measures necessary for security. Successive reconnaissances by lower commanders fix on the ground the distribution of smaller units and the location of their combat emplacements. Exact information as to the trace of the main line of resistance is furnished to the artillery.

584. In the hasty assumption of the defensive from a march formation, reconnaissance usually must be curtailed and the defense assumed directly from the development.

Depending on the mission and the situation, it may be advisable for a commander initially to attack in order to seize terrain to his front on which to organize the battle position. In other situations he may employ a covering force, organizing the battle position on terrain in rear.

585. *Continuous reconnaissance and observation* of the enemy's dispositions are conducted to secure the earliest possible indications of the enemy's offensive preparations. Air reconnaissance may provide, either by visual means or photographically, the information concerning the situation in rear of the enemy's leading elements.

586. The character of the terrain exercises a decisive influence on the selection of position. Ridges and valleys generally parallel to the front of advance constitute obstacles to the progress of an offensive and are natural lines of resistance for the defense. Such ridges often afford observation and fields of fire favorable for a defense in depth.

Natural obstacles (e. g., river lines, woods, swamps) are important factors for consideration, especially if the situation requires that protective measures be

taken against mechanized units, or other mobile forces, such as horse cavalry or motorized units.

Commanding elevations and ridges delimit the compartments of terrain and form the framework of the system of observation, command, and fire control in combat. They determine directly the location of the observation posts and positions of the artillery and other supporting weapons, and indirectly the location of defensive and assembly positions.

As a general rule, long gentle slopes afford better conditions for defense than abrupt elevations. However, positions along commanding heights are suited for delaying action.

587. The *battle position* is so selected as to use the terrain to the greatest advantage. The extent of the position must be appropriate to the available troops.

The most important terrain factors are adequate artillery observation, good fields of fire, concealment from hostile observation, and the presence of natural obstacles. The relative importance of these terrain factors depends upon the strength, composition, armament, and mission of the defending force, together with a consideration of the enemy's capabilities.

In selecting the forward limit of the battle position, the defender seeks terrain which will permit the most effective employment of the fires of artillery and other weapons. Clear fields of fire for small arms are important and usually lead to the location of the main line of resistance on a forward slope. Considerations of concealment and the ability to escape the annihilating effect of enemy observed fire, particularly from direct fire weapons may, however, dictate the selection of a reverse slope position. Such position is practicable when possession of the crest to the front is not essential to the observation of fire or when the forward slope is otherwise unsuitable for defense.

When the forward limit of the position is on the forward slope, the defense areas of front-line battalions

may be extended to the rear to include the reverse slope. When it is located on the reverse slope, front-line battalions establish detachments on the forward crest to fire on attacking troops during their approach to the position.

Observation to the limit of range of the weapons is desired in front of the main line of resistance, as well as within the battle position. Adequate observation posts for artillery are essential. The battle position must be so located that the essential observation will be retained even though the enemy succeeds in penetrating into the position.

Maximum advantage is taken of natural and artificial obstacles to stop attack by mechanized units or limit the directions of their movement. Towns, villages, and cities have considerable defensive strength against mechanized attack. They are, however, vulnerable to air attack, especially by incendiary bombs.

588. All parts of a position will not have the same defensive strength. Avenues of approach which enable the attacker to reach the position under concealment or cover are sources of weakness. These avenues of approach may, however, be unsuited for enemy tank attacks. Clear fields of fire over which the enemy must advance for some distance under the defender's fire are sources of strength in a defense against foot troops, but may furnish excellent terrain for hostile mechanized attack. The defender must be prepared to meet that form of attack which the terrain favors.

589. A position combining all defensive advantages will seldom be available. The weak points of a position are strengthened. A short field of frontal fire is compensated by dense flanking fires and heavy mortar and artillery concentrations; exposure to hostile observation, by distribution in depth and construction of dummy works and masks; deficient observation, by increased strength of local garrisons. Persistent chemi-

cals, demolitions, and mines can be used effectively to strengthen exposed flanks and to contaminate and block covered avenues of approach leading into the position.

590. The defense, no less than the offense, must effect *surprise*. The organization of a defensive system must not betray the defensive dispositions. They should mask the real defensive organization. Every available means must be employed not only to mislead the attacker as to the location of the position but also as to the strength and disposition of the defending force. Deception, delay, and security are obtained through the use of covering detachments.

TACTICAL ORGANIZATION

591. The defense is built around a series of tactical localities, the retention of which will insure the integrity of the position. A battle position comprises a zone of resistance consisting of a number of mutually supporting defense areas disposed irregularly in width and in depth, each organized for all around defense with trenches, fox holes, obstacles, and emplacements. Tactical unity is maintained in each defensive area.

A line joining the forward edge of the most advanced organized defense areas is called the *main line of resistance*. It is the line in front of which all elements of the defense must be able to concentrate their fire to break up the hostile attack. The contour of the main line of resistance is thus irregular in trace, with elements on it sited for frontal and flanking fire.

592. The distance between successive echelons on the battle position (units on the main line of resistance, company supports, battalion reserves, and regimental reserves) should not exceed the effective range of small-arms fire. It should be sufficiently great, however, to prevent any echelon from falling into the zone

of dispersion of artillery fire directed against a more advanced echelon. This distribution in depth diminishes the effect of hostile fire and provides for continuity in defensive fires and movement against the enemy, even though he succeeds in penetrating into the battle position.

593. The natural defensive strength of the position has a direct bearing upon the distribution of troops for its defense, both as to frontage and depth. The all-around defense of mutually supporting vital tactical localities (key points) is of paramount importance. Portions of the front which have great defensive strength can be held with fewer men, or units can be assigned wider sectors, while the reverse is true in weak portions of the front. Some portions of the front may remain unoccupied yet be held effectively by a combination of firepower and obstacles. Close terrain and exhausted troops require a greater density of troops forward toward the main line of resistance. For details of infantry defense see FM 7–20 and 7–40.

594. The *width of sectors* assigned to infantry units varies with the natural defensive strength of the various parts of the position, the relative importance of the sectors, the degree of control required, and the number and strength of units available. The necessity for control and the character of fields of fire affect the intervals which may be permitted between tactical localities. Some variation in the width of sectors may arise from the necessity for adjusting them to fix responsibility for defense of terrain corridors. By adaptation of the width of sectors to their natural strength, there results an economy of force which enables the commander to hold out the maximum strength for use as reserves.

595. Sectors are delimited in orders by boundaries—lines indicated on the map or ground extending from

rear to front. Boundaries are located so that there will be no question of the responsibility for the defense of the key terrain which dominates a critical avenue of hostile approach. While it is frequently impossible to include both the avenue of hostile approach and the adjacent dominating terrain in the sector of the small units, the boundaries of sectors assigned to battalion and larger units should be located to insure unity of defensive dispositions and fires in defense of these critical localities.

Boundaries are extended forward of the battle position to the limit of the range of the weapons with which the unit is equipped. Boundaries may be extended forward to include the outpost line in order to delineate the outpost responsibility of units on the battle position. The extension of boundaries to the rear is influenced largely by the existing road net and routes for movement within the position.

596. The division commander determines the distribution of the division artillery and its subdivision for combat (direct and general support). Since the rapid concentration of artillery fire on important objectives is essential to a successful defense, when the situation permits, control of the artillery under the direction of the division commander is preferable. Every effort is made to meet the hostile main attack with the mass of the artillery fire.

The *echelonment in depth* of the artillery takes into consideration the range of the various weapons, the location of the targets, and the possibilities of neutralization by hostile counterbattery fire. The echelonment is limited by the considerations that the entire artillery must be able to concentrate its fire in close support of the main line of resistance, that the foremost echelon can fire deep in the hostile zone, and that the rearmost can support the rear defense areas of the battle position.

597. The battle position is protected by outposts whose mission is to provide time for the main force to prepare itself for combat, to deceive the enemy as to the location of the battle position, to force early development by the enemy, and to provide a deeper view within the terrain over which the attacker will advance.

Whenever practicable the outposts are located at sufficient distance from the main line of resistance to prevent the occupying forces from being taken under observed fire by hostile light artillery. Outposts will ordinarily not be established beyond the effective range of the light artillery of the battle position.

The outpost line of resistance and the ground between the outpost and the battle position are organized for delaying action to the extent permitted by the time and labor available.

598. When forced to withdraw under hostile pressure, the outposts conduct a delaying action. Every effort is made to deceive the enemy as to the exact location of the battle position. The withdrawal of the outposts must be so arranged that they neither will interfere with nor be endangered by the fire from the main position. Coordination is facilitated by the use of prearranged signals and previously designated routes of withdrawal.

