WAR DEPARTMENT
OFFICE OF THE ADJUTANT GENERAL

A MANUAL FOR COMMANDERS OF LARGE UNITS

(PROVISIONAL)

Volume 1
OPERATIONS

A MANUAL

FOR

COMMANDERS OF LARGE UNITS

(PROVISIONAL)

Volume 1
OPERATIONS

PREPARED
UNDER THE DIRECTION OF
THE CHIEF OF STAFF

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WAR DEPARTMENT,

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This provisional manual deals with the employment of large units in both open and stabilized warfare. It is assumed that the enemy is equal in intelligence to ourselves and that he is as well armed, trained, and supplied.

This manual is intended as a guide for commanders and staffs of divisions, corps, armies, and groups of armies, and for general headquarters. It contemplates the employment of forces varying in strength from a single division to the maximum mobilized man power of the Nation. Throughout the manual, the term "large unit" is applied to the division, corps, army, and group of armies.

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TABLE OF CONTENTS

		Paragraphs	Page
CHAPTER 1.	The commander and his staff	1–10	1
2.	General headquarters	11–19	7
3.	General combat provisions for large units	20–24	9
4.	The group of armies	25–29	13
5.	The army:		
	SECTION I. General	30–35	15
	II. The army in offensive battle	36–46	17
	III. The army in defensive battle	47–53	22
6.	The corps:		
	SECTION I. General	54–56	29
	II. The corps in offensive battle	57–63	31
	III. The corps in defensive battle	64–73	35
7.	The infantry division:		
	SECTION I. General	74–77	39
	II. The infantry division in offensive battle	78–85	41
	III. The infantry division in defensive battle	86–97	51
8.	The cavalry corps and the cavalry division:		
	SECTION I. The cavalry corps	98	59
	II. The cavalry division	99–110	59
9.	Special operations:		
	SECTION I. River lines	111–113	67
	II. Woods and villages	114–116	68
	III. Mountain country	117–118	69
	IV. During periods of limited vision	119–121	70
	V. Coast defense	122–127	71

APPENDIX

Tables showing composition and strength of large units 75

A MANUAL FOR COMMANDERS OF LARGE UNITS

CHAPTER 1

THE COMMANDER AND HIS STAFF

1. The commander.—Command has ever been the most important element in war. The commander makes the unit, whatever may be its size or strength. As is the commander, so is the unit. Success can be assured only through the skillful handling of troops. The commander must have a thorough comprehension of war and of the possibilities of offensive and defensive action. He must be able to make his ideas and conceptions permeate his command so thoroughly that every part of it will act in time of crisis, as it would act, if he were present with each particular unit. The commander of a large unit is the controlling and responsible head. He should impress himself upon his command by his ability, aptitude, accessibility, breadth of interest, experience, inflexibility of purpose, kindliness toward individuals, loyalty to superiors and subordinates, and devotion to cause and country. Above all, he should enjoy a reputation for success.

The commander should have three conceptions ever before him: the human nature of his war-making machine, the material conditions under which he is operating, and the reaction of the enemy. He should avoid harassing his troops through faulty staff management, by subjecting them to useless hardships, by neglect of their health and comfort, and by frittering away lives and strength in inconsequential actions.

2. Duties.—Wars are fought with men. The commander can not be too careful of the unit that the State has committed to his charge. He must pay the greatest attention to the health of his men, to the supply of food, clothing, and shelter, and to the provision for rest and comfort. His first object should be to secure the love and attachment of his men by his constant care for their well-being. The devotion that arises from this kind of attention knows no bounds and enables him to exact prodigies of valor on the day of battle.

Morale is created by superiority in position, weapons, equipment, marksmanship, discipline, and drill; by proper contacts among the officers and between the officers and their men; and

by the confidence of the troops in their chiefs. It is raised by good food, proper shelter, recreation, and rest. It is quickly lost if stabilized lines are held close to enemy lines on more commanding ground, so that the daily losses of the troops exceed those of the enemy. A reputation for failure in a leader destroys morale. The morale of a unit is that of its leader. It is not defeated until he is defeated.

Leaders inspire confidence in their subordinates primarily by their ability to gain material advantages over the enemy with the least losses. The presence of a commander with the troops in action, as often as possible, is essential to morale.

A commander must bear in mind the fact that his physical condition is the basis of his efficiency. It is his duty to the men under his command to conserve his own fitness by proper regard for food and rest, particularly in times of crisis. Neglect of this rule soon renders him unable to bring a normal mind to the solution of his problems, and reacts unfavorably on his whole command.

Combat preparation consists in developing efficiency, confidence, and coordination in the use of the personnel and material; a discipline which will insure cohesion and control under the varying conditions of march, bivouac, and battle; a sense of responsibility that will cause each individual to appreciate the necessity for his doing his particular task; a state of training that will prevent officers and men from disdaining the use of cover out of mere bravado or a feeling of shame; and a knowledge of all aids and devices that will minimize battle losses.

It is the duty of the commander to make full use of the aptitudes and capabilities of his subordinate commanders. To this end nothing is more helpful than personal acquaintance. A division commander should know at least all his field officers by name and character. The same principle applies, with appropriate modifications, to higher and lower commanders.

3. The staff.—The commander of a large unit is assisted by a general staff and by a special staff consisting of technical, administrative, and supply personnel.

The staff is an aid to command. Its purpose is to relieve the commander of details by providing the basic information and technical advice by which he may arrive at his decisions; by developing these decisions into adequate plans, translating plans into orders, and transmitting them to subordinate agencies; by insuring the execution of these orders by constructive inspection and observation for the commander; by keeping the commander

informed of everything he ought to know; by anticipating future needs and drafting tentative plans to meet them; and by supplementing the commander's efforts to secure unity of action throughout his command.

The staff has a duty, both to the commander and to subordinate commanders. A staff officer transmitting an order from his commander to a subordinate commander should, without disloyalty to his chief, place himself in the attitude, for the time being, of an aide or staff officer of the subordinate; and the subordinate himself should regard the staff officer as a member of his own staff for the occasion.

The general staff is a closely coordinated group of assistants to the commander. Its duties are to render professional aid and assistance to him; to prepare detailed instructions for the execution of his plans and to supervise their execution; and to act as his agent in harmonizing and coordinating the plans, duties, and operations of the various units and services of the command.

The chief of staff is the commander's principal adviser, assistant, and official representative. He aids the commander in supervising and coordinating the command and should enjoy his entire confidence. He transmits the will of the commander, and, in his absence or inaccessibility, acts in his name. He has powers of supervision and coordination from the commander adequate to insure continuity of control.

There are four assistant chiefs of staff, whose duty is to relieve the commander of detail. Each exercises, under control of the chief of staff, supervision within the field of his activities, in the name of the commander, and solely with a view to unity of control.

The personal aides of a general officer commanding a unit are a part of his staff, but are not included in the unit staff. Their duties are prescribed by the commander himself. One or more aides accompany him when he is absent from his command post. It is their duty to keep the chief of staff informed of the whereabouts of the commander, and of any important decisions that he makes while absent. With the approval of the commander, aides may be used as assistants in the general or special staff sections.

4. Tendency to expand.—In every headquarters there is a constant tendency to expand the functions of staff administration, multiply personnel, and accumulate records and office equipment. The commander must limit such expansion to an essential minimum and organize his headquarters so as to maintain its readiness for prompt movement.

5. Employment of the staff.—The commander must understand the duties, powers, and limitations of his staff. He himself has been selected for his task because of his high personal character, firm will power, and professional ability. He must imbue his staff with his ideas, his desires, his energy, and his methods. As he gives to his staff, so will he receive. He should encourage its members, in their capacity as advisers, to speak with frankness. He should make full use, after careful evaluation, of the advice of the members of his general and technical staff. He should make them use their minds for him; but they merely furnish him with material, often conflicting, upon which he must come to a decision.

A staff is not a legislative body whose decisions are binding upon the commander. It is an advising body, whose counsel may be taken or left, or taken in part. Many of the greatest decisions in war have been made contrary to the advice of staffs; and many happy decisions have come from suggestions of comparatively junior staff officers. If a commander permits others to decide for him, he abrogates his function and ceases to be a commander. The commander must himself make all important decisions. Command is his prerogative.

6. Estimate of the situation.—In no other activity does action depend so much on prediction as to what an opponent may do, as in war. Time and movement are constantly changing the situation. Over-assurance that they have divined the enemy's intentions is the besetting pitfall of commanders and staffs of higher units. It is so easy to make facts fit a theory that they are constantly in danger of overlooking the true significance of the facts. A proper evaluation of facts is the most difficult task that confronts a commander and his staff. They must be able to fit information, as it comes in, to the hypothesis which they have already formed; but they must have the open-mindedness to recognize a contradictory fact, and the moral courage to change their hypothesis, if the new facts warrant it.

Overestimation of the enemy's strength dismays commanders and troops. The combat value of units fluctuates in battle, which is more an affair of morale than of material and numbers. In every hard-fought battle, demoralization eventually comes to one or both sides. An able commander will detect it in the enemy, throw in his reserves, and win the victory. To act too soon invites disaster; to wait too long sacrifices the chance of victory.

7. Preparation and distribution of orders.—When a commander has made his decision, he should give it to his chief of

staff, with such instructions as will leave no doubt as to its meaning. The chief of staff is then responsible for the translation of this decision into such orders as will insure its execution. The staff ceases to be, for the time, an advising body, and becomes a working machine to carry out the decision of the commander in all its details. A good commander does not burden himself with the working out of details.

Pressure and skill must be used to issue orders quickly. Large unit commanders should determine by practice the time required for orders to reach the lowest elements of their respective commands. It will vary with the weather, terrain, hour of the day or night, and particular situations. Commanders should make it their constant study to reduce this scale of time, and they should ever bear in mind that orders given in violation of this scale will miscarry in whole or in part. Subordinates must be allowed the necessary time to make out their own orders and transmit them to lower units.

The time may be greatly shortened by the consistent practice of giving advance information to lower headquarters, in as full detail as circumstances permit, as soon as a decision is reached or an order is received from higher headquarters, without waiting to translate such decision or order into detailed instructions. Thus warned, each lower unit in turn can make more deliberate and effective preparation. It must be remembered, however, that warning orders increase the danger of leakage. Care must be observed to preserve secrecy.

8. Staff assistance in operations.—The commander should discuss freely with his staff officers, from time to time, the details of the orders which he gives for the conduct of an action, and should give them his views as fully as possible, stating the course to be pursued in all contingencies that may arise. He should send them to critical points to keep him promptly advised of what is taking place. In a great emergency, as when new dispositions have to be made on the instant, or it becomes necessary to reinforce one command by sending to its aid troops from another, and there is not time to communicate with headquarters, the staff officer present should explain the views of his commander to the commanders on the ground and urge immediate action without waiting for specific orders from the higher commander. The will of the commander when it is made known to the subordinate commander becomes an order to be carried out, not by the messenger who delivered it, but by the subordinate commander who receives it. Staff officers are aides, not

commanders. No part of the power to command should be delegated to them. They should be able to inform, but not to order, the local commander, whose responsibility for action is complete.

9. Conferences with subordinates.—Orders are always subject to misinterpretation and miscomprehension. For a large operation, written orders should always be supplemented by conferences of the group commander with army commanders; of the army commander with his corps commanders; of the corps commander with his division commanders; and of the division commander with his subordinate commanders. At these conferences, chiefs of staff and others concerned should be present. In calling conferences, commanders must be considerate of the time of subordinates, and careful in selecting the place of assembly, since these subordinates, each in turn, will desire to call conferences of their own subordinate commanders. Such a conference is not a "council of war," but a meeting of the chief with his lieutenants for a thorough understanding of the plan and not for the drafting of the plan. Each situation must be handled upon its own merits. Subordinates look to the directing head to state the purpose to be achieved, so that they may take effective measures to carry out what is expected of them. A common understanding among the higher commanders engaged in an operation is indispensable to success. The most cordial relations and thorough understanding should be maintained between neighboring commanders and staffs.

10. Execution of orders.—Orders must be carried out. The commander is responsible for the execution of his own orders. He is assisted by his staff officers, who act in the capacity of inspectors. It is most difficult to get lower commanders to think beyond their initial objectives. In the midst of a great operation and afterwards, a numbness and torpor come over the participants, which is manifested amongst the officers by a decline in initiative and a slowness in comprehending orders. The human and material world will conspire against the commander, and he will have no ally to sustain his own constancy. Campaigns and battles are inextricably associated with heat and cold, dust, rain, mud, gloom, and discouragement. When a commander has made a decision, he must carry it out and allow no difficulty to stop him. His staff must stand firmly behind him to help him meet his difficulties. He must keep himself informed of the progress of his units and overcome inertia and delay. He can not shift responsibility for failure.

CHAPTER 2

GENERAL HEADQUARTERS

11. Headquarters.—The headquarters of the field forces in a theater of war is a general headquarters. It comes into existence by order of the President.

12. The commander in chief.—A commander in chief exercises control over a theater of war, which may consist of one or more mutally dependent theaters of operations within easy communication with one another. He draws up and issues strategical plans in accordance with the general policies prescribed by the President. He specifies the personnel and supplies of all kinds required for his field forces, requests their allocation, and establishes policies and priorities for their distribution.

He acts as army commander when there is a single army, and as group commander when there is a single group, or he may assign these commands to another officer. No officer will act simultaneously as the commander of a large unit and as the commander of one of its component units.

13. Strategy.—Strategy is the especial province of the commander in chief. He designates the ends to be accomplished, allots the means, and assigns the tasks to subordinate commanders. From him must come the plans and impulses that guide and animate all below him. It is he who succeeds or fails in a campaign.

The commander in chief should know the personal characteristics of the leaders of the opposing forces. Strategy should not be based alone upon geographical features and upon the strength and position of the opposing forces. No sound strategical plan can be formed which ignores the personality of enemy leaders.

The commander in chief must foresee far in advance, and, from time to time, warn group and army commanders of his ultimate plans. While present plans and orders are being carried into effect, future projects must be foreshadowed, in order that means may be accumulated and installations changed to carry them out. Greater foresight and preparation are required for a retreat than for an advance. A retreat should be a preparation for a new offensive, not the culmination of disaster. The commander in chief should be one campaign ahead in his preliminary planning. He should take into his confidence the commanders

of groups of armies and of armies, from whom he should require preliminary studies and tentative plans. These studies and plans are invaluable to a commander in chief in coming to his decisions.

14. Concentration.—The concentration of the armies is based upon the strategic plan. The form of concentration depends upon how accurately the subsequent strategic maneuver may be forecast. When the situation is definitely known, the concentration is effected so that the forces may be launched without delay against their objectives. When the situation is not clear enough to justify a definite scheme of maneuver, general headquarters prepares a plan of concentration which will bring the forces into the concentration areas so disposed and grouped as to meet unforeseen enemy action.

15. Tactics.—The commander in chief is the master tactician. To adapt means to ends, to determine formations and procedure for offense and defense, and to prescribe the special training necessary to enable the troops to counter and overcome all obstacles, are, next to strategy, the highest functions of the commander in chief. Subordinate commanders make tactical plans and carry them into execution.

16. Personal contact.—It is not sufficient to publish tactical doctrines in orders. The true spirit must be conveyed by personal contact and persuasion. The commander in chief should know his group, army, corps, and even division commanders so well that he can foretell what they will do under given circumstances. Each commander should, in turn, be upon the closest terms with his subordinate commanders. He should know the exact capacity of every one of these subordinates and just where to place him to get from him his best service. By personal contact, down through the commanders of large units, the doctrines of the commander in chief must percolate.

17. Reserves.—The reserves at the disposal of a commander in chief consist of the general headquarters reserve and, in addition, such corps and divisions as may be held in strategical reserve. The general headquarters reserve is a reservoir of troops from which to reinforce subordinate units. It consists essentially of tanks, artillery, aviation, chemical troops, and engineers. Its strength and composition depend upon circumstances. The commander in chief allots units to groups of armies and to armies, or to the communications zone, as the situation demands. He uses his strategical reserve to influence the situ-

ation by maneuver or combat, or to reinforce those large units whose mission is of greatest importance or whose situation is critical.

18. Personnel of general headquarters.—A general headquarters operating in the home country or in contiguous territory is small in personnel. When it is operating beyond the sea, it is necessarily large, for it will then have to perform many of the duties which at home are performed by the War Department. At home, procurement of supplies is a function of the War Department; abroad, it may be largely in the hands of the commander in chief.

19. Supplies.—Whether in friendly or in enemy territory, the theater of operations must be drawn upon to the limit of its capacity for the supply of the military forces. Such utilization of local supplies should be carried out under a systematic and well-formulated plan with due regard to the needs of the local population. Just payments will be made to secure the active cooperation of inhabitants and encourage continued production of supplies.

CHAPTER 3

GENERAL COMBAT PROVISIONS FOR LARGE UNITS

20. The training of large units.—The object of the training of large units is to combine and coordinate the combat training of all the arms and services so as to develop in the larger units the cohesion and teamwork essential to efficient action.