599. Whenever practicable, an advanced covering force is employed in front of the outpost. The mission of this covering force is to inflict the maximum delay on the enemy; to permit the defender to utilize advanced artillery observation; to permit the laying of mines, demolitions, and obstacles in front of the outpost and the battle position; and to deceive the enemy as to the actual location of the battle position. Similarly, such forces may be employed on exposed flanks.

600. Natural terrain obstacles, such as water courses,

heavily wooded areas, and swamps, are particularly favorable areas for the operations of advanced covering forces.

The initial position of the advanced covering force and the terrain between this force and the outpost are organized to the extent practicable in the time available.

601. The advanced covering force should be mobile. The use of cavalry, armored and motorized troops, and engineers is indicated. It should have strong artillery and antitank support. Organic artillery may be reinforced by artillery from the main force, temporarily emplaced in advance of the battle position.

602. The advanced covering force fights delaying action in its withdrawal. It avoids serious engagement with the enemy.

603. The direction from which the main attack may be expected and the commander's plan of maneuver determine the initial location of the reserve. According to circumstances, it is echeloned for protective purposes in rear of an exposed flank, held in a position in readiness from which it can deliver a prepared counterattack, so disposed that it can launch the counteroffensive by striking a hostile attack in flank.

604. *Horse cavalry units* rarely should be called on to defend a position. Cavalry seeks to accomplish defensive missions by delaying action or by defensive-offensive tactics. When required to defend in position, it operates in general as does infantry.

605. *Corps and division cavalry* is employed on reconnaissance missions with especial attention to locating the mass of the hostile force. It may be reinforced by motorized infantry, artillery, and engineers, and employed as a mobile covering detachment. (See par.

579.) During battle it continues reconnaissance and security missions, especially to the flanks. It may be held in mobile reserve or used to harass enemy flanks and rear when the situation permits.

606. *Armored units* are not normally employed to hold defensive positions. They may, however, be employed well forward to cover the occupation of a position by other troops. They employ delaying action to accomplish this mission. (See. ch. 12.) Should the situation demand it, they may be required to hold an area pending the arrival of other troops. In performing such a task, they operate similarly to horse cavalry except that larger reserves are withheld initially for the purpose of counterattack. When supporting infantry, they constitute a powerful striking force and are held initially in reserve prepared for rapid entry into combat when an opportunity for a counterblow is presented.

607. *General reserves* may be called upon to relieve units on the battle position, participate in a major counterattack or counteroffensive, extend the flanks of the battle position, or occupy a rear position.

Prior to commitment to a definite line of action, they are held mobile, prepared to participate in battle in accordance with the plan of maneuver of the superior commander. While so held, they are disposed for all around defense against attack by hostile forces which may succeed in passing through or around the battle position. Necessary measures are taken for protection against hostile aircraft and for countering an attack by airborne troops.

ORGANIZATION OF FIRE

608. Coordination of the fire of the infantry, artillery, antitank, antiaircraft, and other weapons is carefully planned and expressed in orders. Plans provide for

bringing the enemy under effective fire as early as practicable unless the situation requires that fire be withheld to obtain surprise, and for so regulating the intensity of the fire that the enemy is subjected to progressively heavier fire as he approaches the defensive position.

609. The organization of systematic flanking fire by machine guns supplemented by other small arms constitutes the basis of defensive dispositions. Adjacent units, in addition to defending their own fronts, mutually cover one another's fronts with flanking fire. Dead spaces in bands of machinegun fire are covered by the fire of other weapons. Fire effect is increased by obstacles which hold the enemy under frontal and flanking fire. Sectors of the defensive position especially exposed to hostile fire may be left unoccupied, except at night and during periods of low visibility, and defended by flanking fire from adjacent sectors.

Machine guns are so distributed in width and depth in each battalion defensive area as to take full advantage of terrain. As far as practicable, their fire should cover the entire front of the main line of resistance with continuous bands of fire. Some machine guns are sited to take under flanking fire hostile elements which succeed in penetrating the main line of resistance. Some of the heavy machine guns are located where they can develop long-range fire during the hostile approach without disclosing the location of the main line of resistance.

Artillery fire is coordinated in the defensive plan of fire and is especially concentrated on the critical localities and on ground which is dead to or beyond the range of the fire of other supporting weapons. A considerable portion of the artillery must be capable of concentrating its fires on any enemy penetration of the battle position. The effective control of this fire

requires good observation and efficient signal communication.

610. All possible measures are taken to insure security against mechanized attack. *Antimechanized defense* is organized throughout the depth of the position. The main antimechanized defensive effort is made in areas which are favorable to the employment of mechanized forces. Battalion and regimental antitank guns from concealed positions defend the forward part of the battle position, while antitank weapons of higher units are echeloned farther in rear. Positions and routes for these weapons are reconnoitered, and the guns are held in readiness prepared for rapid movement to any threatened part of the front. (See also ch. 7 and sec. V, ch. 11.)

Through a judicious combination of antitank weapons and obstacles, aided by artillery fire, tanks, and tank destroyers, attacks by mechanized forces are broken up and halted as soon as they are disclosed.

611. The division artillery commander prepares the general plans for the employment of artillery in accordance with instructions of the division commander. Coordination between artillery fires and those of other weapons is essential. It is effected principally through liaison between artillery units and the units they are designated to support. The close support of the main line of resistance is a governing consideration in the formulation of all artillery plans.

612. The *artillery plan of fire* is based primarily upon the execution of a counterpreparation to break up or cripple the hostile attack before it can be launched. Fire is not opened by the mass of the artillery until targets of sufficient importance are disclosed.

It is important to take hostile artillery under fire at an early moment, to interdict hostile routes of ap-

proach, and to dislocate the hostile system of command and fire control.

The artillery of the attacker is most vulnerable from the moment it comes within range of the defender's artillery until it has completed its deployment. During this period, it constitutes one of the principal targets of the defender's artillery fire and aviation. The fire of all available artillery is concentrated to cripple the hostile artillery before it can get into action. *Counterbattery* continues to be the principal mission of a portion of the artillery, especially the medium artillery, throughout the battle.

The corps gives the division instructions regulating the employment of the division artillery in the execution of its more distant missions. The corps reinforces the action of the division artillery and extends its sector of fire in depth by the use of the artillery at its disposal. Long-range destruction and interdiction fire is directed especially on sensitive points in the enemy's rear areas and on his lines of communication (bridges, crossroads, and supply establishments).

613. *Combat aviation* attacks hostile ammunition and other supply establishments, airdromes, railroad installations, and bridges important in delaying or dislocating the hostile preparations for attack. Other remunerative targets for combat aviation are enemy columns, artillery in position, reserves, and mechanized forces.

614. *Antiaircraft artillery* is disposed initially to protect the organization and occupation of the battle position.

When the commander has determined on what front the enemy is making his main attack, the antiaircraft artillery concentrates its efforts on preventing air reconnaissance and attack on the threatened parts of the defensive position, and on protecting the employment of reserves for counterattack.

If sufficient antiaircraft artillery is available, some units are assigned to the defense of important roads and installations (railheads, ammunition establishments, and airdromes). The antiaircraft artillery intelligence service gives prompt warning of the approach of hostile aircraft to all units concerned. (See par. 58.)

Antiaircraft artillery weapons are sited so they may be employed against attack by mechanized vehicles when this can be done without interference with their normal missions. In the event of simultaneous attack from hostile aircraft and mechanized vehicles, fire must be concentrated against the more dangerous threat.

ORGANIZATION OF THE GROUND

615. The organization of a position is limited only by the time and facilities available. Protection is to be sought in the distribution of defenses in depth and in width, their adaptation to the terrain, concealment from hostile observation, and in the strength of construction. From the beginning, great care is taken to conceal the most important works by *camouflage* or natural terrain features. Measures for increasing the effect of fire and for providing adequate signal communication take precedence over the construction of field fortification.

616. Troops carry out the organization of the position in accordance with a plan of construction expressed in orders in the form of priorities. After the location of combat emplacements has been fixed, priority is given to clearing the field of fire, to removal of objects masking our own observation, and to the determination of ranges to points in the foreground. These measures are followed ordinarily by the construction of the various defensive works and obstacles, and by the preparation of routes of approach for reserves and for ammunition supply. Primary consid-

eration should be given to provisions for camouflaging the works as they are constructed. Work may proceed simultaneously on several items.

Artillery and heavy weapons units give priority to the construction of observation and command posts and signal communication systems, and provision for the supply of ammunition. Shelter is constructed for personnel, and provision is made for camouflage of ammunition dumps and the protection of ammunition against the weather. For the protection of guns, more reliance is placed upon camouflage and provision for alternate positions than upon the fortification of gun emplacements.

617. In the construction of *obstacles,* wire entanglements are sited so that their outer edges can be swept by flanking fire. Other obstacles are coordinated with demolitions. All obstacles are covered by fire to hinder their removal. They should be concealed from hostile observation.

618. *Dummy works* serve to mislead the enemy and disperse his fire. To be effective, they must closely resemble genuine works; dummy works easily recognizable as such give the enemy valuable negative information. They must appear realistic.

619. Channels of signal communication are increased and alternate channels provided. Units are connected by wire lines not only with the rear but also laterally; the importance of lateral lines consists not only in affording direct signal communication between adjacent units but also in making available numerous alternative channels of signal communication between advanced units and the rear. Alternate command posts are selected and organized.

620. *Engineers* are employed to impede the advance of the enemy by the execution of demolitions and by

the creation of a zone of obstacles, including mine fields and booby traps. When necessary, they defend the demolitions and obstacles which they construct. They increase the defensive powers of the other arms by the construction of field works requiring special equipment or training, by technical assistance in other works of organization of the ground, and by furnishing them with the necessary tools and engineer supplies.

They may also be employed in the siting or preparation of rear positions. In emergencies they may participate in the defense as infantry.

621. The activities of the *chemical troops* and engineers are closely coordinated. Persistent chemicals, if to be used, have especial defensive value by reason of the fact that concentrations established before the hostile attack retain their effectiveness during the course of the attack. Barriers of persistent chemicals are placed to protect portions of the front and flanks of the position and to cover defiles, vital roads, road junctions, and wooded stream lines across or along favorable routes of hostile approach. When these barriers can be placed without hostile interference, persistent chemical mines are employed; when the area is controlled by the enemy chemical barriers can be laid by aviation, artillery, or chemical mortars. In deciding to use persistent chemicals, the commander must carefully evaluate its effect on his contemplated future operations.

622. The selection of a rear position at such distance from the main position that the attacker cannot direct the fire of his artillery upon it without displacing his batteries, facilitates the conduct of a flexible defense. The extent of its organization will depend upon the situation and the time available. The forces employed in the construction of the rear position must

not be obtained at the risk of jeopardizing the defense of the main battle position.

623. The development of a hastily occupied defensive position into a more strongly fortified defensive system is dependent upon the situation and the time and material available for construction. This may take place on a front which has stabilized after an indecisive battle, or is out of contact with the enemy.

624. The development of such a defensive position aims first of all to strengthen the main line of resistance, battery positions, and the command and control facilities of the entire position. The means employed include numerous communication trenches; obstacles, including tank barriers and mines; shelter for troops; observation and command posts, including alternate locations; signal communication; gun positions; and supply dumps. These works differ from those in mobile situations in the elaborateness and permanency of their construction. In areas of resistance in rear of the main line of resistance, permanent works are constructed to limit hostile penetration. All works are concealed or camouflaged.

In the siting of emplacements for defending troops, extreme care must be taken that there are no undefended approaches from any direction that would permit hostile elements to work their way in close enough to destroy the occupants with hand grenades or other close-combat weapons. Provision must be made for protecting the rear against attack by airborne troops and by highly mobile forces.

625. *Communication trenches* greatly facilitate the exercise of command, the movement of troops, and the functioning of supply. In moving situations, time will rarely be available for the complete construction and camouflage of such trenches. They are indispensable in the prolonged occupation of a position. They are

constructed first over exposed stretches on the routes of approach from the rear; their entrances are conspicuously marked. As a general rule, communication trenches should not be employed as combat emplacements. They should be sited so that they will not indicate to the enemy the location of combat emplacements. Their use, however, as part of a switch position in case the main line of resistance becomes untenable, should be considered.

626. The nature of overhead cover varies with the location of the troops to be sheltered. The only forms of protection having permanent value against fire are dugouts and concrete or steel shelters sufficiently resistant to withstand high-powered artillery fire and bombs from the air. Deep dugouts in the front lines do not permit the prompt egress of troops, and in case of attack may become traps. Overhead cover for front-line troops is designed chiefly to afford splinter-proof protection and shelter from the weather. Lack of strength is compensated for, as far as possible, by the increased number and smaller size of the shelters.

627. Overhead cover is an essential means of conserving the fighting capacity of the troops in the prolonged occupation of a position.

Reserves within range of hostile artillery fire and subject to the attack of combat aviation are, as far as practicable, sheltered in bombproof dugouts.

628. In a stabilized situation, the problem of drainage assumes great importance; the siting of works with a view to effective drainage is always given due consideration.

629. In addition to the depots of large units, small dumps of ammunition, rations, and materials needed in the construction and defense of the position are established in the sectors of small units.

630. The priority of work in the development of a position which is out of contact with the enemy is determined largely by the time required for the construction of the essential works and the extent to which they lend themselves to camouflage. Provision must be made for camouflage before the work is begun. Then camouflage is carried on continuously throughout the work.

After reconnaissance and determination of the method of occupation of the position, command posts, observation posts, signal communication facilities, obstacles, and shelters for the troops are constructed. Adequate forces must be concentrated early on important works requiring a considerable period for their construction. To avoid disclosing the position, the construction of fire and communication trenches may be deferred until troops occupy the position.

Section II. CONDUCT OF THE DEFENSE

631. The defense is conducted along mobile lines. Mobility is obtained by the use of covering forces, by improving facilities for movement within the battle position, by distribution of forces in depth, and by holding out reserves capable of rapid movement. Covering forces delay, deceive, and disorganize the enemy; units in organized areas of the battle position hold their positions at all costs; reserves maneuver behind the pivots thus established. Mobile and rigid defense are combined so that possession of the areas essential to the maneuver of the defensive forces is retained, the maximum forces are made available for counterattack or counteroffensive purposes, and the enemy is deceived as to the character of the resistance with which he is confronted.

632. The conduct of the defense must be aggressive. It must be prepared to take advantage of errors or failures on the part of the enemy. The counterattack

is the decisive element of defensive action. It is seldom feasible to hold a defensive position by passive resistance only.

633. The integrity of the battle position is maintained by a combination of fighting in place and counterattack.

Regardless of the considerations which dictated the adoption of a defensive attitude, the tactics of defensive combat are essentially to develop the maximum firepower against an advancing enemy, to reduce our own losses by a better knowledge and utilization of the terrain, and thereby to stop the enemy's advance or throw him back by counterattack.

634. In order to maintain itself in action in the face of hostile superiority, the artillery must fully exploit its mobility. If there are indications that the location of certain batteries has been discovered, such batteries effect a change to one of their alternate or supplementary positions.

In quiet periods, artillery units assigned to counterbattery and harassing missions may be moved to previously surveyed positions for the delivery of fire. This movement, occupation of position, delivery of fire, and return to position are generally accomplished during hours of darkness.

635. When the imminence of the hostile attack is discovered, counterpreparation fires are directed upon the hostile attack formations, artillery, and command, observation, and signal communication systems to break up the attack before it starts. A general counterpreparation involving all of the artillery with the command is fired on the order of the superior commander. Local counterpreparations designed to cover only the points threatened by a local attack are fired on the order of subordinate commanders.

636. If the enemy succeeds in launching his attack in spite of the counterpreparation, the artillery seeks to keep him under fire in considerable depth by placing defensive concentrations on his advancing attack echelons and on his reserves, and by continuing counterbattery fire. These fires are delivered on the request of supported unit commanders, or of observers following the progress of the attack with air or ground observation.

637. Finally, defensive concentrations and barrages are fired close to our troops. They strengthen the fire of other weapons covering the most dangerous avenues of approach to the positions. Barrages generally are delivered on pyrotechnic signal from the front-line troops, but may be executed on report from artillery observers that the hostile attack is threatening the integrity of the position.

Since a uniform distribution of artillery fire along the entire front is generally ineffective, plans for the delivery of concentrations and barrages are designed to provide fire on critical areas or fronts. These fires, especially the barrages, are delivered at a high rate, and involve a great expenditure of ammunition. Hence, it is essential that front-line units carefully consider the emergency in their calls for artillery support.

Provision should be made for reinforcing counterpreparation and barrage fires by artillery normally assigned to other missions, or by the artillery of adjacent divisions.