The training of units larger than the division is essentially the training of commanders, staffs, and heads of services. It includes various kinds of exercises, either on the map or on the ground. Exercises may be carried on with or without troops. In time of peace, tactical instruction with troops actually present usually ceases with the division, the largest unit which it is practicable to assemble. For units larger than the division, tactical instruction is usually carried on by lectures, map problems, and by command and staff exercises. But when troops and ground are available, field maneuvers should be held for the simultaneous instruction of officers and troops in the units above a division. In all exercises, the superior unit commander controls and directs the exercises; commanders of units participating in the exercises command their units. Map and ground exercises, especially applicable to training larger units, are classified as map

problems, map maneuvers, field exercises, terrain exercises, field maneuvers, and command post exercises.

21. **Methods of action.**—The offensive means action to seek out and defeat the enemy. It implies advance and attack. The defensive differs from the offensive in that the defender awaits the first blow, while the attacker gives it. Once engaged, both sides may use advance and attack. The power of the defensive lies in position, in opportune action, in skill in counterattack. A large proportion of the decisive battles of history has been gained through the skillful use of the counterattack and the counteroffensive by numerically inferior forces in defensive battles. In defense, higher commanders must have reserves kept well in hand to meet unforeseen emergencies and for counteroffensive action. In offense and in counteroffense they should not hesitate to use their last reserve. In the offensive, the commander must focus his attention upon the objective; in the defensive, upon the point of greatest danger.

Over the greater part of fronts in contact, during the greater part of the time, both sides are on the defensive. In war the mental attitude is habitually that of offense; but the physical attitude is habitually that of defense. Offensive action is occasional, for brief intervals of time. Success comes from the ability of the commander to select the right time and the right place for offensive action.

22. **Offense.**—As long as the enemy is capable of offering a coordinated resistance, the attack itself should be a step-by-step forward movement from one good position to another. It is the duty of all commanders to exploit their successes to the utmost. A commander must see that his units do not get out of hand. He must send reinforcements through the breach, rather than check the advance of units where the going is easy. Troops generally do best when they are launched in an attack with distant objectives and are held continuously to their task until their offensive power is exhausted. When they have reached this condition, fresh troops should be at hand to give a new impetus to the offensive. When flanks can be reached, a skillful commander will maneuver the enemy out of his chosen position and attack him at a disadvantage.

The enemy's forward positions will usually be found on high ground. In approaching these positions, the offensive spirit prompts men, to their own disadvantage, to get close to the enemy, and thus to occupy low, flat, and even swampy regions completely dominated by high ground within the carefully

selected lines of an enemy on the defensive. The attackers push forward and occupy positions on the downward slopes, toward the enemy, where their communications are exposed and where there are few places for the installation of their guns and ammunition dumps without their presence being easily detected. The objectives to be sought should be commanding positions held by the enemy or within the enemy's lines. A strong defensive position held by the enemy is not often a good defensive position for troops operating frontally against it. The offensive may be quickly followed by the enemy's counteroffensive. To meet this counteroffensive, quick reorganization on good defensive positions is necessary. When, for any reason, the advance stops, the commander should immediately anticipate a counteroffensive by reorganizing his troops for defense, even though he expects soon to continue the offensive, or pass to a new offensive.

When the enemy becomes so disorganized as to be unable to offer further coordinated resistance, the commander accelerates progress by the assignment of zones and directions of advance, and by releasing to subordinate units the means necessary for their immediate reinforcement.

Forces that contemplate the offensive are careless and negligent in their organization for defense. Measures must be taken by commanders to counteract this natural tendency. No man's land should be an area between two good positions. If the enemy chooses to forsake his good position and come forward, he will place himself at a great disadvantage and incur greater losses than he will inflict. The relinquishment of bad ground for good, in selecting lines of defense, must not be influenced by sentiment against giving up any ground whatsoever to the enemy.

23. **Defense.**—It should be the aim of the commander of a defensive force to compel his adversary to attack him in a strong position where a repulse is reasonably sure. The elements of a good system of defense are an outpost zone with a good defensive line; an organized battle position at such a distance from the front line as to escape most of the enemy's preparation fire; and positions which may serve as a base of departure for counterattacks to restore the integrity of the battle position. The main defense is made, generally, on the main line of resistance of the battle position, at such a distance in rear that the enemy's light artillery can not fire effectively upon it from the same position from which it fires upon the outpost position. By this method, the enemy's assaults, his main blows, are absorbed in overcoming

the resistance of small detachments. In the outpost position there must be alert troops capable of giving warning and of retarding and breaking up the movements of the enemy. Defense on the battle position and counterattacks at the proper moment are most effective means of defeating a powerful attack. But this procedure should not be made an invariable or even a general rule. It should be varied by the most obstinate defense of the outpost zone. Commanders must know the enemy and be able to play upon his characteristics. Troops that shoot well and are supported by good artillery are capable of an effective defense of any well-selected position.

An active defense should be conducted with the minimum of forces, so that the command may pass to the offensive with the maximum of means. Troops should not be relieved while an action is going on. The combat must be sustained by troops already in line, in order that adequate reserves may be built up and maintained. Fresh troops should be held in reserve, ready for counterattack, or to go into action where circumstances absolutely require them to do so. Battles are gained by the use of reserves.

Withdrawals and retirements should be from one defensive position to another. It is far better to fall back far enough to get good ground than to retain disadvantageous ground close to a strong position of the enemy.

The commander's controlling motive in every retrograde movement must be to retain his liberty of action by preserving his line of communications. Above all, he must avoid being besieged. The commander who gives up his line of communications and submits to a siege invites disaster. To preserve his liberty of action, he may find it necessary to sacrifice detachments by requiring them to hold certain places at all costs; but he must keep his command, as a whole, free to maneuver, with a view to its eventual employment on the offensive. A nation's capital and many of its important cities may fall; but, if its forces remain in the field, they may be victorious in the end.

24. Terrain features.—In selecting areas for offensive operations, a commander should choose open, gently rolling ground, which will afford some concealment to advancing troops and permit the easiest and most effective support of fire from all types of weapons. He should avoid large woods and villages, which constitute excellent supporting points for the defense and afford concealment from both ground and aerial observation. He should choose a region where there are valleys perpendicular to

his front, as they form favorable routes for penetration or advance. The mutual influence of the opposite slopes on each other and the lay of the communications usually make it necessary to place a valley, used as a route of advance or action, wholly within the zone of a single large unit. For defense, a commander should choose terrain where the large valleys or ravines run parallel to his front, as the ridges form natural lines of resistance. The streams parallel to his front are the most effective obstacles to the attack of tanks or other mechanized forces.

CHAPTER 4

THE GROUP OF ARMIES

25. Unity of command.—To secure unity of command, two or more armies operating upon the same front must be placed under a higher commander, the army group commander. Unity of command, decentralization of operation, and coordination of effort are his guiding principles. The commander in chief of the forces in the field acts as group commander, when the number of armies is small; but, when the number of armies is so large as to render difficult direct control by G. H. Q., two or more groups must be formed. The commander of each group directs the operations of his group under the instructions of G. H. Q.

When two or more armies on contiguous fronts are engaged in a joint operation, either of attack or defense, they should be placed in the same group, for the period of the operation If a serious situation develops at the junction of two groups of armies, unity of command should be preserved by a regrouping, so that one group commander will be responsible on the menaced front.

For a specific operation or to meet a great emergency, the commander in chief may desire to make a regrouping of certain armies under his own direct and temporary control. When he does, he should do it frankly. It is far better, if a suitable officer of adequate rank is available, to assign him to such a command.

26. Troops and duties.—The group commander has no group troops, but large reserves may be placed at his disposal for particular operations. In accordance with missions assigned to him by G. H. Q., the group commander draws up tactical plans, issues orders to armies, special troops, and reserves under his command, apportions to the armies the forces at his disposal, allots zones of action or sectors to the armies, and coordinates their movements and efforts. He assigns tasks to his armies,

leaving the details of execution to the army commanders. His staff should consist of a small general staff group, an adjutant general's section, representatives of the services, and only such personnel and material as will enable his headquarters to operate.

The group of armies is a tactical unit. The commander exercises territorial responsibilities and has supply, administrative, and strategical functions only when his headquarters is the headquarters of a theater of operations. He assures the cooperation of armies, coordinates their efforts, and distributes the means that have been allotted to him by higher authority. The functions of the army group headquarters, or of an army headquarters, when acting as headquarters of a theater of war, are discussed in Chapter 2.

The group headquarters may control directly the distant air reconnaissance or it may assign this reconnaissance to the armies. Distant cavalry reconnaissance by several cavalry divisions under one commander is also conducted under the direct control of the group of armies.

27. **Offense.**—On the offensive, the group commander assigns to each army a direction of advance or a zone of action, and an objective or successive fronts. Throughout the march toward the enemy, the establishment of contact and engagement, and the actual attack, the army group commander requires each army to maintain its direction and to preserve contact with the armies on its flanks. During the approach marches, he establishes the alignment of the armies in the group by timely march directives. After he has made contact with the enemy and has decided on the plan of attack, the army group commander apportions his troops so as to give all possible strength to the main blow. He must at all times foresee the possible extension or contraction of his command and zone of action, and must have plans prepared for these contingencies.

28. **Defense.**—On the defensive, the group commander assigns sectors to the armies and indicates the general nature of the defense, and the conditions under which withdrawal may be effected or a counteroffensive begun. On both the offensive and the defensive, he prescribes the limit and nature of air reconnaissance, when distant air reconnaissance is conducted by the armies. When the group controls distant air reconnaissance, he designates the line to which the armies are responsible for their air reconnaissance. To carry out tactical and strategical plans, the army group commander assigns missions and appor-

tions troops to his armies and coordinates their efforts and movements. On the defensive, he may form a reserve in one of two ways. Either he may place an army in second line to meet a possible movement of the enemy against a flank, or he may take forces from various areas in the theater of operations. He plans well in advance for the employment of these reserves and places them where he can use them to carry out his plan of action.

29. Forming new armies.—The group of armies is generally disposed with armies abreast. Occasionally, the tactical situation may favor the placing of an army in second line, either in rear of an exposed flank or behind a long continuous front. If the situation indicates the probable need of an additional army, in front line or in strategic reserve, the commander in chief assigns a commander and makes available to him suitable personnel for the staff and service heads at his headquarters. When occasion arises to employ the army, it is created by adding the necessary troops and services to this nucleus.

CHAPTER 5

THE ARMY

		Paragraphs
SECTION I.	General	30–35
II.	The army in offensive battle	36–46
III.	The army in defensive battle	47–53

SECTION I

GENERAL

30. Organization and functions.—The army is the largest self-contained unit. It consists of a commander with a staff, specialized army troops and services, and two or more army corps. To these may be added a special assignment of G. H. Q. aviation, G. H. Q. reserve artillery, cavalry divisions, and other auxiliary troops, varying in number and composition according to the task assigned. The army may act independently or it may form a part of a group of armies. The army commander's relations with his subordinates have many ramifications. These subordinates should be a band of brothers with a mutual understanding. It depends upon the commander to make them so.

The army is the fundamental unit of strategical maneuver. It has territorial, tactical, administrative, and supply functions.

31. The army commander.—The army commander plans and carries out the broader phases of tactical operations necessary to execute the strategical mission assigned him by the commander in chief. He initiates operations by giving orders to the commanders of corps and other large units directly under his command and to the chiefs of army services. The army commander draws up tactical and administrative plans for the employment of the army, under instructions from higher authority; he issues orders to the corps and other units under his control; he allots divisions and special troops to the corps based on the tactical and administrative plans; and he coordinates the efforts of the corps and of the army troops.

When a general engagement has begun, the army commander may influence it by the use of his tanks and his air forces, by his control of the army artillery, by his power of coordinating the artillery of the corps, and by the use of his reserves. He retains direct control of engineer, medical, and other administrative and supply troops, or allots them to corps and divisions as the situation demands.

32. Tanks.—The army tank commander prescribes, under the direction of the army commander, the distribution of tank units to the corps, and exercises command of those retained under army control. He allots heavy tanks to corps, but he may hold some tanks in the army reserve for use in the later phases of the action.

33. Aviation.—The army commander ordinarily controls combat aviation assigned or attached to the army. He attaches additional aviation to the corps as the situation requires. Attack aviation should be concentrated and used against enemy troops in the same manner as machine guns and artillery. The army chief of aviation commands all air units under army control, and coordinates, under the direction of the army commander, their action with one another and with the air units of the corps. He attends, in particular, to distant reconnaissance and to the concentration of the air forces for important missions.

34. Artillery.—The army commander determines whether there will be an artillery preparation and its kind He takes into consideration the question of tactical surprise, knowledge of the enemy's defensive organization, and the ammunition supply. He controls harassing and interdiction fire He determines the length of the general counterpreparation fire and the times when it shall be fired. The army chief of artillery directs, for the army commander, the allotment of army and G. H. Q. reserve artillery to the corps; and he coordinates the action of the artillery of the

corps with each other and with the army artillery. He exercises command of artillery kept under army control. Ordinarily the army controls the heavier calibers of artillery and assigns the rest of the artillery to corps.

35. Reserves.—The army ordinarily holds one or more divisions in the army reserve. It may send the artillery of reserve divisions to reinforce the divisions in line. On the offensive, corps are not held in army reserve, but their entry into line may be delayed to meet the development of the tactical plan. A menace of attack often exercises a more decisive influence than an attack itself In a passive defense the corps are usually placed abreast

In an active defense, where the army commander contemplates a general counteroffensive, it may be advantageous to hold a corps or a number of divisions in reserve. He orders a general counteroffensive only in accordance with plans from higher authority. Subordinate commanders order counterattacks at the earliest practicable time, generally, in accordance with previously prepared plans, wherever favorable opportunities for such counterattacks may be foreseen

SECTION II

THE ARMY IN OFFENSIVE BATTLE

36. The march to battle.—The army commander receives from higher authority a general direction of advance. To keep the army constantly on this direction, he assigns directions of advance and zones of action to the corps. If, during the operation, certain corps are diverted from their assigned axes, he brings them back gradually or adopts other suitable measures, such as inserting on the front a second-line corps, to maintain the mass of the army on its general direction.

During the advance on the enemy, the army commander may place all of his corps abreast or he may place one or more corps in the second line. He may hold out separate divisions or other units for the second line or to form a reserve for the army. The formation will depend upon the strategic maneuver which the commander in chief expects to execute after contact is made with the enemy. Corps abreast facilitate entry into action to the front. Corps in column facilitate entry into action to the flank. The army commander assigns, to the reserve divisions and to army troops, positions in the march formation to facilitate their probable future employment.

37. **Dispositions.**—At a distance from the enemy, the army commander may dispose his army widely and deeply. Such a disposition is best adapted to changes in direction, to enveloping maneuver, and to flank protection, and permits the full use of the road and railway nets and of the camping and billeting facilities in the army zone of action. The disposition will generally involve placing in front line one or more corps and in second line other corps with army troops to be used as reserves or to take a special part in the operation. Where the army is a flank army or is acting alone, the disposition should be such as to permit an extension of the front and protection of the exposed flanks. The initial disposition of the army should conform to the projected maneuver.

As the army approaches the enemy, it must increase its preparation for action. With only such delay as the distance from the enemy justifies, the army commander must place the elements of his command so that he can use them readily in a combined operation. He must give to the most advanced units missions to secure the army until its deployment is complete. As the distance from the enemy decreases, the commander contracts his dispositions, especially in depth, so that the more distant units may enter the action promptly. When battle appears imminent, he moves his army so as to secure for it the choice of the field of battle.

38. **Establishment of contact.**—By suitable use of his aviation and cavalry, the army commander strives to foresee where he will meet the enemy and where he will give battle. The army observation aviation conducts distant reconnaissance. The cavalry, operating nearer to the main bodies, completes the reconnaissance of the aviation, determines the general outline of the enemy's forces, and maintains contact with them. The army commander directs the air combat against the enemy air forces. From the first contact, the army pursuit units seek to secure freedom of action for our own aviation and neutralize that of the enemy.

Contact is established progressively. The cavalry determines the general outline of the enemy. It seeks its contact far enough to the front to allow the army to deploy properly for battle. The distance should be such as to provide at least two days for such deployment. To perform this mission, the cavalry is sometimes reinforced by detachments of all arms. The contact made by the cavalry is more solidly established by the advance guards of front-line corps. These advance guards first support and then

relieve the cavalry. They drive in the resistance which the cavalry has been unable to overcome or stop the advanced enemy elements not held up by the cavalry. If the enemy is in position, contact is fully established when the line is determined upon which the enemy is offering a solidly organized resistance. If the enemy is in motion, contact is established not only by determining the front on which these forces are moving, but also by directing and maintaining elements against that front, to form a protective line behind which the main bodies can make their dispositions for action.

39. Frontages.—The depth to which an offensive can penetrate varies directly with the frontage on which an adequate offensive can be launched. The army commander, therefore, determines the initial frontage of attack necessary to attain the objectives. He divides the front of attack among his corps and assigns to each corps its mission. As a general rule, he will assign to corps narrower frontages where the effort to be exerted is greater. They can then push their effort to greater depths. If the front of the advancing elements narrows, the range of artillery permits the enemy to effect heavy concentrations under which the attack weakens and may halt. The army commander, therefore, provides for reinforcements and lateral actions to maintain the front of attack of the army at least equal to the frontage of departure.

40. Engaging the enemy.—Engaging the enemy forms the first phase of the battle. During the establishment of contact, the commanders of corps in the front line reinforce their advance guards. They now take control of the fight in their respective zones of action, and direct the deployment of their corps. They bring the action of first-line divisions to bear on selected localities or along the whole corps front. If this action does not suffice to overcome local enemy resistance, it should furnish definite information of the enemy dispositions and permit the formation of a solid front on which the army may deploy. On a stabilized front, where opposing forces are in contact, it may sometimes be necessary to undertake preliminary operations to improve the conditions under which the attack is to be launched. The army commander personally follows the action of the corps, and from the beginning prescribes the points whose possession is necessary for the deployment of the army. When necessary, he uses the army artillery.

41. Conduct of the attack.—Establishing contact and engaging the enemy permit the army commander to decide on

his plan of action and complete the deployment of his army. Acting on information received, he has reinforced certain first-line corps. He next arranges for the employment of his artillery. He places at the disposal of corps commanders part of his reserve of artillery and assigns missions to the army artillery. He then completes his dispositions. He inserts in the first line, corps heretofore in second line, and, after weighing the requirements of second-line elements, completes the reinforcing of corps. He prescribes the positions of the army reserves He supervises the management of the army rear area, arranges for the operation of the various services, and has ammunition and the necessary material brought forward. The army commander takes the foregoing measures to insure the prompt employment of the entire power of the army He seeks to organize an attack which he will push with all the power at his disposal in a direction where success can yield decisive results.

The attack should be a surprise. To obtain surprise, secrecy of preparation is essential. A short artillery preparation, or, if the attacker is strong in artillery, tanks, and aviation, its omission altogether helps to insure secrecy. The attack should always be launched under the protection of the entire artillery, whose fire should be extended and supplemented by bombardment and attack aviation available and by reserve machine guns. In its advance, the infantry, preceded by tanks and smoke, endeavors to overcome the successive enemy lines of resistance, disrupt his defensive organization in a minimum of time, and disorganize his artillery system. The further the advance is pushed, the greater are the difficulties to be overcome by the fighting units. Communication is more difficult, and team play among the different arms is less close. It is then that the initiative of subordinate commanders, properly informed in advance of the general plan and determined to carry out their mission, will find full field of action.

The commander may make other attacks on the front. They form part of the structure of the main attack and support it. No distinction in execution is made between these different attacks They must all be pushed to a finish without thought of alignment with one another. They differ only in the strength of the forces employed and in the extent of front assigned to each. Each element must penetrate independently and, by overcoming resistance in its front, help neighboring units to advance. When the battle is protracted, the army commander may find it neces-

sary to organize several important attacks to be launched successively on different parts of the front.

42. Commander's influence.—Throughout the battle the army commander must furnish impetus to the attack. He uses the army artillery to extend the action of the corps and division artillery; he employs his attached attack and bombardment aviation; and finally, and above all, he brings into play his reserves. He advances his reserves in time to use them in the area in which he seeks decisive results. As he sends in reserves, he endeavors to form other reserves. But he should not hesitate to throw into the battle his last reserves to gain a victory.

Thus the army commander himself conducts the battle, by constantly assuring coordination of the efforts of his subordinates whom he has already informed of the general plan. He gives to the operation that unity of direction so indispensable to success, and he impresses his own determination on its execution.

43. Attack of a fortified position.—When the position to be attacked has been strongly fortified and organized for defense, the attack meets difficulties which require special measures. In establishing contact, the advance guards act prudently to avoid a premature engagement of the main body. The advance is generally made at night to avoid exposing the troops to aerial observation and interdiction fire. The preparation of the attack requires a mass of powerful, well-supplied artillery, which must be placed in position properly and have its fire carefully prepared. This artillery opens the way for the infantry by a preparation to shatter the enemy's morale, disorganize his system of command, destroy his material obstacles, and neutralize his fire. The army commander prescribes the principal features and the duration of this preparation. He distributes to corps heavy tanks to overcome important obstacles that can not be destroyed during the artillery preparation. Surprise plays a large part in success. Even when a long artillery preparation is necessary, surprise should be sought by a judicious selection of the exact hour of attack. For the attack, the army commander issues detailed, precise orders which assure close coordination of effort, prescribe special measures for holding the ground gained, and make definite provisions for exploitation.

44. Attack on a stabilized front.—On a stabilized front where close contact has long been established, the offensive battle generally opens with the attack, without preliminary maneuver. An exact knowledge of enemy dispositions, and the protection

afforded by our front, permit preparations for the attack to begin well in advance. To give the advantage of surprise, these preparations are made in secret. Often the battle against a stabilized front must include the organization of several successive attacks. These must shake and pierce the enemy front until a last push definitely breaks it.

45. **Repulse.**—When the battle ends in a check to the assault, the army commander at once restricts the adverse effects of the check by taking firm possession of the ground. Under the protection of the fresher troops and of the artillery, he reforms his army and promptly reorganizes units whose losses require it. He completes his ammunition supply and replacements so that he may soon resume the offensive.

46. **Exploitation of success.**—Undisputed possession of the enemy's position should not mark the end of the offensive battle. Immediate and intensive exploitation of the advantage gained is necessary to complete the enemy's disorganization and prevent his reforming his forces. For this exploitation, all first-line troops fit to fight, and the cavalry, continue to press forward, preceded by the aviation. Their first duty is to keep contact with the enemy. The cavalry operates, where possible, in the gaps or on the wings of the enemy's front, and attempts to get across his lines of retreat. The combat aviation operates against the enemy's lines of retreat and endeavors to reach columns and trains to impede their withdrawal. It also attacks the enemy elements, still effective, in rear of the fighting line. These it takes under low-altitude machine-gun and bomb fire and tries to disperse them.

If the enemy succeeds in forming on a new position, the reconnaissance of this position is made without delay. The army commander, who should already have begun advancing his troops and material, redistributes them for the new attack, which he organizes as quickly as possible. At the same time he reconstitutes his reserves.

SECTION III

THE ARMY IN DEFENSIVE BATTLE

47. **Organization of the defense.**—The power of the defense rests on a systematic coordination of the defensive fire of all arms, a correct organization of the ground, and the timely use of reserves. By these means, an army commander, who has a clearly thought-out plan and a fixed determination, can successfully resist a stronger assailant.

The army commander formulates his plan of defense and promulgates it in field orders. He gives his corps commanders his estimate of the situation, and indicates his general plan of defense against any of the most probable enemy attacks. Under conditions imposed by the mission and situation, he selects the main line of resistance of the first battle position so as to utilize best the terrain of the army zone of action. He places continuous zones of fire and obstacles in front of the line of resistance so as to hold up the attack and prevent infiltration. He organizes the interior of the position so as to insure the reestablishment of a defensive barrier against elements which may penetrate the main line of resistance.

The corps commanders distribute their forces and combine their various kinds of defensive fire in order to preserve the integrity of the battle position and to regain parts of it temporarily lost. The defense of the main battle position is essentially their mission and they should be prepared to use all means at their disposal to accomplish it.

The outpost position, well in front of the line of resistance of the battle position, affords the army time to prepare for battle and screens the battle position from enemy ground observation and reconnaissance. It takes up the first shock of the enemy's assault troops and protects the battle position from the enemy's nfantry weapons.

The army commander carries out defensive preparations under the protection of the outpost and the artillery. Meanwhile, he uses his observation aviation to ascertain the enemy's probable intentions. He directs its reconnaissances methodically and takes precautionary measures to protect it from the enemy pursuit aviation which may be assembling preparatory to the attack. Finally, he seeks to thwart the enemy plans by destruction, harassing, and interdiction fire and by aerial attack.

To be prepared for any breakthrough of the main line of resistance of the first battle position, the army commander lays out in rear of it successive battle positions, sufficiently distant from one another, that no rear position can be taken under the enemy preparation fire until the position in front of it has been captured. He organizes them in a manner similar to the first battle position.

He may construct switch positions, laid out transversely and resting on the line of resistance of the first battle position and on successive positions, to limit penetrations, to maintain the continuity of the front, and to furnish bases of departure for

counterattacks. He should take special precautions that these positions do not hinder the movements of reserves. The army commander will find that successive positions will afford him ability to maneuver. It is of first importance that he cause each man, including himself, to know his post and his part in the defense and be confirmed in this knowledge by rehearsal. He should avoid changes of defensive dispositions immediately before an attack, because of their confusing and demoralizing effect.

Distance from the enemy may require him to have the cavalry and special detachments maintain contact in front of the line of outposts. Before battle, he should echelon his units in depth and protect them by outposts behind which they may rest and perform necessary labor. On the outpost position, he should place only the forces to observe and to perform the other missions assigned. He places the principal elements of first-line corps in the first battle position, or immediately in rear of it, where they can opportunely occupy the positions in which they are to fight.

A disposition with corps abreast favors defense and the exercise of command. For the purpose of maneuver, especially if he contemplates passing from the defensive to the offensive, the army commander will do well to hold an army corps in reserve.

He assigns sectors to the army corps in accordance with their missions, the natural divisions of terrain, the communications available, and the probable direction of the enemy's attack. He prescribes measures of liaison between army corps as well as with the armies on his flanks. When the army is itself a flank army, he takes measures to protect his flank by fortifications and reserves.

In the defensive battle, he should see that all troops are prepared to take their part in establishing a continuous line of fire, to thicken the fire, or to reestablish its continuity, first at the forward edge of the battle position, and then, if need be, within it. He should, therefore, dispose his troops in depth, a disposition which will also decrease their vulnerability and favor the launching of counterattacks. He may direct small garrisons to occupy critical points in rear of the battle position. He should dispose his reserves in rear of the first battle position, so as to permit their timely use in maintaining its integrity.

The commanders of large units in reserve reconnoiter to determine the employment of their units, and issue the necessary instructions for the performance of work assigned to their troops.

The army commander should so echelon his artillery in depth that its fire effect may be applied continuously throughout the operation. He should dispose it behind the main battle position so as to attack the assembly areas and the line of departure of the enemy attacking elements (1,500 to 2,000 yards beyond his outpost position), as well as the outpost position itself and the terrain within his battle position. He may push forward temporarily some batteries to deliver distant interdiction and special flanking fire. He may place, provisionally, the artillery of his reserve in the successive positions organized in rear of the main battle position.

The chief of artillery of the army makes recommendations to the army commander for the general use of the artillery. He gives the necessary orders to elements of the army artillery held at his disposal.

48. Conduct of the defense.—By complete preparation the army commander develops the defensive strength of his army and its capacity for prolonged resistance. During the course of the battle he influences the action by the direction of the fire of his artillery and by the use of his reserves. Throughout the battle, he should impress all ranks with his determination to win the fight in the first battle position.

When information indicates that the enemy is preparing an attack, the army commander orders powerful interdiction fire to strike the enemy by surprise on his roads and approaches before he can form for attack. When the attack is imminent, the army commander orders counterpreparation fire to disorganize the enemy's attack before it can get under way. He places fire upon the enemy infantry and artillery as well as upon the principal known centers of the enemy command system, such as command posts, observation posts, and communication centrals. He may continue, at the same time, interdiction fire. Since interdiction and counterpreparation may involve a large expenditure of ammunition, he fixes the duration of this fire to conform to his supply, and prescribes the conditions under which corps and division commanders may order it.

If, notwithstanding the counterpreparation, the enemy launches his attack, the army commander delivers defensive fire to stop the enemy advance by breaking up the attack in its initial phases. He places fire first upon the outpost area, then in

front of the line of resistance of the battle position, and, finally, within that line wherever the enemy has penetrated. With this fire he may advantageously combine counterbattery fire, and interdiction fire on routes by which the enemy may reinforce the attack. But the all important targets for the artillery are the enemy tanks and infantry, which the artillery seeks to crush.

Combined with this defensive fire in front of the organized positions of the defense are bands of fire of the automatic infantry weapons. If the enemy breaks through the obstacles and the defensive fire, the infantry fights at close quarters with fire and with the bayonet.

Counterattack regains lost ground. First-line units make the first counterattacks before the enemy has solidly established himself. The division commanders place elements designated to make counterattacks in favorable positions for executing such missions. They anticipate the different situations which may arise and plan the actions of counterattacking units accordingly. The deeper the penetration of the line of resistance the more extensive is the counterattack. Division and corps commanders organize and launch counterattacks speedily, but coordination must not be sacrificed for speed. Large counterattacks are normally executed by troops in reserve which have previously been placed in position, have had the benefit of an artillery preparation, and are preferably reinforced with tanks. The principles of offensive action govern the conduct and exploitation of such attacks.

If the enemy attack involves the front of several army corps, the army commander himself must reestablish his line, by giving his orders directly to his reserves and by coordinating the fire and action of the large units involved. He causes the troops engaged, while awaiting the launching of the counterattacks, to hold their ground tenaciously, to cling to the defensive lines remaining intact, and to build up a continuous line of fire.

49. The counteroffensive.—When defense is sound and well designed, the advantage of surprise is in favor of the defense. Defense should be a condition of restrained activity in preparation for a counteroffensive. If a defensive position has been so well chosen that it can not be turned and must be broken before the enemy can reach his objective, the advantages of dexterity pass to the defensive. The danger of the defensive is that it may be so prolonged that the commander and his subordinates become fixed in a defensive attitude of mind which renders them incapable of passing quickly to the offensive when the opportunity comes.

A successful defense depends upon the preservation of the offensive spirit, which should manifest itself by counterattacks; but all counterattacks should be mere preliminaries to the counteroffensive ordered at the opportune moment. While on the defensive, the army commander must prepare everything for an overwhelming counteroffensive. He should issue warning instructions well in advance, and be on the lookout for the proper moment to launch it. He has chosen his own ground for a trial of strength. His troops are protected on familiar ground, while the enemy is exposed on unfamiliar ground. Following a serious check to the enemy and in execution of a maneuver prepared in advance, the army commander should pass speedily to the offensive. He begins the counteroffensive with the troops in action, and by using reserves of all arms, which he carefully places in position, and to which he judiciously assigns zones of action and objectives. All of the artillery supports the launching of the counteroffensive.

50. Withdrawal from action.—It may be that the fortune of war favors the enemy. When it is no longer possible to continue the struggle on a solid front, the army commander must withdraw his forces to a position sufficiently distant from the enemy to permit reorganization and reinforcement. He takes advantage of darkness to move to the rear, unseen by enemy air reconnaissance. In the withdrawal, he takes special pains to have flank protection and liaison with neighboring units.

He specifies the direction of retirement, allots zones and, if necessary, routes, and decides on the conditions of execution of the movement. He prescribes measures to alleviate the hardships of the retirement and to supply the troops. He regulates the withdrawal of the aviation in such a way as to protect its ground installations and at the same time assure its continued participation in the action. He requires all available combat aviation units to delay the advance of the enemy. In that undertaking, appropriate commanders may require the aircraft to execute attack missions at low altitudes. He causes demolitions to be made along the routes of the enemy's advance to delay his march and interfere with his supply. He specifies a line on which the army corps shall establish their rear guards to protect the movements of their main bodies. He selects this line at such a distance from the enemy that the rear guards can occupy a position and prepare defensive fire before being attacked. The cavalry, the infantry units, and especially the artillery still intact

and available for his use, are immediately placed on the line of rear guards to organize that line.

51. Reliefs.—If no crisis is at hand, the army commander sees that units engaged in a prolonged defensive battle are withdrawn before they are completely worn out. He may then use them again in the battle after a rest in rear areas. He prepares in advance for every relief by detailed orders. He uses well-considered measures, not only to protect the troops from useless hardships and losses, but also to preserve the continuity of the front. He sees that every relief is preceded by reconnaissance and by consultations between the staffs and the units concerned. His orders for relief clearly specify the conditions under which the commanders of relieving units assume command of the front assigned them.

52. Retreat.—The army commander covers his retirement by delaying actions. He carries out these actions by placing successive echelons of troops in positions beforehand, each of which falls back on the echelon in rear after the completion of its mission. He uses artillery, cavalry, and aviation as the principal elements of maneuver in retreat. He breaks off combat at night.

He combines delaying actions with destruction of the communications abandoned to the enemy. He orders his demolitions in accordance with instructions from the commander in chief. He generally makes them along a front and throughout a depth which will completely deny to the enemy the use of the roads, railroads, canals, or landing fields essential to his advance. The army engineer prepares a plan of demolition to be put into effect under various assumptions. Some demolitions will be completely prepared and equipped with explosives; others will be partly prepared; and still others will merely be planned. Though the army commander normally orders the execution of these demolitions, he may delegate this authority to the commanders of corps and divisions, after prescribing the conditions under which they may be executed.

53. Stabilization.—There may be periods when the mission of the army is simply to hold a front in contact with the enemy. During such periods the army commander organizes and strengthens the defense of his sector. Parts of it he may give a defensive strength comparable to that of a permanently fortified front. The preparation for defensive action and the conduct of the defense conform to the characteristics of stabilization. The army commander prepares his field orders in minute detail. He may reduce the troops in the various positions as the organiza-

tion of the ground improves. He may reduce them to a minimum if the reinforcements required are foreseen and an effective plan for their employment has been prepared. He develops the rear area of the army to facilitate movement and to assure the supply of the maximum force likely to be used. He employs all the means at his disposal to uncover the offensive plans of the enemy. Throughout the period of stabilization, he should bear in mind the eventual resumption of offensive operations, and should keep his troops fit for offensive action.