638. In addition to the artillery, other supporting weapons participate in counterpreparation and barrage fires. Their fires are coordinated with those of the artillery in the plan of defense.

639. Infantry defends its position by employing all the weapons at its disposal in cooperation with artillery fires. As the enemy comes within range, the in-

fantry heavy weapons, including those of units in reserve, are brought into action.

640. A unit intrusted with the defense of a tactical locality *under no circumstances abandons it* unless authorized to do so by higher authority. Important localities on the main line of resistance must be defended to the last man. Local commanders take the necessary steps to maintain their positions, rectifying gaps in their dispositions or fires by the use of their supports. Plans are made for the employment of local reserves. As the area of their probable employment becomes apparent, reserves are moved to be more readily available for action.

641. When the front and direction of the main hostile attack have been determined, the defense takes final steps to meet it. Artillery and other supporting weapons deliver fires on the attacking infantry. As the hostile attacking elements come within effective small-arms range and are unmasked by the withdrawing outposts, the defending force increases its fire with all available weapons. Threatened sectors not fully garrisoned are occupied. Chemical troops, from positions well forward, supplement the fires of artillery and other supporting weapons with fires on avenues of approach and on known or probable areas occupied by the attacking troops. The bulk of the available reserves are held mobile, prepared for aggressive action.

As the enemy attack draws closer, machine guns switch their fires to their final protective lines; all weapons participate in the fire fight, until finally the enemy is stopped or driven back.

642. Reconnaissance is conducted and plans are prepared for the employment of reserves, based on the probable lines of action which may develop during combat. Reserves must be prepared to occupy a pre-

viously prepared defensive area to check a hostile penetration or an envelopment of the position, or to deliver a counterattack for the purpose of maintaining or restoring the main defensive position. Reserves are committed to the position only to the extent necessary to stabilize the situation and establish a firm base from which to launch a counterattack. Motor transportation is used to increase the mobility of reserves.

643. *Tanks* are essentially offensive weapons. They are held in reserve in a covered position out of effective artillery range until the situation is favorable for their employment. They constitute a powerful reserve in the hands of the commander either to engage hostile tanks or to support a general counterattack or counteroffensive.

644. Should the enemy succeed in penetrating or outflanking the position, the defender seeks through fire and maneuver to eject the hostile elements. The fire of the supporting artillery is concentrated on the hostile elements which have entered the position. Local reserves, supported by all available weapons and protected by smoke, counterattack against the flanks of the gap to thrust back the enemy before he has had time to establish himself. Such local counterattacks must be launched during the period of temporary confusion and disorganization which occurs when the attacking troops have entered the position and have not had time to reorganize and establish themselves. *This period is relatively short. Consequently, the counterattack must be delivered without delay, on the initiative of the local commander.* The object of such counterattack is to stabilize the situation on that particular part of the position and prevent widening of the gap, or, in case of a small penetration, to eject the enemy. Surprise, boldness, and rapidity are the principal factors which lead to successful execution. Anticipatory planning, including reconnaissance and re-

hearsals is essential for the prompt delivery of the counterattack. If the enemy is given time to reorganize and to place his machine guns and antitank guns in position to defend the ground he has gained, the opportunity to counterattack by local reserves probably has passed. Then only a well-prepared counterattack by larger reserves has much chance of success.

645. Should the enemy succeed in penetrating through the position with a strong mechanized attack, it is essential that units on the battle position close the gap thus created without delay, and before succeeding hostile units can exploit the success attained. The shoulders of the salient must be held at all costs. Local commanders must react promptly and on their own initiative rectify the situation.

646. If the enemy has attained such success that local commanders are unable to eject him, the higher commander must decide whether to counterattack with reserves at his disposal to restore the battle position, to continue battle on the battle position and prevent further enemy advance, or to withdraw to a prepared position in rear.

Time is required for the preparation of a major counterattack. Sufficient reserves must be assembled to carry the attack forward. Adequate fire support must be arranged. Assembly positions, zones of action, objectives, and time of attack are clearly specified. Surprise is an important factor. Employment of artillery, chemical troops and armored units is regulated and controlled by the higher commander. Whenever practicable, the counterattack is launched against the flanks of the hostile salient. Advance planning for such an operation is essential in order to reduce to a minimum the time required in final preparation.

In reaching a decision to withdraw to a rearward position, the commander must carefully evaluate the

time required to reach and organize such a position and the effect of hostile mechanized and air attacks on his withdrawing forces. The rapidity and power with which mechanized units and combat aviation can strike indicate the necessity for the organization and occupation of the rearward position prior to the withdrawal of the forces directly engaged with the enemy. Reserves of higher commanders are suitably employed on such rearward positions. To order a withdrawal to an unorganized and unoccupied rear position in the face of attacks by mechanized forces and combat aviation invites disaster for the entire command.

647. When the battle is interrupted by nightfall, combat outposts are established by front-line battalions. (See par. 659.) Provision is made for patrolling and illuminating the foreground and the intervals between defense areas. Front-line garrisons may be reinforced. Machine guns are laid for their final protective fires. Provision is made to place the defensive fires of artillery and other supporting weapons in front of the combat outposts. These fires cover those areas that cannot be reached by rifle and machine-gun fire and should be prepared while there is still some daylight. They are delivered on prearranged signals from the combat outposts.

648. When the enemy succeeds in establishing himself on favorable ground at close range from the main line of resistance, it may be advisable to redistribute the defending forces in depth. In such case the main line of resistance may be shifted to the rear of the zone of resistance, and the original main line of resistance held by combat outposts; or the defense may be transferred to a rear position, in which case the preparations for a withdrawal from action and a renewal of the defense on the new position must be made in advance. (See ch. 12.) Withdrawal to a rear position is as a rule advisable only when the situation clearly shows that

the first position is untenable or will soon become untenable.

649. When a stabilization of operations gradually develops, the decision must be made whether to push an outpost forward and continue to hold the present position, making the necessary rectifications, or to hold the old position as an outpost position and transfer the principal forces to a rear position (see par. 622), which then becomes the main battle position. In either case a redistribution of forces is necessary.

Measures are taken for the development and strengthening of the new defensive position. Obstacles are reinforced, additional mine fields are constructed, defense against chemicals is more thoroughly organized, shelter is provided for men and ammunition, and measures are taken to provide for the rest and comfort of troops.

650. Where a stabilized situation develops or a defense continues for a prolonged period, the necessity for conservation of the fighting power of the troops requires provision for the periodic relief of units. For the sake of continuity in the execution of the plan of defense, it is a general rule advantageous to avoid relieving the artillery and the infantry at the same time.

The relief is preceded by a detailed reconnaissance of the sector by officers of the relieving unit. If time permits, all commanders down to and including platoon leaders should visit the position prior to the relief. Commanders familiarize themselves not only with the disposition of the defending force, but with the known hostile dispositions on their part of the front. Arrangements are completed for the transfer of supplies and special equipment to be left on the position by the unit relieved. Sufficient guides are detailed from the unit to be relieved to meet each infantry platoon

or similar element of the relieving force and conduct it to its position.

651. *Secrecy* in planning and conduct of the relief is essential to its successful accomplishment. The relief should be carried out under cover of darkness, and in sufficient time to permit the bulk of the relieved force to be beyond artillery range prior to daylight. Careful planning and proper supervision will prevent congestion of incoming and outgoing troops at critical points.

652. The execution of the relief takes place under the direction of the commander of the unit to be relieved; he remains responsible for the defense of the sector until the relief has been completed.

Section III. TERMINATION OF THE DEFENSE

653. An attacking enemy through his own maneuvers, losses, errors, exhaustion, or other cause, may be placed in such an unfavorable position that superiority passes to the defender. The latter then has a prospect of success in a counteroffensive, which aims at a tactical decision, the defeat and possible destruction of the opposing force. It is conducted as an offensive operation. (See ch. 10.)

654. Should the situation change to one requiring a retrograde movement, the operation is conducted as indicated in chapter 12.

Section IV. SECURITY IN THE DEFENSE

655. Prompt and continuing security measures are taken in those directions from which the enemy is capable of attacking. Measures for counterreconnaissance are taken by all troops and agencies in order to

screen from the enemy the preparations and dispositions made for defense.

656. The enemy will seek to avoid disclosing the distribution of his forces and the front of his main attack until his deployment is completed. The defense must gain contact with the enemy at the earliest opportunity and maintain such contact in order not to be taken by surprise. Every available means of reconnaissance is employed to locate the enemy and determine the direction of his advance and the distribution of his forces. Additional information relating to the outlines of the enemy's dispositions and the direction of his main attack are sought during the delaying action of the covering forces.