CHAPTER 6

THE CORPS

	Paragraphs
SECTION I. General	54–56
II. The corps in offensive battle	57–63
III. The corps in defensive battle	64–73

SECTION I

GENERAL

54. Organization and functions.—The corps is primarily a tactical unit of execution and maneuver. It can engage on an extended front and can carry on a battle until a decision is reached. It normally has two to four divisions, but the number during actual operations may be greater. The successive phases of the combat may result in changes in the number and positions of reserve divisions, and in the allotment of divisions and special troops to corps. In actions of long duration, the divisional units are relieved by fresh units; but the corps remains until a decision is reached or the strategical plan is changed. It has an organization so flexible that it can absorb and utilize reinforcing units, or form part of a higher unit.

Except when the corps is acting independently, or when administrative and supply functions have been delegated to it by the army, the corps has administrative and supply functions for the corps troops only. The general principles for the army apply to the corps when the corps is acting alone. When the corps is a part of an army, its operations are influenced by many supply and logistic considerations that are above the immediate responsibility of the corps commander.

55. Plans and orders.—The corps commander draws up tactical plans for the employment of the corps, under instructions of

the army; he issues orders to divisions and other units under his control; he allots artillery and special troops to divisions based on the tactical plan; and he coordinates the efforts of divisions and of the corps troops. He superintends the relief of divisions by reserve divisions. He prepares plans for the use of the reserve in the various contingencies that may arise in battle. Counterattacks of the corps reserve are launched under his orders.

To initiate an operation, the corps commander gives his orders to his division commanders, to the commanders of the nondivisional units, and to his chiefs of services. He is responsible for the plan and the coordination of the parts to be taken by the different elements of the corps, but he should leave the details of execution to subordinate commanders. During the battle he keeps in touch with the action of the front-line divisions, and influences the combat through the control of his corps artillery, by coordinating the action of all the air units in the corps, and by the use of corps reserves.

56. Artillery.—The corps commander orders the artillery preparation as directed by the army. He influences this preparation along the corps front by the allotment of ammunition and the coordination of corps and divisional artillery missions. Corps headquarters is the agency of control of counterbattery work. It may use the artillery of front-line divisions to supplement the corps artillery for this purpose.

Ordinarily all 75-millimeter guns, in addition to divisional artillery, are allotted to front-line divisions; but the corps may hold some light artillery under its control. It may attach additional 155-millimeter howitzers to front-line divisions. It ordinarily retains control of some 155-millimeter howitzers and all long-range artillery. The corps controls interdiction and harassing fire by assigning missions and by allotting ammunition to divisions and to the corps artillery. The corps commander orders counterpreparation fire pursuant to instructions from the army. Subordinate commanders are authorized to order local counterpreparation fire. The corps chief of artillery provides for the distribution of the corps artillery and the reinforcing artillery; he coordinates the action of all artillery within the corps, including the artillery of the divisions; and he is responsible for the corps artillery ammunition supply.

Corps and army commanders should spare no efforts to secure to each division the support of its own artillery brigade on the day of battle. No division can do justice to itself in action without the support of its own guns.

SECTION II

THE CORPS IN OFFENSIVE BATTLE

57. General.—The discussion that follows treats of the corps in battle as part of an army, when it is employed for the accomplishment of missions within a zone of action that is designated by the army commander. Aside from the requirements and limitations imposed by army orders, the action of the corps in battle is influenced by what is accomplished by units in adjacent zones of action.

58. The march to battle.—At a distance from the enemy, the corps commander disposes his unit in accordance with the concentration area, direction or zones of advance, and roads assigned by the army commander, and with the corps plan of development to be carried out upon encountering the enemy. The road net often has an important bearing on the formation adopted by the corps. When the probable method of employment can be foreseen, the formation of the corps should be such as to facilitate its entry into action. An interior corps not making the main effort of the army and with an objective not requiring the use of a reserve division, would march with all divisions abreast. A flank corps, or a corps making the main effort of the army, would march with one or more divisions in second line. Corps troops are assigned such positions in the formation as will facilitate their employment.

The army commander may regulate the march by prescribing lines to be reached upon the completion of successive stages of the march. These stages may be of several days' duration. To control the march, the corps commander prepares march tables, which prescribe the hours of march, zones of advance or routes, and the successive lines to be reached by the advance guards, and by the heads and tails of the infantry divisions and separate units of the corps troops.

Upon approaching the enemy, the corps commander develops his command from its march dispositions. He puts it into formation suitable for maneuver and combat, in accordance with an assigned direction and frontage. He orders a greater concentration on the marching front and closes up the marching columns. He makes such a disposition of divisions and of corps troops as to insure flexibility of maneuver and prompt availability for combat of any element in the command. He requires

the corps aviation to supplement the reconnaissance of the army aviation.

59. Security and reconnaissance.—Aviation and the army cavalry should make the first contact with the enemy. If cavalry is attached to the corps, the corps commander normally attaches it to the divisions to assist in security, or local reconnaissance, and to maintain liaison with the army cavalry. The first-line divisions furnish the necessary advance guards to provide march security on the front of the corps. Eventually the corps establishes contact with the enemy through the forward movement of the advance guards, which take over the line of contact when the progress of the cavalry or other reconnaissance groups has been definitely stopped, or when they are driven back by the enemy and have uncovered the advance guards. In either situation, the advance guards, supported by artillery and backed up by the divisions to which they belong, push on their advance to develop the enemy's strength and determine his first line of resistance and his dispositions in rear. When the advance guards can make no further progress against the resistance of the enemy, they cover the deployment of the main bodies by holding a line which may serve either as a line of departure for an attack, or as an outpost position for a temporary defense.

An attack against an enemy occupying a prepared defensive zone or position requires more extensive preparations than does the attack of an enemy in a deployed defense. The corps commander must obtain the most exact information possible of the enemy's defensive organization and plan of defense. He must provide for more power on a restricted front, a stronger artillery preparation, and a greater continuity of action. These factors will tend to delay the time of attack. Before launching an attack, he may find it necessary to drive in the enemy covering detachments and to execute a reconnaissance in force against the enemy's first position. Usually he must make, under cover of darkness, the approach to a line of departure preparatory to an assault.

If, in a meeting engagement, both sides are intent upon maintaining the offensive, the corps commander must direct his efforts toward gaining and holding the initiative and forcing his adversary to take the defensive. He can best accomplish his purpose by making a skillful use of terrain, and by a rapid deployment or tactical maneuver that will result in concentrating a superiority of fire and numbers at vital points.

60. Conduct of the attack.—The corps commander prepares to attack with the maximum effort consistent with the continuity of action demanded to carry out the mission assigned the corps. It may be necessary for the corps to attack alone; or it may attack in conjunction with neighboring corps. In a joint attack, the plan of action of the corps must harmonize with the plans of adjacent units. Generally, higher authority assures this coordination; but, in the absence of orders or instructions, the corps commanders will assure it.

Depending upon his mission, the army plan of attack, the enemy situation, the ground, and other pertinent factors, the corps commander decides upon his disposition for the attack. He seeks to deliver a main blow at some essential or weak point, by organizing a main attack upon which he concentrates a maximum effort. This main attack he supports by secondary attacks or holding attacks along the remainder of the corps front. He may make the main attack either in conjunction with the main attack of an adjacent unit, or subordinate to it.

He assigns to the first-line divisions their missions, general line of departure and direction of attack, zones of action, the time of attack, and, if necessary, their successive objectives. He determines the support and coordination necessary between adjacent divisions to carry out successfully the corps scheme of maneuver. He prescribes the assembly areas of divisions in corps reserve. He distributes to divisions such additional units of artillery and tanks as the individual tasks and the ground may make advisable. He leaves the details of execution to the division commanders.

The corps commander controls artillery combat against enemy artillery. Usually counterbattery is a duty of the corps artillery, but the corps commander may delegate it in part to the first-line divisions.

In addition to counterbattery, the corps artillery supplements the fire of the artillery of the divisions where greater power or greater range is required. With the artillery, the corps commander effects heavy concentrations at vital points during the course of the battle, particularly at points where the main attack may be temporarily checked or where a counterattack is imminent.

In the attack order the corps commander issues instructions for the employment of the corps aviation, to which he assigns definite observation missions. He assigns balloon companies to assist in general observation and in adjusting artillery fire on targets masked from ground observation. He uses airplanes to

supplement the observation and adjustment of artillery fire by balloons, chiefly on targets masked from balloon observation. He coordinates the missions of all aviation within the corps.

As long as the enemy continues to offer an organized resistance, the corps commander applies all his resources to the task of effecting the enemy's disorganization. When in a rapid advance communication becomes difficult and information meager, he must place great dependence upon the initiative of division commanders. He must, therefore, supply them with all the means possible for the accomplishment of their tasks. He may allot engineer troops to divisions, or require the corps engineer service to take over certain construction work in the zones of action of the divisions.

If the attack is checked, he must get his forces in hand again, and prepare speedily to renew the attack with a power sufficient to break down the enemy resistance.

61. Reserves.—When the corps has a limited objective, it may attack with all divisions in the front line and hold out a small reserve. When it is making a deep advance or is making the main effort of the army, it holds one or more divisions in reserve. When the attack has been initiated, the corps commander exerts his influence on the tide of battle and insures the essential continuity of action through the corps artillery and the corps reserves. He places the reserves initially and moves them as the battle progresses, so that he may best use them when needed. He must dispose them so that they are capable of maneuver behind the first-line divisions and yet are within striking distance of critical points. He may engage them by placing reinforcements from the reserves at the disposal of the commanders of first-line divisions; by introducing a complete division into the line, on a flank, or between two other divisions; or by replacing a worn-out division.

62. Exploitation of success.—In following up a successful attack, the subordinate commanders must undertake the actual operations. But to gain decisive results, the corps commander must provide these subordinates with the means of accomplishment, and must coordinate their efforts. He will have to furnish fresh troops to turn the enemy's retreat into a rout.

63. Repulse.—If all the efforts in the attack fail to accomplish the mission of the corps, the corps commander must take steps to resist a counterattack. He must reorganize his command under the cover of the ground and of artillery fire, and reduce temporarily the density of troops in actual contact with the

enemy. He must revise plans, replenish ammunition, relieve worn-out troops, and place the corps in condition to resume the offensive speedily.

SECTION III

THE CORPS IN DEFENSIVE BATTLE

64. General.—The principles discussed for the employment of the army in the defense are in general applicable to the corps. Only matters applying directly to the corps, as a part of an army, will be outlined in the paragraphs that follow.

65. Defense in a meeting engagement.—In a meeting engagement, if the situation requires the assumption of the defensive, the commanders of first-line divisions will have responsibility and freedom of action, in accordance with their assigned missions. The corps commander will employ the corps and army combat units at his disposal to support the first-line divisions. He will use his air units and other means of obtaining information, to gain a timely grasp of the situation, so that he can make effective use of the corps reserves, can provide for the mutual cooperation necessary between first-line divisions, and can harmonize the conduct of the battle with the units adjacent to his corps. The corps commander is responsible for measures necessary for flank protection, for preventing the development of gaps between adjacent divisions, and for assuring the active cooperation of all arms. If he has an offensive mission assigned, he must direct his efforts toward the assumption of the offensive at the earliest moment practicable.

66. Position and zone defense.—The position defense and the organization of a defensive zone may be successive developments of a deployed defense resulting from a meeting engagement; or they may be organized while the enemy is yet at some distance.

In the position defense or the organization of a defensive zone, the corps plan of defense is based upon orders from the army commander specifying the sector to be occupied by the corps, the general location of the successive positions or lines of resistance, and general instructions on the type of defense to be adopted. The corps may hold a position with all divisions in front line, where the flanks are secured and the position is to be held for a limited time. When the flanks are not protected, when the defensive is active and is to be followed by a counteroffensive, or when the corps is to remain in position for an extended time, it

holds one or more divisions in reserve. Reserve divisions may occupy a second position or may be held in a rest area convenient to the position.

No opportunity should be lost to throw up formidable rear lines of defense. The corps commander is responsible that additional battle positions are laid out and prepared along his entire front to check and break up any enemy assault that may penetrate the first battle position.

67. Preparations for the defense.—A preliminary occupation of the position may be ordered prior to a terrain reconnaissance; but the detailed orders for the occupation of the position and conduct of the defense must be issued after a reconnaissance has been made by the corps commander assisted by his staff, and after the receipt of reports from lower commanders, which will enable him to reach definite decisions on the following essential points:

a. The general trace and amount of organization to be accomplished for each successive position, the priority of work in the organization of the positions, and that part of the organization of the ground to be performed by units in corps reserve.

b. The distribution of the units to occupy the main battle position, and the boundaries between units.

c. The general scheme for the conduct of defense of the main battle position, and mutual support between adjacent units.

d. The proportion of strength with which the outpost position is to be occupied, and the general plan for the conduct of its defense.

e. The general disposition of the corps artillery, and the plan for its employment.

f. The tasks for the corps aviation and for any cavalry that may be attached to the corps.

g. The employment of the corps engineer service.

h. The designation and disposition of units to be held in corps reserve, and general plan for their employment to meet anticipated or possible contingencies.

i. The general plan for the establishment of signal communications within the corps and with adjacent units.

j. The plan of administration and supply essential to the occupation and to the plan of defense.

k. The methods and means of gaining information of the enemy before and after the establishment of contact.

68. Troops for outpost positions.—The missions of the outpost and the manner of the conduct of the defense are pre-

scribed by the corps commander. Troops for the outpost positions are furnished within their respective sectors by the first-line divisions. Cavalry in front of the outpost position, for contact with the enemy, usually operates under army orders.

If a covering force of infantry units, with artillery and cavalry attached, is placed in front of the outpost position, it may act as an independent command under army control; or each corps may be required to organize a covering force, under corps control, to operate within its sector.

69. Plan of artillery employment.—In his defense order, the corps commander outlines the general plan for the employment of all the artillery of the corps, including that of the divisions. He bases his plan upon the army plan of artillery employment. He utilizes the corps chief of artillery to advise him on matters of artillery employment and coordination, and to prepare the detailed plans for publication. The plans usually should include provisions for the initial employment of the artillery of divisions in corps reserve, and provisions for these artillery units to join their respective divisions if they are called upon to enter the action. The earliest use of the corps artillery will be for interdiction, counterbattery, counterpreparation, and fire in front of the outpost position to reinforce the artillery of the divisions. Some batteries must be far enough forward to engage in counterbattery and distant interdiction. The plan must make provision for the eventual withdrawal of these units to prepared positions from which they can bring effective fire to bear in defense of the main line of resistance, and from which all or a large part of the fire of the corps artillery may be concentrated at any point on the corps front at the will of the corps commander. It should include arrangements for the mutual or emergency assistance of the artillery of adjacent corps, and for the assistance of army artillery units.

70. Reserves.—The corps commander should place the corps reserves initially in position in rear of the main battle position. He should select these positions so that he can readily move the reserves to any part of the corps front where their entry into action or participation in a counterattack might be of advantage. Until an attack is imminent, the reserves should be placed where they can carry out the tasks allotted to them in the organization of the ground; when an attack is imminent, they are moved to their battle positions. The corps plans should cover the use of these reserves in counterattacks, and in the occupation of a second battle position.

71. Conduct of the defense.—When an attack appears imminent, the corps commander, subject to conditions imposed by the army commander, orders the opening of interdiction and counterpreparation fire. He may request the assistance of army artillery and of air forces at the disposal of the army commander, in accordance with army and corps plans.

The prepared plans cover the initial phase of the defense. The details of execution are left to the initiative of the subordinate commanders. After the battle has begun, the corps commander exerts his influence toward a successful defense by maneuvering the fire of the corps artillery, by utilizing the corps reserves, and by controlling such assistance as he can obtain from the army artillery and army aviation.

The corps commander may use corps reserves to extend his front to meet the threat of enemy envelopment, to reinforce front-line divisions, to relieve worn-out units, or to reestablish the continuity of the main line of resistance. But his most effective use of these reserves is in a counterattack at the crucial moment and at the critical place, to overwhelm the attackers and insure the success of the defense. Such a counterattack usually is conducted in accordance with a prearranged plan and is launched upon the order of the corps commander. He places all necessary means at the disposal or in support of the unit making the counterattack to insure its success and to protect it against possible counterthrusts of the enemy. He insures the cooperation of other troops.

72. Counteroffensive.—If the defense is successful, the change to the offensive is made in accordance with instructions from the army commander.

73. Withdrawal from action.—If the enemy gains possession of the first battle position, the corps commander puts in effect his plans for the defense of a second position where the ground has been fully or partly organized for defense. The withdrawal to the second position is covered by an organized delaying action in which machine guns and artillery play a prominent part. The first-line divisions occupy the second position within their respective sectors; or, if the second position is to be defended by troops in corps reserve, the first-line divisions withdraw to positions in reserve in rear of the second position. The withdrawal of the artillery must be progressive, so as to keep as many units as possible in action at all times. A withdrawal to a third position is effected in the same way.

If the corps is forced to retreat, the corps commander directs that rear guards, strongly reinforced with machine guns and artillery, be formed and placed in position far enough in rear of the line of combat to organize their fire before being reached by the enemy's attack. These rear guards cover the retreat. They withdraw by echelon to successive positions suitable for delaying action against the enemy. They employ demolitions and such obstructions and obstacles as they can improvise to delay the enemy.