657. If the outpost is at a considerable distance from the battle position, the foreground of the battle position is temporarily occupied by combat outposts detailed from each battalion holding a sector of the main line of resistance.

658. The mission of the combat outposts is to provide local security and gain time for troops responsible for the defense of the main line of resistance, and to deceive the enemy regarding where the main resistance is to be encountered. As long as the main outpost position is held, combat outposts of battalions on the main line of resistance may be relatively weak. The approximate strength of combat outposts may be directed by the higher commander. When there are no friendly troops in front of them, combat outposts maintain close contact with the enemy.

659. As a rule a combat outpost is established by each front-line battalion or squadron in contact with the enemy. When battle is interrupted by nightfall, combat outposts push their patrols forward in close contact with the enemy. The action of the combat

outposts in adjacent sectors is coordinated by adjacent and higher commanders.

Section V. ANTIMECHANIZED DEFENSE

660. Defensive measures against mechanized units comprise mines, special weapons, or the special use of existing weapons, natural and artificial obstacles, organization of the ground, and a warning system. (See ch. 7.) Antimechanized defense must be organized in depth.

661. The antitank gun is of first importance in antimechanized defense. Employment of antitank guns is based on the placing of guns to cover obstacles and routes of tank approach, as a first echelon of antitank defense, with the balance of the guns held as a mobile reserve. Based on information of hostile mechanized forces, reserve guns are moved rapidly to previously reconnoitered locations and so disposed in depth as to permit timely reinforcement of areas threatened by hostile mechanized attack.

Guns intended solely for antimechanized use are kept concealed until their special target appears as their effectiveness is jeopardized if their location is prematurely disclosed. Close-in protection of antitank guns is coordinated with other troops.

662. Weapons whose primary missions are against objectives other than mechanized units are used also against mechanized vehicles to the limit of their effectiveness. Small-arms and machine-gun fire has a limited effect, interfering primarily with the enemy's observation. High explosive and incendiary hand grenades are effective against certain types of armored vehicles.

663. In the use of all direct-laying weapons, fire against mechanized vehicles is withheld until they have come within effective range.

664. Tank destroyer units are effective means to counter hostile mechanized forces. The self-propelled tank destroyer must utilize its mobility to gain an advantageous position from which to intercept hostile tanks, and deliver surprise fire against the enemy mechanized force. Their employment must be closely coordinated with and supported by other ground forces. Towed tank destroyer battalions can be used to strengthen and deepen the antitank gun defense and provide additional mobile reserve. Towed tank destroyer guns are more suitable for advanced positions than self-propelled ones, since they are more easily concealed.

665. All supporting artillery must be prepared to assist in antimechanized defense. In both offensive and defensive action, provision should be made for the rapid concentration of as much artillery fire as possible on all areas favoring the assembly and maneuver of mechanized units, particularly on any defiles leading to such areas. Antitank weapons furnish the main defense against armored vehicles. However, when a strong hostile mechanized attack is imminent, light artillery may be moved to positions from which to counter the hostile mechanized vehicles by direct laying.

666. *Antiaircraft artillery weapons* are suitable for use against mechanized vehicles. Every effort is made to assist in antimechanized security by siting antiaircraft artillery weapons so that they may be employed against mechanized attack. In the event of simultaneous attack by hostile aircraft and mechanized forces, fire must be concentrated against the most dangerous threat. For maximum effect against mechanized vehicles, special armor-piercing ammunition must be provided.

667. Large *tank and tank destroyer units* are effective

means to counter hostile mechanized and armored forces. They must be used offensively in large groups on definite counterattack missions, usually for maneuver to deliver a surprise blow against the flanks and rear of the hostile mechanized force. Their employment must be closely coordinated with and supported by other ground forces.

668. *Combat aviation* is a powerful weapon against mechanized forces. Bombing, chemical, and direct fire attacks will be effective under many conditions. It has the mobility and fire power to strike and break up mechanized threats before they arrive within range of artillery and antitank guns.

669. *Chemical* agents may be used to restrict possible assembly areas for armored units, to cause casualties to units in movement, and to render difficult the removal of obstructions or repair of demolitions. Ordinarily persistent chemicals will be most effective, unless their use will interfere with subsequent operation of friendly troops. Under such circumstances the use of lung irritants, tear, sneeze, or vomiting gas may be advantageous.

Improvised combustibles and explosives thrown by individuals against the most vulnerable portions of enemy armored vehicles are valuable means of supplementing close-in antimechanized defense.

670. *Mines* are an effective means of defense against ground forces. Antitank mines can be laid or buried without prohibitive expenditure of time and labor. They usually are laid in irregular order, in three or more rows, avoiding any strictly geometrical pattern. Mine fields are installed within the defended area as well as in front of it.

Mines are useful for quickly blocking defiles and favorable avenues of hostile approach. The location of mines must be coordinated with natural or artificial

obstacles and with the fire of antitank guns and other weapons. They should be concealed, supplemented by dummy mine fields, and covered by fire to prevent removal by the enemy. The use of antipersonnel mines among antitank mines assist in the prevention of the removal of the mines by other than specially trained personnel.

Mine fields, contaminated areas, and obstacles restrict the movement of the troops they are designed to protect. A record must be maintained of the location and extent of such obstacles, so that friendly troops entering the area can be advised and the necessary precautions taken for the safety of troops.

Antipersonnel mines are often concealed in items of interest; consequently extreme care must be taken when examining objects left by the enemy.

671. *Natural obstacles* to mechanized attack include buildings and walls, watercourses, lakes, marshes, mountainous country, stumps, rocky ground, and thick woods. Few areas can be classed as tankproof. Undue reliance on natural obstacles must be guarded against. Guided by these considerations, the defensive possibilities of terrain must be studied constantly from the viewpoint of antimechanized defense in order to utilize existing natural obstacles to the maximum.

672. *Artificial obstacles* consist principally of mine fields, antitank ditches, obstacles, barricades and demolitions. (For details, see FM 5–30.) The location of artificial obstacles must be coordinated with natural obstacles and with the fire of antitank and other weapons. It is important that obstacles be covered by fire to prevent the enemy from removing the obstructions. Removal of obstacles can be impeded by contamination with persistent chemical agents. In general, obstacles, demolitions, mines, and persistent chemical contaminations are located where the enemy will come upon them suddenly and be unable to avoid

them. If the hostile mechanized attack succeeds in entering or breaking through the battle position, it must be stopped, thrown back, or destroyed, either by antitank gunfire, by tank-destroyer or armored units counterattacking, or by a combination of these and other available means.

673. It may be impracticable or inadvisable to direct the main effort of the counterattack against the enemy's mechanized force. A mechanized attack, once launched and initially successful, proceeds with such rapidity that an attempt to direct countermeasures against the mechanized vehicles may result in a direct pursuit rather than an attack. A counterattack against the base or flank of a salient may often be more effective than one against its point.

674. A counterattack directed at the rear of a mechanized attack will usually meet other mobile supporting troops rather than mechanized units. Such a counterattack employs all available arms, including the mechanized forces of the defender. It has the characteristics of a mechanized attack, that is, it leads with mechanized units and exploits with motorized and foot troops. It seeks to close the gap created by the hostile mechanized force and to isolate and eventually destroy the enemy's advanced elements, including his mechanized forces. However deeply these last may penetrate and however great the damage they may do, once their supply lines are cut they will be immobilized and, in the end, destroyed.

675. All available *fire support* is used in the counterattack. If the counterattack is directed against the enemy's mechanized force, this fire support should be strong in antitank cannon.

676. *Combat aviation* is used at the crisis of the action to the limit of its availability. It is employed on mis-

sions which further the attainment of the ground objectives.

677. The counterattack is conducted by units initially in reserve. The introduction of enemy mechanized forces into the situation affects the composition, location, and equipment of these reserves. They should be highly mobile and strong in mechanized and motorized elements and antitank weapons. They should be located to permit timely and rapid movement toward any point where an enemy mechanized attack may be expected.

CHAPTER 12

RETROGRADE MOVEMENTS

GENERAL

678. A retrograde movement is any movement of a command to the rear, or away from the enemy. It may be forced by the enemy or may be made voluntarily. It may be classified as a withdrawal from action, a retirement, or a delaying action.

679. Retrograde movements are made to accomplish one or more of the following purposes:

a. To disengage from battle.

b. To avoid battle in a disadvantageous situation.

c. To draw the enemy into a situation unfavorable to him.

d. To gain time without fighting a decisive engagement.

e. To conform to the movement of other troops.

f. To permit the employment of a portion of the command elsewhere.

680. Retrograde movements require constant control and supervision by all leaders. The presence of hostile armored and air forces increases the difficulties of executing these movements and necessitates the organization and occupation of rear positions prior to the retrograde movement. (See par. 646.) Prompt reorganization of units, careful attention to the feeding and care of the men, and the presence of higher commanders well forward will tend to counteract the detrimental effects of this type of action.

681. Mine fields, demolitions, obstructions, and contaminations are used to the maximum in retrograde movements to delay hostile pursuit, assist in flank protection, and to destroy abandoned matériel. Particular attention is paid to use of mines on likely avenues of approach of mechanized units.

682. *Combat aviation* is employed against hostile aviation and to delay the hostile advance or pursuit by harassing and interdicting hostile forces at critical localities. Its action will be closely coordinated with that of the ground forces.

683. In retrograde movements, maximum advantage must be taken of available motor transportation to expedite the rapid movement to the rear of units which have withdrawn from action. Security forces should consist of highly mobile units.

684. Enemy ground and air forces may be expected to follow up relentlessly both day and night any retrograde movement and to strike withdrawing columns from any direction. This necessitates continuous ground and air reconnaissance to both flanks and rear, rapid movement under cover of darkness, strong antiaircraft defense, and continuous all-around antitank defense, particularly on exposed flanks. Mobile reserves, particularly armored and antitank units, are held out in order to counteract wide and rapid movements to our flanks and rear, or penetration through our front, and to counter any attacks by airborne troops.

WITHDRAWAL FROM ACTION

685. A *withdrawal from action* is the operation of breaking off combat with a hostile force. The general purpose of the operation is to regain or preserve freedom of action of our main forces. Contact must be

maintained, however, by our reconnaissance and security forces.

686. A daylight withdrawal usually involves such heavy losses and so great a degree of disorganization that it is preferable for large units to hold out at all costs until nightfall and effect the withdrawal under the cover of darkness. As a rule, only rearward echelons can be withdrawn successfully by day. Small mobile forces may execute daylight withdrawals.

687. The heavier the previous fighting and the closer the engagement with the enemy, the more difficult will be the withdrawal.

688. A withdrawal is facilitated by concealment of dispositions and movements, by bad weather, by rapidity of movement, by the careful preparation of plans, and by counterattacks. Successful counterattacks create conditions favorable to the withdrawal of hard-pressed or closely engaged units. Because of their mobility and fire power, mechanized units are especially suited to support counterattacks.

689. The commander who orders a withdrawal designates a rearward position on which the troops will prepare for a renewal of resistance or under the protection of which the troops may be assembled for further retrograde movement. The rearward position is selected at such a distance that the enemy will be compelled to regroup his forces, displace his artillery, and renew his preparations for attack. Early orders for reconnaissance of the rearward position and routes thereto are essential. The commander makes special provision for holding the road centers that control the lines of communication to the rear, and the features of the terrain that afford extended observation over the areas in rear of the battle front.

690. In a daylight withdrawal, in addition to the rearward position, the commander selects a suitable covering position and details, from any available reserves, a mobile covering force, strong in fire power, to occupy it and *cover the withdrawal of the troops engaged.* Artillery, engineers, antiaircraft automatic weapons, antitank weapons, and chemical troops are attached to the covering force as required.

691. The mission of the covering force is to stop, restrict, or divert the advance of the enemy in order to permit the main body to disengage, assemble, and move to the rear. The successful accomplishment of this mission depends largely on the composition and location of the covering force, the efficient execution of a systematic plan of artillery and machine-gun defensive fires, and the skillful use of counterattacks to release hard-pressed units.

692. The position of the covering force in a daylight withdrawal is selected so that it will cover the routes of withdrawal and the assembly position of the main body. Under certain conditions, the occupation of a flank position may be advisable in order to force the enemy to execute a time-consuming maneuver. When its mission is accomplished, the covering force withdraws to the rearward position.

693. In his order for the withdrawal the commander indicates the rear position, assigns zones or routes of withdrawal to the units of the command, prescribes the strength and conduct of the covering forces, fixes the hour and the priority of withdrawal of units, orders the establishment of essential signal communication, and takes the necessary steps to clear the routes for the movement of troops. A new command post is designated early. Prompt starting of trains to the new areas, evacuation of the wounded, removal or complete destruction of supplies and matériel, energetic

measures for the maintenance of traffic control, construction of necessary bridges, and preparation for the execution of demolitions on the routes of withdrawal are of importance. Every measure must be taken to assure that no abandoned matériel or supplies are left in a condition that will permit repair and use against the withdrawing force. Adequate measures are taken for antiaircraft and antimechanized defense. Measures are instituted to regulate or silence radio communication and to insure secrecy of the movement.

694. It is best usually to withdraw the least heavily engaged units first. When the terrain is favorable and the security of the command permits it, all subordinate units may be withdrawn simultaneously. However, it usually is necessary to move certain units ahead of others in order to avoid congestion and to insure a smooth execution of the movement. This procedure also gives greater security to the command because the units remaining temporarily in place cover the withdrawal of those first to move. In some situations, counterattack may make it possible to withdraw first those units which are hardest pressed, or which are exposed to the most dangerous threats. However, when necessary to protect the command as a whole, these hard-pressed units must stay to the last. It is better to run the risk of losing certain units than to jeopardize the whole command.

695. The zone of action for the withdrawal should provide the best and most direct routes to the rear position. The movement of subordinate units is coordinated by assigning to them zones of action or definite routes. Generally, zones of action are assigned to the main combat units, especially if they may have to fight while moving back. Routes generally are assigned to trains and to those units which move to the rear under control of the higher command; such units may include artillery, tanks, and reserves. The zones

of action or routes so assigned should usually extend to the rear position. If the rear position is distant, the zones or routes should be indicated back to a distance of 1 day's march.

696. At night the withdrawal of the greater part of the forces engaged commences shortly after nightfall. Small detachments are left in immediate contact with the enemy. These detachments, formed from troops nearest the enemy, screen the withdrawal by simulating normal activity of a fully garrisoned position with fire from different positions, reconnaissance by combat patrols, and use of pyrotechnics.

697. In view of the broad front upon which the detachments screening the withdrawal are employed, a single covering force commander ordinarily cannot maintain effective control. The superior commander, therefore, provides artillery support, coordinates the action of the elements holding the various sectors, indicates the time of their withdrawal, and prescribes their action in case of hostile attack. They may be directed to withdraw either at a prescribed hour or upon order. Whenever practicable, the foot elements of these detachments should be furnished motor transportation for movement to the rear, especially when the distance of the retrograde movement is great.

698. Whether the rearward position is organized for defense or is the area in which the command will be assembled for further retrograde movement, the commander makes provision for a covering force in front of this position. The mission of this covering force is to cover the withdrawal of the detachments left in close contact with the enemy and of the artillery supporting these detachments. It has the further mission of protecting the assembly of the main body for further retrograde movement or to serve as an initial outpost if the rearward position is to be defended.

699. At night the withdrawal of front line units is executed on a broad front. Troops withdraw initially straight to the rear and then move to designated assembly areas where small units are reformed and preparations are made for further rearward movement and assembly into larger units.

700. At night a part of the artillery remains in position to support the elements still in contact. It increases its fire activity to deceive the enemy as to the amount of artillery in action and assists the troops in contact in breaking off combat. Well supplied with ammunition and protected for all-around defense, this artillery sacrifices itself if necessary to insure the withdrawal of the supported elements. The remainder of the artillery is withdrawn to the rearward position, priority in movement being given to the heavier calibers.

701. During withdrawals, *antiaircraft artillery* furnishes protection for the assembly areas and critical localities along the routes of withdrawal.

702. *Cavalry* protects withdrawing troops by reconnaissance, protection of the flanks, and delaying action.

703. Continuous reconnaissance is made to facilitate the employment of antitank units and to protect withdrawing troops against mechanized attack.

704. *Tanks* are useful in daylight withdrawals, particularly in counterattacks, to assist other ground units in breaking contact with the enemy. They are not ordinarily used in night withdrawals.

705. Persistent chemicals may be used to deny or make costly the use of probable approaches. Smoke may be useful in covering the daylight withdrawal of a unit over terrain exposed to enemy fire.