CHAPTER 7

THE INFANTRY DIVISION

		Paragraphs
SECTION I.	General	74–77
II.	The infantry division in offensive battle	78–85
III.	The infantry division in defensive battle	86–97

SECTION I

GENERAL

74. Composition and characteristics.—The infantry division is the unit by which the army corps executes its maneuvers and engages the enemy in battle. It is the basic large unit, of which corps and armies are formed. It is the largest permanent unit. It is the largest unit in which officers learn to know one another well enough to form a closely knit organization. It is the smallest unit that is composed of all the essential arms and services, that is designed to be tactically and administratively self-sustaining, and that can conduct, by its own means, operations of general importance. It can strike or penetrate effectively, move readily, and absorb reinforcing units easily. It can act alone or as a part of a higher unit. It is the organization which officers and men love and cherish and about which their recollections cluster in aftertimes. It is therefore the unit which promotes morale and a spirit of service. It forms a whole which should never be broken up. The combat value of the infantry division comes from its ability to combine the action of the various arms. Cavalry and aviation should be attached to an infantry division acting independently.

75. The division commander.—To initiate an operation the division commander gives his orders to the brigade commanders

ard to the commanders of the arms and services. He assigns the entire battle front to infantry brigade commanders. After the infantry brigades have been committed to action, he ordinarily issues orders to their commanders only when the situation requires important variations from the original plan. In action he watches the progress of the line of battle, and influences the combat through orders to the division artillery and division reserve. The reserve includes all combat troops not engaged. The division commander controls it through orders to its commander.

76. **Artillery.**—Primarily the division artillery assists the infantry front line. For this purpose the division commander assigns it missions of support and retains it normally under his own control, exercised through the commander of the division artillery. When the combat breaks into disconnected local engagements, or in a situation where the division cannot be employed as a whole in coordinated action, the division commander may attach to infantry units a part or all of the division artillery.

77. **Signal communications.**—The division commander, within the limits prescribed by the corps, regulates the operation of signal communications. Axes of signal communications are prescribed for the division by the corps commander and for each infantry brigade by the division commander. Sometimes division and brigade axes coincide. These axes are extended as far to the front as possible, and subordinate units keep in touch with them as the advance progresses.

Advanced communication centers, operated under the direction of staff officers, are established on these axes. They keep commanders informed of the progress of the attack and transmit orders. The advanced communication centers of the division are frequently established near the command posts of brigade commanders. They may be pushed farther forward. Advanced communication centers are well supplied with personnel and equipment. In battle the division commander should be in ready communication with the commanders of his infantry brigades, division artillery, division reserve, commanders of adjacent divisions, and corps headquarters.

SECTION II

THE INFANTRY DIVISION IN OFFENSIVE BATTLE

78. The march to battle.—The division commander designates the successive lines to be reached by the advance guards and main body. When the division is marching in more than one column, each column has its own advance guard. The infantry advances in formation to facilitate its early deployment. The artillery advances, prepared to support the advance guards, and to enter promptly into action. It maintains close liaison with the infantry, and pushes its reconnaissance well to the front. Aviation, and cavalry if attached, reconnoiter the enemy, and obtain information upon his situation and the condition of the ground, communications, obstacles, and cover.

In executing the march into battle in a meeting engagement, the advance guard should be relatively large; since, in such an engagement, the larger advance guard will be able to seize and hold important points in the vicinity where contact is established. The division commander may designate, in advance, important terrain features which the advance guards will seize during the course of the approach march. The advance guard, supported by artillery, drives in the enemy's covering detachments and develops his strength and dispositions. When it can make no further progress, it organizes a position suitable to cover the deployment of the division, and to gain the necessary time for the main body to complete its preparations. The division commander puts his artillery into action promptly, arrests the forward movement of the enemy, and, if necessary, orders the capture of such terrain features as will favor his subsequent attack. He keeps the corps commander informed of the situation and prepares to attack when directed.

The division commander should keep in close touch with the operations of the advance guard. He should estimate the strength and disposition of the enemy and inform the corps commander. When he believes that he is confronted by covering troops only, he should endeavor to clear up the situation by ordering such minor operations against objectives of importance in the subsequent action as may be necessary. He should aid these operations by artillery support and flanking fire.

Confronted by an enemy in movement who is himself acting offensively, the division commander makes such dispositions as will favorably influence the early stages of the battle. He determines upon his general plan for battle as early as practicable. He can decide details only when the division gains contact with the enemy, and even then his information will be relatively incomplete; but if he spends too much time and effort in gaining information, he may lose the initiative or use up his force in piecemeal engagements. If his first task has not been fixed by the corps commander, the division commander will determine it himself in the direction and in the zone assigned him. The tactical importance of the objective usually fixes his choice.

79. Command posts.—To keep himself well informed of the progress of the attack and to exercise control, the division commander establishes a command post from which he can keep in close touch with the attacking troops, the artillery, aviation, and division reserve, and maintain communication with the corps commander and adjacent units. Its initial position and line of advance are normally prescribed by corps orders. The command post should be easy of access and should be supplemented by good observation posts.

The division commander fixes the position of the command posts of his immediate subordinates.

The command posts of the division and of lower units are advanced in time to facilitate the exercise of command. During this advance, detachments remain at the old command posts to continue operations until the new are open. When a new command post is opened, report is made to higher and lower commanders.

During the action the division commander and the commanders of lower units may temporarily leave their command posts in order to influence the combat. Before leaving, they make such dispositions as will insure the conduct of the action during their absence.

The personal reconnaissance of the division commander is of the highest importance. It is a duty which he can not delegate. He should be accompanied by one or more staff officers. On many occasions, the division commander will be unable to conduct a comprehensive personal reconnaissance; but he should visit critical points. He should make full use of automobiles and aircraft. Above all he should be seen frequently by the troops, in particular by those that are to perform critical service.

80. Combat orders.—The combat orders of the division should be brief. There will usually be little time between the moment when the division commander receives his instructions from higher authority and that when his subordinates should be prepared to execute his own orders. It is vital that the troops receive these orders in ample time to prepare for their execution.

To gain time, the division commander will, when practicable, decide upon his essential dispositions in the presence of his infantry and artillery brigade commanders and his staff. In order to start the movement promptly and to furnish the troops with early information of the contemplated maneuver, he will make frequent use of warning orders.

The combat orders of a division should follow the normal form. Occasionally parts of the order may be advantageously illustrated or replaced by sketches or maps indicating the disposition of the infantry, the artillery, the principal artillery targets, the coordination of artillery fire with the infantry advance, and the signal communications existing or to be installed.

81. Preparations.—When close to the enemy, the division commander will normally order the development of the division, a movement which usually terminates in the occupation of the assembly position for the attack. He distributes the units in width and depth so that they may maneuver readily, take advantage of ground, and deploy rapidly.

The assembly positions should afford cover or be beyond the effective range of enemy artillery. Measures to prevent observation or attack by enemy aircraft should be taken. Troops should be developed in the direction of the contemplated movement and have access to favorable lines of advance to their deploying positions. Troops making an enveloping movement take positions so that they may deploy straight to the front and attack.

While developing the enemy, the division makes its preparations for attack. It may be necessary to execute minor attacks as a preliminary to the proper execution of the main attack, in order to gain certain terrain features, to clear the front, or to provide flank protection for the main blow. The combatant forces are divided into the attacking echelons, the artillery, and the division reserve. The attacking echelons comprise a part of the infantry, tanks when necessary, and occasionally accompanying artillery. The division commander places this force under the orders of a single brigade commander, or dis-

tributes it between both brigade commanders. This force deploys upon or in rear of the ground held by the advance guards and prepares for action.

The division commander should dispose the tanks according to their probable employment and the adaptability of the ground for their action. If they are exposed to observation, he should employ them upon a wide front in order to avoid concentrated artillery fire. If a deep advance is contemplated, he should divide them into several echelons, so as to secure continuity of effort.

When the development of the situation can not well be foreseen, or where the ground makes liaison between the infantry and artillery difficult, the division commander may attach accompanying batteries or guns to infantry units. Such a use of artillery is exceptional. This accompanying artillery destroys obstacles and overcomes resistance at close ranges. It follows the infantry attack closely.

The division artillery (less accompanying artillery) is organized into groups, if necessary. The greater part directly supports the infantry. To secure teamwork and liaison, the division commander may advantageously assign an artillery unit habitually to the support of the same infantry unit. The supporting fire should accompany the infantry closely, in accordance with a prearranged plan or upon requests for fire by the infantry unit. Such requests should be promptly met.

The division commander usually holds the howitzers with the division artillery under his own control in order that he may influence the combat by concentrations of fire upon certain objectives or by extending the action of the lighter guns.

The artillery (except accompanying artillery) is commanded by the division artillery brigade commander, who forms the groups, assigns tasks, and allots positions and observation posts. To avoid the necessity of early changes, he should assign the artillery initial positions as far forward as practicable. He should place, generally, each supporting battalion of artillery centrally in rear of the infantry unit which it supports and where it may support the rest of the artillery and join in the general concentration of fire. To obtain enfilade fire, some batteries may, by mutual agreement, be placed in areas of neighboring divisions.

The division reserve consists of all unengaged units, which the division commander keeps under his immediate control, and, when necessary, of tanks. The division engineers may be employed as reserves. When the division has to maneuver or has an ex-

posed flank, the division commander may find it expedient to hold out a large reserve. He should distribute his reserves in accordance with their probable employment—to support an attack, to exploit success, to prolong the line, to protect a flank, or to cover a retreat.

82. Conduct of the attack.—The attack, strongly supported by fire and protected on its flanks, is launched opposite the objective. The infantry moves to the attack at a set hour or upon a prearranged signal, and generally by successive stages. In the act of engaging the enemy, the infantry takes full advantage of the ground. Its advance should be prepared for and supported by fire; and it should have close liaison with the artillery, which should be prepared to render effective support. When a rolling barrage is used, the infantry follows as closely as possible to the bursts of the projectiles. It operates in close contact with the tanks. The infantry forms its assault echelon in thin lines, at a distance from the enemy, to avoid losses, and, at the same time, to take advantage of its fire power.

Aviation should report the position of our own and the enemy's front lines and of the enemy batteries and troop concentrations; it should obtain information of enemy movements in rear areas; it should insure the liaison of the troops engaged, both with the division commander and with the artillery.

The attack advances from point to point, without alignment on neighboring attacks and with the sole object of attaining the final objective. Contact groups or combat patrols protect the flanks and observe the progress of adjacent divisions. All commanders are responsible for the maintenance of lateral communications.

The division commander regulates the movements of the division reserve and assures its entry into action in time to guarantee continuity of effort and prevent the enemy from regaining lost ground.

As soon as it is expedient, the division commander advances the artillery by echelon so as to give the infantry effective, constant support. Division engineers must be at hand to facilitate its movement. The decrease in the number of batteries able to fire will usually require that the infantry be supported by concentrations laid down upon its request. Howitzers with the divisional artillery are generally used to extend the action of the lighter calibers over as deep a zone as possible. They fire upon ground favorable to the enemy, upon transient targets, and upon enemy reserves forming for a counterattack or starting one. They screen the attack by blinding probable enemy observation

posts. Whenever, during the action, the division commander becomes uncertain of the exact situation of the infantry he should develop protective fire to the maximum.

The infantry should employ its maximum fire power. It should coordinate the use of all its weapons in preparing and accompanying the attack, protecting flanks, assisting in the repulse of counterattacks, and occupying conquered terrain. It advances its weapons by echelon to maintain the constant support of the assaulting troops.

The coordination of artillery fire with infantry movement is essential to success. It is often secured at the beginning of the attack by a time schedule, but depends thereafter upon the proper functioning of liaison between the infantry and the artillery. Liaison is obtained by placing the command post of the artillery brigade commander close to that of the division commander, and by placing the command posts of artillery units near those of the infantry groups they are to support. In addition each artillery unit sends to its supported infantry organization a liaison officer and detachment. This liaison detachment keeps the artillery informed of the situation and needs of the infantry, and advises the infantry about the support to be obtained from the artillery.

All commanders take advantage of darkness to rectify the dispositions at the end of the day, to reform, supply, or relieve units engaged, to organize the conquered positions, and to reestablish and improve communications. They also cross ground dangerous to pass over by day, so as to place their troops in an advantageous position to continue the offensive in the morning.

83. Attack against an enemy in position.—Special dispositions are necessary for an attack against a thoroughly organized position. In marching against an enemy in position, the danger of ambuscade is greater than in a meeting engagement, and the enemy will already have taken possession of ground which he wishes to hold; the advance guard should therefore be relatively small. When the division commander is confronted by a position which is prepared for a stubborn defense, he should establish the division firmly upon a front favorable for deployment and make his dispositions for attack. Before the attack, he obtains accurate information from which he prepares a program for the artillery and determines definitely the infantry objectives. To obtain it, he orders active and thorough ground and air reconnaissance, and may order raids or small local attacks to capture prisoners. He causes large-scale topographic sketches

to be made of the enemy position and its surroundings. On these sketches are shown enemy defensive organizations, machine-gun positions, and artillery emplacements, the assembly points of reserves, communications, paths, and covered ways.

In addition to obtaining accurate information of the enemy, the division commander must provide for careful organization of the attacking force, the placing of command and observation posts, plans for the extension of communications, strict regulation and screening of traffic, the construction of battery positions well forward, the accumulation of the necessary supplies, including ammunition, engineer, medical, and food supplies, and the improvement of the road net.

Minor operations may be required to capture ground in front of the main enemy position and to insure for the attacker the possession of important key points of the terrain. These operations are, in general, attacks with limited objectives, the success of which depends chiefly on surprise. They may require artillery and airplanes to open the way for the infantry and protect it during the occupation of conquered terrain. During these operations, artillery and machine-gun protective fire may box in the defenders from the rear to cut them off from reinforcement and prevent their retreat.

Before the attack all unit commanders take every precaution to insure surprise. The greatest caution is necessary against observation from enemy aircraft. Works are constructed and movements are made at night. All indications of the approaching attack and all concentrations of troops are concealed, and the normal rate of daylight circulation is maintained. Balloons and airplanes immediately report violations of the orders for concealment. During the night, balloons watch for fires and lights.

The division commander issues orders sufficiently detailed to contain all necessary information for the preparation and execution of the attack.

The division commander controls the action of his artillery throughout the combat. Before the attack, he uses it to destroy obstacles, to overcome the enemy fire power, and to prepare for the infantry advance. During the attack, he uses artillery to support the infantry by overpowering the resistance encountered, and to screen it by smoke from enemy observation and distant fire. The division artillery may be called upon to execute interdiction and counterbattery fire both before and during the attack.

The purpose of all fire is to support the infantry. The fire of supporting artillery is in general directed upon those elements of the enemy which, at the time, are most dangerous to the infantry. It assists the infantry in reaching the enemy before he can make effective use of his weapons. Supporting fire varies according to the infantry maneuver. It conforms to the enemy ground organization and to the terrain. It may take either the form of successive concentrations or rolling barrages. Successive concentrations are bombardments upon selected points. They are maintained until the progress of the attack demands the lengthening of the range; whereupon they are raised and placed on more distant points in accordance with a prearranged plan. Rolling barrages are dense, deep curtains of fire moving according to a time schedule. The infantry follows them as closely as possible. The artillery must take care that the barrage does not run away from the infantry.

The artillery preparation consists of a violent bombardment. It may last from a few minutes to several hours. The duration of the preparation depends upon the resistance to be overcome, the condition of the enemy, the availability of tanks, and the amount of ammunition at hand. Fire is laid chiefly upon the enemy infantry positions and accessory defenses. If it is impossible to determine these exactly, the artillery may still prepare the attack by firing upon objectives to be carried, upon terrain features favorable to the enemy, upon probable assembly points for his reserves, and upon his batteries.

When surprise is especially desired, when sufficient tanks are available, or when the enemy is already shaken and poorly protected by obstacles, the preparation may be short or may even be omitted.

Successive concentrations are more flexible than rolling barrages and are better adapted to meeting changes in the situation. They permit more freedom of infantry maneuver. As a rule they require less ammunition and fewer guns than do rolling barrages. The rolling barrage, to be efficient, must be dense and deep. An effective rolling barrage requires one 75-millimeter battery for each 100 yards of front. If possible, the barrage should be thickened and deepened by smoke, shrapnel, and concentrations from heavier artillery. It should be supplemented by the fire of infantry weapons. The rolling barrage finds its greatest application in supporting penetrations through defensive zones and in overcoming enemy resistance in entrenched areas. It is also useful to outline the movement at

the beginning of an attack. The employment of a rolling barrage presupposes an adequate supply of ammunition.

Communication is carried on by the telephone, telegraph, radio, messengers, visual signals, airplanes, and pigeons.

During the attack on a thoroughly organized position, the coordination of artillery fire with the advance of the infantry is generally maintained by a time schedule. These schedules are, however, difficult to carry out when the attack is extended or long protracted. In order to coordinate properly the progression of the artillery fire with the infantry advance, it is necessary to allow the infantry sufficient time in which to overcome the difficulties imposed by the enemy and the accidents of the terrain. It is sometimes desirable, therefore, to arrange for halts on successive lines. These lines should be definite, easy of recognition, and favorable to the resumption of the advance. In addition, it is well to prescribe a few simple conventions based upon the employment of rockets, airplanes, or radio, which will permit the attacking troops to request necessary modifications of the time schedule.