706. In addition to their primary mission of effecting mine fields, road blocks, and demolitions, *engineers* reconnoiter, repair, and mark roads. In certain situations they reconnoiter and stake out rear positions and furnish guides. They assist the rearward movement of artillery, mechanized, and other units; destroy materials to be abandoned; act as part of a covering force; and constitute an emergency reserve. *Military police* furnish guides to assist the rearward movement and control traffic.

RETIREMENT

707. A *retirement* is a retrograde movement in which a force seeks to regain freedom of action; the movement being part of a well-defined plan which has for its purpose the refusal of decisive combat under the existing situation. A retirement may be made in one stage or in several stages, depending upon the distance involved. When a withdrawal from action precedes the retirement, the actual retirement begins when march columns are formed.

708. Without competent orders to do so, a *decision to retire* is justified only when all possibilities of accomplishing the assigned mission have been exhausted and a continuation of the battle will lead either to excessive losses or to a decisive defeat.

No commander is authorized to order a retirement on his own initiative simply because of local misfortune or reverses suffered by an adjacent unit.

709. In retirements following a withdrawal, the most important considerations for a commander are to place distance, obstacles, and security forces between his main body and the enemy and to regain his freedom of action.

Trains are put in march without delay, if necessary under escort, and sent to the rear to a selected bivouac

area. During their retirement they establish dumps of ammunition, rations, fuel, and other supplies en route to meet the needs of the retiring troops.

Antiaircraft protection of important defiles on the route of retirement is established.

As fast as troop units arrive in assembly areas, they are formed into small columns and set in motion to the rear.

710. *Road march formations* usually are taken up when the zone of effective hostile light artillery fire is passed. Formations are modified to meet existing conditions of terrain, visibility, intensity of enemy fire, activity of enemy combat aviation, and tactical requirements for control and rapidity of movement.

711. During the initial phase of retirement made from contact, the division generally assigns specific routes to the trains, the artillery, and other auxiliary troops, and indicates when the routes will be cleared for the troops still in action. A *zone of action* usually is assigned to each combat unit comparable to an infantry regiment in size.

712. As the distance from the enemy increases, small columns are consolidated into larger columns. During the march to the rear, constant effort is made to increase the distance from the enemy. This will necessitate forced marches, night or day as well as effective security measures to protect the rear and the flanks and to delay the enemy.

713. The actual terrain objective toward which a retirement is directed depends upon the mission of the command and the purpose of the movement. It should be such as to favor the future action of the command. Factors which influence the selection of this objective are the actual and potential strength of the enemy; reinforcements that may become available; the time

when the enemy can arrive at critical localities on the route of the retirement; and the extent that terrain and the weather favor hostile movement and interfere with friendly movements.

714. The formation and number of columns to be employed during retirement depend principally upon the number of roads available and the hostile interference. It generally is desirable to move the major fractions of a deployed force to the rear simultaneously and abreast of each other. However, a hostile threat to a flank may make it necessary for one fraction to hold in position until the movement of the others is well under way. A restricted road net, or defiles in the zone of movement, may necessitate withdrawals of fractions successively. If a flank is threatened during the retirement, the adoption of an echeloned formation may be appropriate.

715. The retirement order of a small command usually designates the time when each subordinate unit commences its movement. In commands the size of a division or larger, the commander usually designates the time that major portions of the command pass initial points or lines and, when appropriate, the hour that certain lines or assembly areas must be cleared. (See FM 101–5.)

716. Clearing the routes of march and organizing an effective zone of obstacles to delay the enemy's pursuing columns are of greatest importance. Engineers are sent back early to reconnoiter and improve the routes of retirement, repair bridges, and prepare obstacles and demolitions to be executed by the rear guard. Pertinent information of the location of obstacles and of the nature of the demolitions and contaminations prepared is furnished to the retiring troops. Measures are taken to prevent their endangering our own troops and to insure their execution at the

proper time. Chemical troops with chemical mines may be attached to the engineers for the contamination of obstacles and demolitions.

717. *Traffic* is regulated at critical points to prevent congestion, especially in towns, at bridges, and at other defiles. Strong antiaircraft and antitank protection is established at these critical localities until they are cleared by the main body.

718. Security detachments are provided with sufficient *artillery* to support them in the execution of their missions. The remainder of the artillery is so disposed in the retiring columns as best to protect the main body or support the security detachments.

719. The *antiaircraft artillery* is disposed to protect the most vital points on the routes of the retiring columns. As the retirement progresses, the antiaircraft artillery moves rapidly by bounds from area to area, and frequently is given priority on the roads.

720. During a retirement, *cavalry* is employed on security missions, and frequently may constitute or be attached to the rear or flank guards. Reconnaissance, particularly to obtain information of any hostile movement directed toward the flanks, is important and is assigned to the cavalry or to the security detachment controlling the cavalry.

721. *Reconnaissance aviation* must keep under observation any hostile forces that are in position to interfere with the retirement, especially on the flanks.

722. *Engineers* accompany or precede the main columns to facilitate their movement. Suitable detachments are attached to rear and flank guards to assist in delaying the enemy. Some engineers may be em-

ployed in certain situations to reconnoiter and stake out rear defensive positions.

723. A retirement generally offers opportunities for the use of chemicals of all kinds. Smoke may assist security detachments in concealing their movements during successive withdrawals.

724. In retirement orders, present command posts and the next ones to be occupied should be specified. Axes of *signal communication* should be indicated as far to the rear as it is practicable to foresee them.

725. *All-around security* must be provided. In a short retirement which can be completed in one night, the covering force for the withdrawal usually gives sufficient protection for the movement. (See par. 698.) If the movement continues after daylight, a rear guard normally should be formed to protect the march of the main bodies. Initially this rear guard consists of the troops which covered the assembly of the main body reinforced by contingents of other arms as required by the situation.

726. The *mission of the rear guard* is to protect the main body from surprise, harassment, and attack. By the successful execution of this mission a rear guard covering a retirement enables the main body to avoid accepting battle, and regains for the commander of the force his freedom of action. The strength and composition of a rear guard are such as to permit the execution of its mission without the intervention of the main body. When necessary for the security of the main body, the rear guard sacrifices itself in the execution of its mission.

727. A *rear guard* covering the retirement of a combined force consists principally of infantry strong in automatic weapons, supported by artillery. Units of

other arms are added in accordance with the requirements of the situation. Antitank weapons, mechanized units, signal troops, chemical troops and engineers may be included.

The ability of cavalry to conduct delaying action makes it an important element of a rear guard. When the main body has succeeded in gaining sufficient distance from the enemy, cavalry may constitute the principal element of the rear guard.

728. The formation and the method of operation of the rear guard are adapted to the situation. Movement to the rear is made by bounds, based on the progress of the main body and the time limit set by the higher commander for holding designated terrain lines. The distance between the rear guard and the main body is determined accordingly. Delays in the retirement of the main body must be expected.

729. When in contact with the enemy, the rear guard distributes its forces in groups over a wide front and opens long range fire with its artillery and other supporting weapons to force the enemy to deploy and thus to delay his advance. Unless the security of the main body requires a stubborn resistance, the rear guard, as far as practicable, avoids close range combat and withdraws successively from position to position as the enemy approaches.

The successive positions of the rear guard are chosen at such distance from each other that the enemy is forced to renew his preparations for attack in front of each of them and that changes of position by the artillery of the rear guard are reduced to a minimum. A rear guard position should favor withdrawal by affording covered routes.

730. When the enemy presses his pursuit closely, greater resistance is offered. Advantage is taken of favorable opportunities to punish overhasty pursuit by

counterattack. Attack against the flanks of pursuing columns by armored troops or cavalry is an effective means of disorganizing the pursuit. *The most favorable time for offering a determined resistance is during the late hours of the day to permit withdrawal of the rear guard under cover of darkness.*

731. When the distance from the enemy permits, the rear guard retires in march formation. Its distribution corresponds, in general, to that of an advance guard, and in reverse order of march, comprising the reserve, the support, and the rear guard cavalry or motorized detachment. The support provides a rear party and necessary flank patrols. Because of the direction of march, infantry reconnaissance during the retirement is much more restricted than in case of an advance guard. Chief reliance for the execution of the necessary reconnaissances must be placed upon cavalry, mechanized units, and reconnaissance aviation. Mobile troops especially observe and forestall attempts to pass the flanks of the rear guard.

732. Advance guards, composed of mobile troops reinforced by antitank and engineer detachments, are habitually employed, not only to meet the threat of highly mobile forces but to clear the routes of march, insure the uninterrupted movement of the main body, and regulate civilian and refugee traffic. For the latter purpose military police are attached.

733. Flank security is of especial importance during a retirement. When there is danger of an encircling maneuver in pursuit, flank guards, composed of mobile troops with engineer, antitank, and chemical units attached, are detailed to cover the exposed flank. When opposed by an enemy strong in armored and air forces, special attention must be paid to the security of the routes of retirement and the area or position to which the troops are retiring. Under such conditions it will

normally be necessary to employ forces other than those retiring, to occupy and organize the rear position before it is reached by the retiring forces. When conditions permit, the rear position is organized behind strong natural obstacles.

DELAYING ACTION

734. Recourse to *delaying action* ordinarily implies either lack of readiness for battle or hostile superiority of force. Its purpose is to gain time while avoiding decisive action. Delaying action may be used in the opening phases of battle to gain time for the unified employment of the entire command. It also may be called for in later phases pending completion of preparations for counteroffensive action. *It finds especial application in the operations of covering forces and other security detachments.* In offensive operations, delaying action by a portion of the command to delay the arrival of hostile reinforcements may be of decisive importance.

735. Delay of an advancing enemy may be accomplished by offensive action, by defensive action in one position, by delaying action in successive positions, or by any combination of these methods.

736. Skillful use of terrain has a decided influence on all delaying operations. A series of parallel ridges across the lines of hostile advance, unfordable streams, swamps, lakes, and other obstacles on the front and flanks, high ground with good observation and good fields of fire at long range, concealed routes of withdrawal immediately behind delaying positions, and a good road net favor the execution of delaying action.

737. In situations where the enemy has freedom of maneuver and mobile troops and the flanks of a delay-

ing force are open to hostile attack the *protection of the flanks and rear* is of vital importance. Since the enemy may succeed in pushing by the flanks or in executing a wider maneuver with mobile forces to strike in rear of an occupied delaying position, the commander must make provision to block or destroy such forces.

Ground and air reconnaissance forces must be continuously on the alert to locate such threats to flanks and rear.

738. *Delaying action in successive positions* is based on limited resistance on a position, with the intention of renewing this resistance in successive positions if necessary. The defense on each position must force the enemy to early deployment and to time-consuming preparations for battle. Combat ordinarily is broken off in each position before troops become closely engaged. The situation may, however, require a strong resistance on some position, or even a counterattack in order to accomplish the delaying mission.

The delaying measures are continued between positions in order to gain time for organizing resistance on the next position. Because of the retrograde and long-range nature of such combat, delaying action is executed most effectively by troops possessing a high degree of mobility and great fire power, especially at longer ranges.

In general, contact is made as far forward as possible and continuous light resistance is offered in order to compel the enemy to employ his whole force and to consume a maximum of time. No more ground than necessary is given up. The ability to execute planned withdrawals under conditions that permit orderly movement to the rear must, however, be retained.

739. In open terrain the important consideration in the selection of a delaying position is a good field of fire at long range. In close and wooded terrain, obser-

vation and fields of fire are equally unfavorable for both sides; the defender can, however, make full use of the cover, concealment, and obstacles offered by the terrain, whereas the attacker is restricted in movement and is unable to exploit fully his superiority of means. The ground in rear of the position should favor a covered withdrawal by screening the troops from hostile view and fire as soon as the position is vacated. Field fortifications are reduced to the minimum; full use is made of mines, obstacles, booby traps, demolitions, and chemical interdictions in front and on the flanks of the position and in the areas between successive positions.

740. The conduct of delaying action is facilitated in open terrain by selecting successive positions on high ground at such distances apart that the enemy will be forced to displace his artillery in order to attack the next position in rear. In wooded terrain the infantry bears the brunt of combat and successive positions may be much closer together. Each position should insure facilities for artillery observation and for the delivery of effective long range fire by other supporting weapons. In general, the depth of the zone of resistance is not great. The artillery and the other supporting weapons are located well forward.

741. When the enemy has superiority in air or armored forces, or both, the commander must ordinarily delay on a position until nightfall and then withdraw under cover of darkness to the rear position. Considerable distance between positions enables the commander to utilize fully the hours of darkness for withdrawal. In such situations, selection of positions strongly protected by natural obstacles which facilitate defense on a broad front becomes a primary consideration.

742. To facilitate coordination of the operations, the

combat zone is subdivided into sectors, the boundaries of which are extended to the rear to include initially the first two delaying positions, and later the final position in the commander's plan of action. In favorable terrain the width of sectors in delaying action may be taken as about double those suitable for defense.

A tactical unit is assigned to each sector and is given a combat mission. The strength and composition of each unit is determined by the assigned mission, the terrain, the width of the sector, and the nature of the hostile threat. Mutual support between adjacent units is coordinated by the next higher commander.

Decentralization of operations to combat team commanders will be frequent when operating on a broad front. Continuous liaison between adjacent combat teams, and between combat teams and the higher commander, must be maintained.

743. The defense is conducted in each sector by small units holding the natural strong points of the terrain and supporting each other by flanking fire. In close terrain or during periods of low visibility, close contact between adjacent units is maintained by combat patrols. Local reserves protect the flanks of forward defense areas and cover the withdrawal of forward elements.

744. *Artillery* in general support prepares a plan of interdiction fires covering principal hostile avenues of approach and is prepared to engage distant targets. It is employed to reinforce the artillery in direct support in accordance with the requirements of the situation. Special attention will be given to interdiction of hostile movements toward the flanks and rear. *Light artillery* will often be attached to the unit it supports.

745. *Engineers* are employed to construct a barrier zone of mines, obstacles, and demolitions in front of the first delaying position and in the area between suc-

cessive positions. Antitank units are attached to units covering the hostile avenues of approach. To protect an exposed flank, a mobile flank guard is detailed with engineers and antitank units attached.

746. Chemical troops may be employed to place barriers of persistent chemicals on the front and flanks of each position.

747. The *antiaircraft artillery* is employed primarily to protect the artillery, reserves, and critical defiles in rear from hostile air attack.

748. A mobile reserve, reinforced by tanks, artillery, antitank units, engineers, and chemical troops is prepared to move rapidly to counter mobile threats.

749. As in the defense of any position, an outpost, strong in automatic weapons, is deployed well in front of the delaying position to harass and delay the enemy's advance and to keep him in doubt as to its location. Artillery support for the outpost will be provided by units supporting the delaying position.

750. The greatest importance attaches to keeping the enemy in doubt as long as possible concerning the location of the successive delaying positions and the delaying nature of the operations being conducted.

751. In fighting a delaying action, some troops are disposed on the rear position to cover the withdrawal from the positions in front.

752. Timely measures are taken for reconnaissance and for preparation necessary for the occupation of the successive delaying positions in rear.

Provision is made for the establishment of wire communication from the higher commander to the sector commanders and to the senior artillery commander.

Of especial importance is efficient operation of the artillery wire net in order that the flexibility of artillery fire may be exploited to the maximum. Signal communication to distant or detached units is ordinarily limited to radio and messengers.

The wire systems of subordinate units are limited to essential lines. Full use is made of prearranged visual signals and of mounted and vehicular messengers.

753. The commander controls the operation by prescribing the time of withdrawal and the time by which each successive position is to be occupied. In open terrain, it is often better to make a timely and simultaneous withdrawal from each position. In close terrain or when a command is deployed over a wide front this may be impracticable, and the decision regarding the time of withdrawal is then left to subordinate commanders. The commander exercises control by prescribing a general terrain line to which units eventually will withdraw or in front of which the enemy will be held until a designated hour.

754. Whenever practicable, *withdrawal from a position* is effected under cover of darkness. If protracted resistance is necessary to accomplish this, measures are taken to extend the depth of the zone of resistance and to utilize to the maximum natural obstacles.

755. If the withdrawal must be made in daylight, artillery and other supporting weapons are disposed in depth. *Combat aviation and tanks* may be employed against those hostile elements which most seriously threaten the success of the operation. A daylight withdrawal may also be facilitated by organizing an intermediate delaying (covering) position to be occupied by reserves assigned to cover the withdrawal of troops in front (see par. 690). Subsequent withdrawal of the troops from the intermediate delaying position is in

turn covered by other troops on the next delaying position in rear. Retirement may thus be executed by the alternate withdrawal of successive echelons from one delaying position to the next.

The loss of a defended tactical locality to the enemy does not involve necessarily an early withdrawal along the whole front. Adjacent units should take advantage of such situations to punish an impetuous enemy by heavy flanking fire and by local counterattacks whenever conditions are favorable.