84. Repulse.—Should the attack fail; the infantry holds the ground gained until a fresh attack is launched or until the success of neighboring units permits the resumption of the advance. It organizes its fire system as quickly as possible, digs in on a defensible line, and marks out its front line to indicate to the aviation its exact position. The artillery adjusts its protective and counterpreparation fire. The attack resumes either upon the orders of higher authority or upon the initiative of the local commander. Before a commander renews an attack that has failed, he should determine the principal reasons for its failure. He may then organize the new attack under favorable conditions. If the division is ordered to retire, it withdraws, as has been previously indicated in this manual.

85. Exploitation of success.—Aviation and subordinate commanders must keep the division commander continuously informed of the progress of assaulting troops so that he may adjust his plans and take advantage of every opportunity.

When he has accomplished his first task, he should allow the enemy no respite. The division should push on vigorously to a rapid and successful completion of its mission. This mission may be the capture of a distant position, the exploitation of success, or the pursuit of the enemy. As long as the final objective has not been attained, every success should be exploited to the fullest extent. Division orders should prescribe the more

important follow-up maneuvers which can be foreseen and should dispose combat units accordingly.

Special preparations are necessary to clean up the enemy's trenches. The work must not delay the advance unduly. Unit commanders, therefore, designate detachments for this duty in advance, and provide them with special weapons. Since this detaching of troops diminishes the depth of ground which a unit may conquer, commanders must take it into consideration in providing for reliefs and passages of lines.

The advance continues by successive stages until the final objective of the division is attained. The division commander insures that the artillery is constantly prepared to support the infantry. He causes the engineers to repair the roads necessary to advance the artillery and to bring up supplies.

A success may be followed up either in breadth or in depth. If a penetration has succeeded, frontal and flank attacks against the enemy lines where the penetration occurs will widen the breach. A continued push to the front with flanks covered, but without regard to the alignment with units which have been checked, will increase the success and will be the best way to help neighboring units. If the leading troops are still in fighting condition, the duty of exploitation will fall to them. Heavy losses may make it necessary to keep them in the conquered position, to organize it, and then pass to the reserve. Reinforcements of fresh units will meanwhile continue the exploitation.

The division commander must exploit his success to the full. When he again encounters the enemy in position, he must prepare a new attack. He may undertake this attack with the troops which captured the first position, or he may delay it until he can make new dispositions and engage fresh troops. He, therefore, arranges reliefs and passages of lines, so as to hold the captured ground and avoid losses due to temporary congestion.

When the defeated enemy abandons the struggle and retires in disorder, the pursuit begins. It should be uninterrupted, bold, and relentless. It is begun by the leading troops. The most mobile elements, such as cavalry, mechanized, motorized, or animal-drawn units, and infantry in condition to execute forced marches, endeavor to cut off the retreat. Aviation reconnoiters the advance and attacks the retreating enemy columns. The division commander organizes advance guards well supplied with artillery and provided with fast tanks. The duty of these advance guards is to outflank quickly such local resistance as the enemy may offer and to frustrate his attempts to reestablish

himself in favorable localities. The main body forms into columns and follows, prepared to intervene in the action. The pursuit should be continued, day and night, to the utmost limit of endurance of man and beast.

SECTION III

THE INFANTRY DIVISION IN DEFENSIVE BATTLE

86. Defense in a meeting engagement.—In a meeting engagement in which the defense is imposed, the division commander deploys his division in its designated zone of action and maintains close communication with the divisions on his right and left. He supports and reinforces his advance elements in conformity with the general directions of the corps, gives the necessary orders for the occupation of the battle position and the disposition of his reserve, assigns positions and missions to his artillery, uses his aviation and all other means to obtain information of the enemy, and keeps his corps commander fully informed of the progress of events.

87. The battle position.—When a division commander receives orders to take up a defensive position, he should rapidly reconnoiter the ground, occupy an outpost position with covering troops, and dispose his forces to meet an immediate attack. He should place them in the battle position, so that they may proceed with the organization of the ground without unnecessary delay. He prescribes in more detail the line of resistance designated by the corps commander. He completes and makes necessary rectifications of his first dispositions, formulates his plan of defense, and promulgates it in field orders. These orders follow the usual form for the preparation and occupation of a defensive position, with annexes as detailed as time permits. The readiness with which subordinate units make a skillful use of the ground is one of the severest tests that can be applied to the division commander.

The battle position is the place where the division conducts its main defense. It is bounded in front by the main line of resistance, and in rear by the regimental reserve line. It is a zone of continuous, coordinated fire of all weapons which the division commander interposes between the enemy and the points of observation that are essential to the effective use of the artillery of the defense. It is at this position that the enemy must be stopped.

It is organized in successive lines of mutually supporting strong points garrisoned, in order from front to rear, by front-line platoons and by company, battalion, and regimental reserves, for which it should afford suitable cover. For the exercise of command and coordination of defense, strong points are combined into centers of resistance under control of battalion commanders. The depth of the position is as great as will permit the rearmost elements to cooperate, by fire, in defense of the main line of resistance, and is limited only by the range of infantry weapons and topographical limitations as to their employment. The battle position should afford favorable ground for the employment of artillery fire and natural advantages for blocking attack and the progress of enemy tanks.

The main line of resistance is the most important element of the battle position. It is the line in front of which the fire of all elements of the defense is concentrated to break up the enemy attack. It is organized for determined resistance and is protected by obstacles as continuous as possible Its general location conforms to limiting points prescribed by the corps commander, or, when not controlled by higher authority, to the defensive mission of the division, to governing topographical conditions, and to the necessity of adequate protection for terrain features vital to the defense. Its detailed trace is dictated by the conformation of the ground and the coordination of fire and obstacles. It must possess a good field of fire at close and medium ranges, and lend itself to the flanking protection of automatic weapons. Every effort will be made to keep the enemy from identifying it as the main line of resistance and to conceal the details of its organization.

To gain concealment from ground observation, thereby making it difficult for the enemy to coordinate his infantry and artillery in assault, and in order to preserve the depth of the battle position and coordination of the fire of its successive elements, it may be advantageous to place parts of the main line of resistance on rear slopes. If such emplacement is selected, covering detachments, with machine guns and automatic weapons, must be advanced to the crest in order to fire on attacking troops during their approach to the battle position. Infantry commanders must keep supporting artillery informed, at all times, of the whereabouts of their most advanced troops. Special provision must be made to deny to the enemy the use of dead ground or covered approaches.

The regimental reserve line is the last organized defense of the vital terrain features which it is the function of the battle position to cover. It marks the forward limit of the emplacement of artillery other than antitank guns and units advanced to support the outpost. The logical line of its trace is an important, and, at times, a controlling consideration in the selection of the main line of resistance. The regimental reserve line must permit of fire in support of the main line of resistance, serve as a line of departure for counterattack, and afford a position for a stubborn resistance as a final line of defense. These requirements are best met by a skillful combination of positions on forward and reverse slopes.

88. Reserves.—All reserves are placed where they may be readily available to reinforce the line of resistance or to counterattack. Counterattack is the decisive, offensive element of defensive action. If it fails and the enemy maintains himself in the interior of the position, the reserves will form the first elements of a holding line to contain the enemy until he can be expelled by counterattacks of greater magnitude by troops brought up for the purpose.

89. The outpost position.—The battle position should be covered by an outpost position, at a sufficient distance from its line of resistance, to give timely warning, to protect it from the fire of long-range infantry weapons, and to break up the cohesion of the enemy attack. In large forces this distance should be such as to require the enemy to displace forward his light artillery before he can launch a coordinated attack on the battle position. If time permits, a delaying area between the two positions should be organized.

The outpost position should have all the merits of the main battle position; it should be organized on the same principles to the end that it may, at the discretion of division and higher commanders, be used as an alternative main line of resistance. The small forces assigned to it will, generally, in the early stages of its occupation, be unable to prepare extensive works. It should be protected by a part of the division artillery, and emplacements should be prepared so that all the artillery may be used for this purpose. The rear of the outpost position should be covered by fire from the battle position. When the division takes up a position in the face of an enemy already upon the ground, or when it assumes a defensive position in an interval between offensive operations, the line of resistance of the outpost position should

be the first good line of resistance that can be found close to the enemy's outpost position.

90. Organization of the ground.—Organization of the ground consists in artificial strengthening of the position. It is carried on progressively. Of prime importance are combat emplacements for the troops and for their weapons, the construction of obstacles, provisions for attaining superior observation and field of fire, and the installation of adequate signal communications. The fighting power of the troops should be increased and their strength conserved by further intrenchment, by the use of camouflage, by constructing shelters and dummy works, and by improving communications.

All the ground immediately in front of the line of resistance should be covered by the coordinated fire of all infantry weapons, in concealed positions, sheltered and echeloned at varying distances. Although a dense, visible line must be avoided, combat posts must not be so isolated that the space between them is insufficiently guarded. Infiltration between combat posts under cover of darkness, fog, or smoke must be prevented.

Obstacles should hold the enemy under the flanking fire of automatic weapons and prevent a sudden irruption into the front line of defense.

If the ground permits the enemy to use tanks, antitank defense must be provided by light guns and infantry weapons in forward positions; and mine fields and ditches should be constructed. They should be concealed from enemy observation.

Command posts are established; signal communications are completed and given protection; roads, paths, and bridges are constructed and repaired; and shelter is provided and improved.

91. Combat dispositions.—For battle, the division commander divides his command into echelons which comprise respectively the troops occupying the battle position, the outpost detachments, the artillery, and the division reserves. The greater part of the infantry occupies the battle position. In rear of the front line, units are echeloned in depth so that they may readily reinforce the line of resistance, stop the enemy penetration by fire power, or repel it by counterattack. Outpost detachments are limited to strict necessities and are generally detailed from troops occupying the battle position. Their combat positions are chosen so as to permit them to develop their maximum fire power. As in the offensive, the division commander determines the missions of the artillery, and assigns it the general areas to be occupied. It is emplaced so that it can cover all approaches

to the battle position and concentrate the mass of its fire on areas most favorable to enemy advance. It is echeloned in depth so that some batteries may support the outpost position and others may fire upon the interior of the battle position. All batteries should be prepared for close-in defense. The artillery brigade commander forms the groups and allots missions, positions, and observation posts. He directs the artillery ammunition supply.

The division reserves consist of the unengaged infantry, the tanks, and, when necessary, the engineers. According to circumstances the reserves are echeloned for protective purposes behind the exposed flank; or held in a position from which they may deliver a prepared counterattack against the flank of an enemy attack which has penetrated or which threatens to break through the battle position; or disposed so that they may take up the counteroffensive. The larger the reserve the more mobile and active is the defense. For an aggressive defense an entire brigade may be held in reserve, so disposed as to facilitate counteroffensive action by the entire command.

92. Conduct of the battle.—When attack is not imminent, troops destined for the battle position are placed in or near it, so that they may work upon it without unnecessary fatigue. When attack is imminent, they occupy their combat positions.

The division commander instructs the outpost troops either to hold their position, or to conduct a delaying action in withdrawing to the battle position. The artillery covers the approaches to the outpost position and the intervals between strong points. If the outpost troops are instructed to fall back, they retire under the division commander's prearranged plan which should specify the time of withdrawal and the routes to be followed. This procedure will enable the artillery to protect their withdrawal. The withdrawal should not mask the fire of the main position.

The primary mission of the division commander is to hold the battle position. Throughout the action he influences the battle by his control over the fire of his artillery and the use of his reserves. Fire action is an essential element of the defense. He secures the maximum fire power by the coordination of his infantry and artillery fire. He prepares a plan for this purpose. Infantry automatic weapons cover the position by continuous bands of fire. Artillery fire is laid in advance of the infantry fire or reinforces it on critical points. The efficiency of fire action depends chiefly upon good observation, a good field of fire, the absence of enemy interference, efficient communications, exact

coordination, and proper liaison. When attack is imminent, the division commander, in accordance with orders from the corps commander, orders counterpreparation and interdiction fire by his artillery. He may also order counterbattery fire. Machine guns and infantry cannon may aid in counterpreparation and interdiction.

As soon as an enemy attack is launched, the artillery and infantry endeavor to break it up. Their fire is closely coordinated and supplementary. The division plan must be such that it will assure this coordination almost automatically. Infantry fire should be dense on areas less readily covered by the artillery. Artillery fire should bar access to ground which infantry fire, because of the flatness of its trajectory, can not so easily protect.

The primary targets of the division artillery are the assault echelons. If the attack reaches the friendly infantry, the artillery transfers its fire to the enemy supports. If the enemy secures a foothold in the battle position, the infantry and artillery must limit his progress and isolate him from his reserves by a continuous wall of fire around the breach.

Maintenance of the integrity of the battle position is the function of front-line brigades. If the enemy succeed in penetrating beyond the main line of resistance, it is the mission of brigade commanders, with means at their disposal, to eject him or maintain continuity of defense within the battle position.

Local counterattacks are made by battalion, regimental, and brigade reserves. They should be foreseen and thoroughly prepared.

Until brigade reserves have been exhausted and the regimental reserve line is in jeopardy of rupture, the employment of the division reserve is, as a rule, unwarranted. As soon, however, as it becomes evident that troops under brigade control will be unable to prevent penetration beyond the limits of the battle position, the division commander, with all means at his command, should counterattack to restore its integrity and drive the enemy beyond the main line of resistance. In view of the destructive power and demoralizing influence of enemy tanks and their ability to penetrate deep into fortified areas, the division commander should be prepared at all times, with means under his immediate control, to destroy such tanks as may break through the regimental reserve line or threaten to penetrate beyond the battle position.

Counterattack is the soul of defense. A counterattack by the division reserves should be supported by all available artillery

and may or may not be preceded by an artillery preparation. The division commander designates the troops, determines the direction and object of the attack, the line of departure, the amount of the artillery support, and, if necessary, the time of attack. He may request assistance from the corps artillery or from neighboring divisions. As a rule, he orders counterattacks against the flanks of a salient, with such limited objectives as will render untenable, to the enemy, the ground which he has captured within the defensive position.

93. Defense in a stabilized situation.—A front may become stabilized. The position will include protected, well-hidden battery and machine-gun positions, emplacements for infantry cannon, underground signal communication, intricate and formidable obstacles, improved communications, and strong shelters reinforced by armor plate and concrete.

The strength of the defensive works will influence the manner of occupying and defending the position. The division commander should fully develop the defense plan. It should contain instructions governing the manner of occupying the position during quiet periods and in attack, as well as provisions for withdrawal or reinforcement. By frequent drills the troops should be practiced in the duties devolving upon them in attack.

To avoid prematurely revealing the positions of batteries, machine guns, and infantry cannon, the greater part of the artillery and of the infantry auxiliary weapons will remain silent until an attack is actually launched. Such firing as may be required before the day of battle will be done by a few batteries of mobile weapons using improvised emplacements, which should be constantly changed. The conduct of the battle follows the principles previously set forth. Good signal communication and the strength and number of shelters make it easier, at the outset, to carry out the plans of defense.

94. Action in an enemy withdrawal.—The enemy may voluntarily withdraw from a stabilized position. At the first indications, his intentions should be verified by aerial reconnaissance and deep raids. When the retirement begins, the enemy must be followed closely to disorganize his retreat and prevent him from completing demolitions. Precautions should be observed against offensive returns. Through aviation reports of the extent of the devastated area, the depth of the evacuation may be estimated. The division should maintain close contact with the enemy, and advance from one good position to another.

95. Withdrawal from action.—When it is necessary to withdraw, or when the division commander receives an order to disengage his forces and fall back, he forms a rear guard and supports it with all available artillery. The rear guard takes position on the line designated by the corps commander, and gains contact with the rear guards of neighboring divisions.

A withdrawal by daylight is so costly that it will be undertaken only when its necessity is so vital as to warrant the sacrifice that it will entail. When it becomes imperative, the division commander will withdraw his command under the protection of covering troops on the line, heavily reinforced by machine guns. He should attempt to regain liberty of action by forming a rear guard. He will indicate the direction of retreat, assign assembly points and roads, and specify the major demolitions to be executed, in conformity with orders from the corps commander. The rear guard withdraws when it has accomplished its mission.

96. Delaying action.—The division commander will execute such delaying action as is required by the situation or orders from higher authority. He will occupy with infantry, heavily reinforced by artillery and machine guns, successive positions favorable for long-range fire and withdrawal under natural cover. Successive positions should be separated by such distances as will force the enemy to displace his artillery before he can launch a coordinated attack on the second position. By these means he will compel the enemy to deploy and advance across the country. Before the troops become seriously engaged, they will withdraw from each position and unmask the position in rear.

97. The counteroffensive.—While on the defensive, the division commander must look forward to the time when his division will be called upon to take its part in an overwhelming counteroffensive. He must maintain the fighting spirit and training of his troops and the condition of men, animals, and equipment; and he must plan his operations so as to be able to pass to the counteroffensive with the best chances of success.

CHAPTER 8

THE CAVALRY CORPS AND THE CAVALRY DIVISION

	Paragraphs
SECTION I. The cavalry corps	98
II. The cavalry division	99–110

SECTION I

THE CAVALRY CORPS

98. Characteristics and employment.—The cavalry corps is a strong, flexible organization, which includes two or more cavalry divisions and troops attached for special missions. Infantry, tanks, air units, additional artillery, engineer units, and other troops assigned to it should be given maximum mobility. Cavalry divisions not assigned to armies form a part of the G. H. Q. reserve. Such unassigned divisions may be allotted to armies or to groups of armies, or they may be formed into one or more cavalry corps.

As a rule, the corps commander, at the beginning of a campaign, issues his orders in the form of instructions which define the mission, but which leave the method of execution to division commanders. In battle he coordinates the action of his divisions, determines the employment of nondivisional units, and maneuvers and controls the reserves.

In special situations, such as operations to break up enemy concentration or arrest an enemy advance, several cavalry corps may be placed temporarily under one commander. Army commanders must keep cavalry commanders currently informed of changes in the situation. The cavalry should be given the same definite mission as the other combat arms, and its instructions should be such as to prevent the cavalry leader from conducting an independent campaign of his own.

SECTION II

THE CAVALRY DIVISION

99. Characteristics.—The cavalry division is a large unit of great celerity of movement. It is the basic ground organization for the service of information and security of an army. It obtains both positive and negative information. It includes combat and administrative branches essential to make it self-sustaining. It possesses the fire power of small arms, machine guns, and artillery, and it can act independently or as part of other units. The fire power of a cavalry unit roughly equals that of the next smaller infantry organization. Acting alone or with other cavalry divisions, it can establish and maintain contact with the enemy several marches in advance of the army or group of armies; it can

avoid compromising engagements and retain its liberty of action; and it can maintain its line of communication and supply with its base of operations.

A cavalry division can march, without undue fatigue, at a pace double that of the infantry and maintain it for an extended period. In an emergency it can cover 125 miles in 48 hours, with its artillery and machine guns. When employed continuously on arduous service, cavalry deteriorates rapidly in combat efficiency. Cavalry commanders and higher commanders who are responsible for the employment of cavalry units, must conserve the strength of men and horses, and provide adequate opportunities for them to rest and recuperate. The facility with which cavalry can break off an engagement and take up successive positions, enables a single cavalry division to retard the advance of an army upon a wide front. In the movements and combinations of movements which precede the contact of masses of infantry on great fronts and which are decisive phases of a campaign, a cavalry division has an independence of action which gives it a rôle that can not be played by any other unit or arm of the service. It has its greatest and most indispensable usefulness as a covering unit at the beginning of a campaign and, during the campaign, as a strong mobile force capable of any class of action.

100. General employment.—Cavalry divisions cover the concentration of the army, screen its advance, and make distant reconnaissance. During battle, the mass of the cavalry is kept intact to operate against the enemy's flank or rear, to act as a mobile reserve, or to exploit a breakthrough of the enemy's lines. After battle, it may pursue the enemy or cover the retreat of its own force. Sometimes cavalry divisions are employed on raids or other special missions.

101. Distant reconnaissance.—Distant reconnaissance is carried out in accordance with the instructions of higher commanders. The instructions of the army commander to the cavalry division cover all pertinent information about the enemy forces and the friendly troops, the missions of the army, the intentions of the army commander, the mission of the cavalry division expressed in terms of the information required, the area to be covered, and other data depending on the mission and the situation.

Distant reconnaissance seeks to determine the areas of concentration of the enemy's forces; the routes and direction of movement of his main columns; the progress, depth, and width

of the movement; the strength and general composition of each column; the whereabouts of enemy columns and the general contour of the enemy's dispositions; his defensive organization; the strength and whereabouts of his general reserves; his supply installations, lines of supply, and activity along his lines of communication.

Cavalry and aviation are especially charged with distant reconnaissance. For efficient results, the combined action of the two is necessary. The aviation begins the reconnaissance, discovers the main enemy forces, and holds them under observation. The information gained by its reconnaissance indicates the direction of advance of the cavalry. Distant aerial reconnaissance covers broad areas in great depth; many essential details can be obtained only from the contact that results from the ground reconnaissance of the cavalry. An observation squadron is attached to the division to extend in depth the zone under observation by reconnaissance detachments and to secure the information which will give effective direction to the activity of the cavalry division. It assists the division commander in regulating the advance of the division by reporting the whereabouts of the various elements of his command, and by transmitting information between the division and its advanced units.

The army commander assigns to the cavalry division a zone of reconnaissance which ordinarily does not exceed 25 to 30 miles in width. The cavalry division commander redistributes this zone to reconnaissance detachments varying in strength and composition according to the enemy opposition expected and the relative importance of their missions. A reconnaissance detachment may have a strength varying from a troop to a regiment, reinforced in accordance with the requirements of its mission by machine guns, armored cars, and artillery. The division commander bases the distribution of zones of reconnaissance detachments upon the road net. He rarely assigns to a troop a reconnaissance zone more than 8 miles in width. In flank zones, he may indicate only the inner boundaries.

In distributing forces for reconnaissance and in assigning missions, the division commander gives due consideration to the points of most decisive importance to the mission of his division. He assigns greater strength and a more aggressive mission to detachments operating in decisive zones. In the beginning, when the situation is not clear, he will generally find it advisable to diminish the strength of reconnaissance detachments. The allotment of too large a proportion of the divisional strength to

reconnaissance results in inadequate support for the reconnoitering detachments and reduces the power of the division to engage in combat.

The cavalry division commander indicates the general route of the reconnaissance detachments within his zone of action and the line that its patrols are to reach daily. The distance between the reconnaissance detachments and the main body of the division varies with the situation; at times it may become several days' march. The division commander will not hold these detachments responsible for the security of the division, but will detail the necessary covering forces for its security.

Reconnaissance detachments communicate with the main body by radio, messengers, or other available means. In enemy territory special provisions for the protection of relay stations may become a duty of the division commander.

When the distance between the main bodies of the two opposing forces is so reduced that there is no longer room for operation, the cavalry division withdraws, generally to a flank. The reconnaissance detachments either come under control of the corps or are relieved and join the cavalry division.

Strategical reconnaissance may be considered as the normal duty of cavalry divisions when employed as army cavalry. Whether it should take precedence over counterreconnaissance depends upon the cavalry strength and the mission of the army. Cavalry action in successful reconnaissance usually accomplishes the purposes of counterreconnaissance.

102. Counterreconnaissance.—A cavalry division assigned a counterreconnaissance mission seeks to defeat or neutralize enemy ground reconnaissance forces. Before committing itself to an advance which might uncover its own army, the cavalry division endeavors to learn the position of the enemy cavalry whose whereabouts determines the direction of advance and the dispositions of the cavalry division.

Counterreconnaissance may be either offensive or defensive. A screening mission is most effectively accomplished by the defeat of the enemy reconnaissance forces. The dispositions of the division in offensive counterreconnaissance are similar to those prescribed for reconnaissance. Contact detachments operate aggressively and locate the principal enemy cavalry forces to prepare for the attack of the division. In defensive counterreconnaissance, which is most effective when established along a continuous obstacle, patrols are pushed to the front; and

the division commander disposes his forces so as to block the main routes of approach.

Cavalry divisions, when screening the concentration of armies, usually act defensively. They hold a line far enough to the front to keep enemy reconnaissance at a distance from the army.

103. Offensive combat.—The dispositions of the cavalry division for attack usually include a pivot of maneuver about which the command operates, a maneuvering mass charged with the main attack, and a reserve.

The division commander issues his orders to brigade commanders, to the commanders of artillery, engineers, and special troops, and to chiefs of services. In battle he coordinates the action of the brigades, directs the employment of the artillery, services, and engineers, and disposes of the division reserve. He normally employs the division artillery as a part of the pivot of maneuver. He designates the troops which constitute the pivot and the maneuvering mass and coordinates their efforts. His orders cover the posting of the fire units, the time of opening the fire attack, the designation of the place to which the maneuvering mass is to be sent, and the whereabouts of the reserve.

As soon as contact is foreseen, the division endeavors to secure points of observation and to deny them to the enemy.

In a meeting engagement, the advance guard establishes the pivot of maneuver. In a more deliberately prepared attack, a special force is detailed to establish it. The pivot of maneuver engages the enemy's attention and pins him to his position by a fire attack or by a combination of fire attack and maneuver. All automatic weapons and artillery that can be spared from the maneuvering mass are assigned to the pivot.

The maneuvering mass contains the main offensive power and often constitutes the greater part of the division. The division commander assigns to the leader of this fraction the accomplishment of the vital offensive action and allows him sufficient liberty of action to take full advantage of the developments of the situation. He informs him of the general plan, the mission of the maneuvering mass, and the duties of the other elements of the division. He frequently specifies the line of departure of the maneuvering mass and the route thereto. He should not dispatch the maneuvering mass until he obtains some definite information of the enemy's whereabouts. It is well, however, to engage the pivot of maneuver early and to dispose the remainder of the division so that it can readily operate around a flank.

The reserve is kept mounted or close to its horses. Its strength will vary from about one-sixth to one-third of the command. Its initial location depends upon its contemplated employment. Should the attack of the pivot or that of the maneuvering mass be successful, the division commander orders up the reserve promptly to occupy the position or to pursue the enemy. When the outcome of the attack is doubtful, he sends the reserve in to strike the enemy at the weakest point.

104. Defensive combat.—Cavalry divisions may be employed on the defensive to seize and hold a position pending the arrival of other forces, to cover a withdrawal, to delay the enemy's advance, or to fill a gap in the line of battle.

When operating against cavalry, the cavalry division usually adopts the active defense. A purely passive defense would compel the division to fight dismounted practically in its entirety. Isolated dismounted action against mounted troops exposes the command to the danger of envelopment.

105. Defense of a position.—The fundamental principles governing the deployment of the cavalry division are the same as those prescribed for the infantry division. The plan of defense is influenced by the tactical situation and the terrain. If the position is to be held for a limited time only, the defense may be passive. The development of defensive dispositions depends upon the time available for the organization of the ground. The supporting artillery is generally well forward in concealed positions that afford opportunity for direct laying with little movement of the guns.

In a hastily organized defense against infantry with little or no attached cavalry, the cavalry division deploys on a comparatively wide front in mutually supporting groups, with mounted reserves held under cover in rear of the firing lines. It holds lightly those positions of the firing line that have a good field of fire. The defense has little depth, but lack of depth is balanced by the speed with which threatened parts of the line can be reinforced by the mobile reserves. Should the enemy force include much cavalry, the division reserve should be large.

In the defense of a fortified position, the led horses are held immobile well in rear of the battle position. The depth of deployment is greater than in a hastily organized defense, and the defense is conducted in accordance with the principles prescribed for the infantry division.

106. Covering a withdrawal.—A cavalry division covering a withdrawal generally operates as an independent delaying

force, and is not confined to the zone of the withdrawing force. It may either interpose itself between the withdrawing and the pursuing forces, or operate from a flank against the pursuing columns.

The commander of a cavalry division detailed to cover a withdrawal determines in accordance with the ground and the tactical situation whether he can best check and delay the pursuit by occupying successive positions or by flanking the enemy's advance, and whether he can best employ the troops in mounted action, in a combination of mounted and fire action, or in fire action alone.

The cavalry division normally acts aggressively in covering a withdrawal. It holds out a maneuvering mass to disorganize the pursuit by action against the flanks of pursuing columns, and to punish overhasty pursuit by counteroffensive action.

The operations of the enemy cavalry may determine the dispositions and action of the covering cavalry division. Action by the cavalry of the pursuing force against the flanks and rear of the retiring force may require the employment of all of the friendly cavalry to oppose the enemy cavalry.

107. Delaying actions.—Against infantry, the cavalry division should exploit the advantage of its superior mobility. Usually it is distributed in two or more semi-independent groups. A portion of the division directly opposes the head of the enemy column, while another portion operates against its flank.

Against cavalry, the distribution of the delaying force into several semi-independent and widely dispersed groups would afford the enemy opportunity to defeat it in detail. When the enemy to be delayed has aggressive cavalry, the delaying cavalry division is kept well in hand. It utilizes terrain features which will not permit the enemy to deploy quickly and which do not readily lend themselves to the delivery of a mounted attack. Defiles, woods, and villages are useful for this purpose. It holds out a strong reserve.

108. On the flank of the army in battle.—The mission of the division on the flank of the army in battle may include the defeat and pursuit of the enemy cavalry, operations against the enemy's flank, rear, and communications and against his reserves, reconnaissance to the front and flanks, the prevention of enemy reconnaissance, the protection of the flank of the army, the pursuit of a defeated enemy, or the covering of the withdrawal of its own army.

The most favorable position for the cavalry division is frequently in advance of the flank of its own army. In the offensive, the flank to be chosen is the one where the decision will be sought. In the defensive, it is the one where it is thought the enemy will seek the decision. The cavalry division selects a position in which it is protected from the view and fire of the enemy both from the air and on the ground and from which it can take immediate action.

109. Exploiting a breakthrough.—The cavalry division moves to the vicinity of the main effort of the operation which is expected to break the enemy's line. The breach should be sufficiently wide to enable the cavalry division to pass through without receiving severe fire from the flanks. The infantry should clean it up, especially of machine guns, before the cavalry starts through.

In passing through the breach, the division selects routes near the median line, removed as far as practicable from enemy artillery and machine-gun fire. The mission assigned the division on clearing the breach conforms to the general plan of exploitation. This mission is clear-cut, aggressive, and should be relentlessly carried out.

110. Pursuit.—The cavalry division advances along roads parallel to the enemy's line of retreat, delivers repeated attacks against his flank, carries out destructions on his line of retreat, attacks convoys, and attempts to beat the enemy to defiles, bridges, and other critical points.

Where the main opposing forces are separated by sufficient distances the division is usually divided into three parts, which conduct, respectively, the direct, flank, and parallel pursuits. The force detailed to conduct the direct pursuit is generally small. The direct and flank pursuits deal with the enemy's rear guards. The parallel pursuit seeks to strike the enemy's main columns, dislocate his dispositions, and delay his retreat. The division commander must be on his guard against dispersion of effort.

The cavalry division, in pursuit, will generally operate beyond support of other troops under conditions which render communication with higher headquarters difficult and often impossible. It sacrifices, for the time being, its line of communications and depends upon such supplies as it can carry without loss of mobility and obtain by requisition or purchase. In the rapidly changing situation, the division commander must act on his own

initiative in conformity with his mission and the plan of the army commander.

CHAPTER 9

SPECIAL OPERATIONS

		Paragraphs
SECTION I.	River lines	111–113
II.	Woods and villages	114–116
III.	Mountain country	117–118
IV.	During periods of limited vision	119–121
V.	Coast defense	122–127

SECTION I

RIVER LINES

111. General.—The heights on the near side of many rivers constitute natural lines of defense, the river valleys form excellent fields of fire, and the rivers themselves constitute obstacles to attack. Likewise the heights on the far side of many rivers are natural lines of defense, and the valleys afford covered ground and excellent lateral communication in rear of the lines of resistance. Unless rivers are very wide, or the heights on the near side are close to the stream, rivers are not good lines of resistance. Usually the heights count for everything and the river for little, except as an obstacle and a clear field of fire in front of a good line of resistance.

112. Attack.—In approaching a river, a commander should seize the crossings and the heights beyond the river, by sending forward his cavalry, with engineers and infantry in motor trucks. If the enemy has occupied a defensive line on the near side, the problem of crossing does not arise until he has been driven beyond the river. If he occupies a defensive position on the farther side, the commander should undertake operations on a wide front and make demonstrations at various points on the river in order to deceive the enemy as to his real intentions. He should provide means for ferrying troops across the stream for the initial crossings, and should provide one or more bridges for each division, and furnish the necessary antiaircraft defense.

The commander of a large force must use dexterity and dispatch in crossing a river. The celerity with which troops may be moved over great distances by modern transportation should enable the commander to make a surprise crossing which will react on the defense of other parts of the river, compel a

general withdrawal, and open the way for the passage of the command along the entire front. Salients toward the attacking forces, which enable them to concentrate fire on the defenders, and ground dominating the opposite bank are favorable places for forcing a crossing. A commander should generally move his troops at night into positions for forcing a crossing, send the first troops across during the hours of darkness, and commence the passage shortly before dawn, in order to facilitate the subsequent advance.

The commander of a unit which is a part of a larger force will hold out the necessary reserve, support the crossing by artillery and machine-gun fire, protect daylight crossing by smoke, and direct the first troops across to take up positions to cover the crossing of the rest of the command. If he has more than one bridge, he will assign crossing zones to infantry units, with artillery and engineer units attached.

113. Defense.—If a good defensive position exists along a river, a commander should take full advantage of the river as an obstacle in front of his position, provided the course of the river conforms to the tactical and strategic situation. If the river is wide, its banks may in themselves form a good defensive position.

If there is no good defensive position along the river, a commander will probably find that the best use of the river will be as an aid to counteroffensive action in striking the enemy's forces while they are astride the river. He should hold his troops in favorable positions at such distances to the rear that they may intervene where a crossing may be attempted. He should watch the river carefully with relatively weak detachments. He should push reconnaissance patrols beyond the river, make full use of air observations to detect enemy movements and p obable points of crossing, and employ bombardment and attack aviation against enemy crossings and bridges.

Section II

WOODS AND VILLAGES

114. Military features.—Direct attack against woods and villages is particularly difficult. They screen the dispositions of the defender, afford material protection to his men, and enable him to create artificial means for directing the progress of the attacking troops along desired channels. They are especially favorable to delaying action.

115. Attack.—Unless a direct attack is necessary, a commander will reduce woods and villages by fire and outflanking operations, or neutralize them by gas and smoke. The edge of a wood is attacked like any other position and then used as a line of departure for an advance through the woods. Against a tenacious enemy in a large wood, it may be necessary to make a methodical step-by-step advance under the protection of artillery fire, placed so as to cut off the enemy's front-line units from his support and reserves.

Woods and villages afford excellent bases of departure for an attack. They screen troops in shelter, mask their concentration for battle, and conceal the positions of reserves, supplies, and artillery.

116. Defense.—A commander should take full advantage of woods and villages as supporting points in a line of defense, as delaying points, and as points of departure for counterattacks. He should use such obstacles as a means to direct the progress of the enemy along desired channels. He should establish successive lines of resistance in the interior of the woods and villages and provide protection for their flanks and rear. He should carefully avoid placing firing lines at the edges of woods and villages, where they are exposed to accurate artillery fire.

Large woods, especially those with tall trees and dense underbrush, afford protection against the effects of fire, but lend themselves to gas concentrations.

Section III

MOUNTAIN COUNTRY

117. Attack.—Mountains are the easiest to defend and the most difficult to attack of all the obstacles found in nature. Success in mountain operations depends upon sudden and unexpected attack, a thorough knowledge of roads and trails through the mountains, and the establishment of good communications after the attacking forces have passed the mountains. Commanders in chief should endeavor to turn mountain positions, by operations in lower and more level regions, where communications are better and defensive positions less effective. They should employ upon each important road through the mountains a tactically independent column capable of conducting an operation by its own means and of defending its own communications. They should supply each column with ample automotive transportation, where it can be used, pack artillery and pack trains,

service troops for the construction and repair of roads, and antiaircraft artillery for the defense of passes. They should place adequate aircraft at the disposal of each column commander for the attack of passes.

118. Defense.—In defense, a higher commander must be on his guard against being lulled into a false security by the natural difficulties of mountain frontiers. He must block the communications and passes, occupy the heights dominating them, provide ample artillery, antiaircraft, machine-gun, and infantry defense, and exercise a ceaseless vigilance against surprise attack. He should establish his first line of defense upon the farther side of the farthest chain of mountains in the direction of the enemy. He must prepare plans and improve communications for counterattack against any columns that may penetrate the defenses. In no other kind of warfare can personnel be economized to better advantage by a judicious use of material and prepared positions.

SECTION IV

DURING PERIODS OF LIMITED VISION

119. Advantages and limitations.—Operations at night and at other times when vision is limited may be undertaken to concentrate troops secretly for battle, to cross zones swept by enemy fire by day, to organize the ground, to press a success previously obtained, to regain lost ground, to pursue the enemy, or to gain favorable positions for attack.

Night combat is characterized by a decrease in effectiveness of aimed fire, by difficulty in movement, troop leading, and the maintenance of direction, cohesion, and communication, and by a greater susceptibility to panic on the part of the troops. Night conditions are especially favorable to aerial bombardment, but they decrease the effectiveness of aerial reconnaissance.

120. Attack.—Surprise and previous daylight reconnaissance are essential to success in night operations. The commander must not disclose his intentions by his daylight preparations. He should use simple but dense formations, formulate his orders with extreme definiteness and detail, and employ his best troops. He should obtain coordination between his various units and columns by assigning to each a definite attack direction and a limited objective, and by the use of liaison groups between adjacent units, combat patrols, special insignia, and connecting files at reduced intervals and distances.

In order to guard against the demoralization of supporting troops in the event of a repulse, and to limit enemy pursuit, reserves, in night operations, should be echeloned to the rear and flanks of attacking units so as to be within supporting distance without being involved in the possible flow of retreat.

A major offensive with a distant objective is seldom launched at night. The troops use the hours of darkness to execute preparatory measures for great offensives, move into assembly positions, fire artillery preparation, carry out local attacks preparatory to the main attack, and execute operations to deceive the enemy as to the time and place of the main attack.

Army and higher commanders should carefully study weather conditions, when they contemplate major offensives, in order to take advantage of fog and other causes that limit vision. They must take precautions against a sudden clearing. Conditions which limit vision restrict their own and the enemy's aerial reconnaissance.

121. Defense.—To avoid surprise, a commander on the defensive must look to vigilant reconnaissance, night illumination, careful preparation, the fire of fixed weapons, obstacles, denser formations, and counterattack.

SECTION V

COAST DEFENSE

122. Joint mission of Army and Navy.—It is the general function of the Army in coast defense to conduct land operations in defense of United States territory. It is a general function of the Navy in coast defense to conduct sea operations in defense of United States territory and interests upon the sea; the specific functions of naval local defense forces are to control coastal zones and sea lanes, to conduct sea operations directed toward the defeat of any enemy force in the vicinity of the coast, and to support the Army in repelling attacks on coastal objectives. Coast defense is, therefore, a joint Army and Navy mission. Its purposes are to protect our coastwise shipping, to destroy the enemy forces operating on our coasts, and to repulse all enemy attacks against our shores.

Close cooperation between Army and Navy commanders in the preparation and execution of defense plans is essential. To insure effective coordination between the Army and Navy in coast defense, a joint organization has been established,

subdividing the frontiers and designating Army and Navy commanders responsible in these subdivisions for peace-time planning and the execution of such security measures as may be necessary on the outbreak of war. This subdivision provides coastal frontiers, sectors, subsectors, and defensive coastal areas in which both Army and Navy forces may find joint employment. It also contemplates defensive sea areas which are essentially naval with respect to responsibilities and forces. The means that may be available for coast defense are the fleet, naval local defense forces pertaining to the naval districts, harbor-defense troops, and field forces.

123. Reconnaissance.—The primary duty of the reconnoitering forces, land and naval, is to observe and report the movements of the enemy. They should not engage in offensive operations which will interfere with this primary duty. They should spare no means to obtain early information of the whereabouts of the enemy force at sea and to follow the movements of this force, for the purpose of determining the probable places of landing.

124. Naval operations.—The fleet by its operations at sea may protect strategically all or part of our coast line. To do so, it must retain its freedom of movement. When a fleet or any of its important units permit themselves to be immobilized in harbor by close blockade, they invite siege operations. Within a harbor, beleaguered by land and sea, naval units are a liability rather than an asset.

The naval local defense forces pertain to the naval districts and consist of aircraft and any available ships, such as small submarines, mine vessels, aircraft tenders, and local vessels taken over in time of war for naval purposes. Their primary functions are to gain and maintain contact with enemy forces, to report all movements of vessels in the adjacent coastal zone, and to conduct shipping. They also use every available means, consistent with their primary functions, to interfere with the enemy forces at sea in order to prevent or delay their approach. A task force of these naval local defense forces, termed the "Inshore Patrol," is charged with the conduct of shipping, and works closely with the harbor-defense forces by patrolling the outer harbor area and by giving information of all marine movements.

125. Close defense.—When an attack in force is threatened, combat aviation and the submarine force are kept united and well in hand to seize favorable opportunities to attack the enemy

forces, especially carriers and transports. Such opportunities will be offered by the enemy, if he attempts to land simultaneously at two or more places so widely separated as to make it impossible for his navy to provide adequate surface, subsurface, and air protection. Long-range artillery and bombing airplanes will be used to keep craft threatening a landing as far off shore as possible. The harbor-defense troops maintain and operate the essential harbor defenses designed to prevent ingress, by air, land, or water, into areas covered by the fixed defenses. The field forces reinforce the harbor-defense troops and oppose enemy landings and air attacks.

126. Beach defense.—History is replete with lost opportunities for making effective beach defense. When landings in force are threatened, favorable landing places should be guarded by the field forces, and the less favorable observed. A determined defense at the water's edge, supported by strong reserves, is the basis of a successful beach defense. The ground in the vicinity of each favorable or critical landing place should be organized with a view to firing upon the enemy as he approaches and lands. Obstacles, both on shore and under the water, covered by fire, are important features of such defenses. All organized localities should be prepared for a determined defense and amply supplied with machine-gun and other infantry weapons. Successive positions should be constructed to the rear and on the flanks of favorable landing places to delay the enemy advance, if he effects a landing. Higher commanders should inspect personally the arrangements for beach defense.

In the defense against landing operations, the most important targets for artillery and aviation bombardment are, normally, transports or carriers, small boats approaching the shore, and troops as they land.

127. Reserves.—The defense commander should place his reserves in a central position, improve the roads to critical areas, provide detrucking points, and hold ample motor transportation in hand for quickly transferring his reserves to strike a decisive blow at the enemy's main effort, wherever it may come. He must guard against piecemeal action and dispersion of effort in the employment of his reserves. If the enemy secures a foothold ashore, the local forces should box him in by occupying trenches previously prepared. They should promptly counterattack while he is handicapped by the disorganization incident to landing, and lacks space to maneuver. If the enemy succeeds in establishing a beach head, the defense commander will make

every effort to prevent its extension, particularly towards a harbor offering better landing facilities. If the enemy effects a landing at more than one place, the defense commander must determine which is the most important. He must ignore, contain, or delay the less important attacks, and strike with his forces united against the enemy's main body.

APPENDIX

COMPOSITION AND APPROXIMATE AGGREGATE STRENGTH OF A FIELD ARMY, ARMY CORPS, INFANTRY DIVISION, CAVALRY CORPS, AND CAVALRY DIVISION

(Organizations change; for detailed data consult current Tables of Organization)

Units and composition	Approximate aggregate strength
1. FIELD ARMY (war strength)	335, 035
Army headquarters	(105)
Special troops	(10, 328)
Headquarters.	
Headquarters company.	
1 military police company.	
8 service battalions, Q. M. C.	
1 field remount depot.	
Army artillery	(847)
Army artillery headquarters.	
Army ammunition train.	
Attached ordnance company.	
Army ordnance service	(1, 219)
Army ordnance headquarters.	
1 ordnance company (headquarters).	
3 ordnance companies (ammunition).	
3 ordnance companies (depot).	
1 ordnance company (maintenance).	
Brigade, antiaircraft artillery	(5, 582)
Headquarters and headquarters battery.	
3 regiments.	
1 regiment.	
Headquarters and headquarters battery.	
Service battery.	
1 gun battalion.	
1 machine-gun battalion.	

Units and composition	Approximate aggregate strength
1. FIELD ARMY—Continued.	
Army engineer service	(13, 377)
Army engineer headquarters.	
3 general service regiments.	
1 regiment.	
Regimental headquarters and band.	
Headquarters and service company.	
2 battalions.	
6 separate battalions.	
2 heavy ponton battalions.	
2 light ponton companies.	
1 camouflage battalion.	
1 depot company.	
1 water supply battalion.	
1 topographical battalion.	
1 shop company.	
1 dump truck company.	
1 motor repair section attached.	
Army aviation	(2, 057)
Headquarters.	
1 observation group.	
Headquarters and headquarters squadron.	
Service squadron.	
4 observation squadrons.	
4 airdrome squadrons.	
1 attached ordnance company (maintenance).	
Army medical service	(11, 540)
Headquarters, army medical service.	
4 medical regiments.	
1 regiment.	
Regimental headquarters and band.	
Service company.	
Veterinary company.	
Collecting battalion.	
Ambulance battalion.	
Hospital battalion.	

Units and composition	Approximate aggregate strength
1. FIELD ARMY—Continued.	
Army medical service—Continued.	
12 evacuation hospitals.	
10 surgical hospitals.	
1 convalescent hospital.	
1 medical laboratory.	
1 medical supply depot.	
3 veterinary evacuation hospitals.	
1 veterinary convalescent hospital.	
Army signal service	(1,681)
Headquarters, army signal service.	
2 signal battalions.	
1 meteorological company.	
1 photographic company.	
1 pigeon company.	
1 radio company.	
Army train, Q. M. C	(6,796)
Headquarters.	
3 motor transport commands.	
19 motor transport companies.	
2 motor cycle companies.	
4 motor repair sections.	
4 motor repair battalions.	
Attached Medical Department personnel	(881)
Attached chaplains	(38)
3 army corps	(261, 060)
2 cavalry divisions	(19, 524)
2. ARMY CORPS (war strength)	87, 020
Headquarters	(60)
Special troops	(3,232)
Headquarters.	
Headquarters company.	
Signal battalion.	
Military police battalion.	
Service battalion, Q. M. C.	
Field remount depot.	
Ordnance company (ammunition).	
Ordnance company (heavy maintenance).	

Units and composition	Approximate aggregate strength
2. ARMY CORPS—Continued.	
Corps artillery	(6, 520)
Corps artillery headquarters.	
Brigade.	
Headquarters and headquarters battery.	
Ammunition train.	
Observation battalion (flash).	
2 regiments, 155-mm. howitzers.	
1 regiment.	
Regimental headquarters and headquarters battery.	
Service battery.	
3 battalions.	
1 regiment, 155-mm. guns.	
Regimental headquarters and headquarters battery.	
Service battery.	
3 battalions.	
1 ordnance company (maintenance) attached.	
Antiaircraft regiment	(1, 829)
Regimental headquarters and headquarters battery.	
Service battery.	
1 gun battalion.	
1 machine-gun battalion.	
Corps engineer service	(4, 742)
Corps engineer headquarters.	
3 separate battalions.	
1 general service regiment.	
Regimental headquarters and band.	
Headquarters and service company.	
2 battalions.	
1 light ponton company.	
1 depot company.	
Corps aviation	(1, 741)
Corps aviation headquarters.	
1 observation group.	
1 balloon group.	

Units and composition	Approximate aggregate strength
2. ARMY CORPS—Continued.	
Corps medical service	(969)
Headquarters, corps medical service.	
1 medical regiment.	
Regimental headquarters and band.	
Service company.	
Veterinary company.	
Collecting battalion.	
Ambulance battalion.	
Hospital battalion.	
Corps train, Q. M. C.	(2,879)
Train headquarters.	
5 motor transport commands.	
25 motor transport companies.	
2 motor cycle companies.	
8 motor repair sections.	
Wagon train.	
Attached Medical Department personnel	(465)
Attached chaplains	(14)
3 infantry divisions	(64,569)
3. INFANTRY DIVISION (war strength)	21, 523
Division headquarters	(43)
Special troops	(946)
Headquarters.	
Headquarters company.	
Light tank company.	
Military police company.	
Ordnance company (maintenance).	
Service company, Q. M. C.	
Signal company.	
2 infantry brigades	(12,232)
1 brigade.	
Headquarters and headquarters company.	
2 infantry regiments.	
1 regiment.	
Regimental headquarters and band.	
Headquarters company.	
Service company.	
Howitzer company.	
3 battalions.	

Units and composition	Approximate aggregate strength
3. INFANTRY DIVISION—Continued.	
1 artillery brigade	(5,159)
Brigade headquarters and headquarters battery.	
Ammunition train.	
2 regiments, 75-mm. guns.	
1 regiment.	
Headquarters and band.	
Headquarters battery.	
Service battery.	
2 battalions.	
1 regiment, 155-mm. howitzers.	
Regimental headquarters and headquarters battery.	
Service battery.	
3 battalions.	
1 medical regiment	(961)
Regimental headquarters and band.	
Service company.	
Veterinary company.	
Collecting battalion.	
Ambulance battalion.	
Hospital battalion.	
Division surgeon's office.	
1 combat regiment, Corps of Engineers	(845)
Regimental headquarters and band.	
Headquarters and service company.	
2 battalions.	
Division train, Q. M. C	(708)
Train headquarters.	
4 motor transport companies.	
2 motor repair sections.	
1 motorcycle company.	
2 wagon companies.	
Attached Medical Department personnel	(614)
Attached chaplains	(15)
4. CAVALRY CORPS (war strength)	29, 763
Corps headquarters	(107)
Headquarters troop	(112)
Signal troop	(169)

Units and composition	Approximate aggregate strength
4. CAVALRY CORPS—Continued.	
Headquarters and headquarters battery, Field Artillery brigade	(89)
3 cavalry divisions	(29, 286)
5. CAVALRY DIVISION (war strength)	9, 762
Division headquarters	(27)
Special troops	(546)
Headquarters and headquarters troop.	
Signal troop.	
Light tank company.	
Ordnance company (maintenance).	
2 cavalry brigades	(5, 772)
1 brigade.	
Brigade headquarters and headquarters troop.	
2 cavalry regiments.	
1 regiment.	
Regimental headquarters and band.	
Headquarters troop.	
Machine-gun troop.	
3 squadrons.	
1 regiment, 75-mm. guns (horse)	(1, 658)
Headquarters and headquarters battery.	
Service battery.	
2 battalions.	
Combat engineer battalion (mounted)	(345)
Headquarters.	
Headquarters and service platoon.	
3 companies.	
Division air service	(222)
Headquarters.	
1 observation squadron.	
1 photo section.	
Armored car squadron	(278)
Headquarters.	
3 troops.	
Medical squadrons	(220)
Headquarters.	
Collecting troop.	
Ambulance troop.	

Units and composition	Approximate aggregate strength
5. CAVALRY DIVISION—Continued.	
Medical squadrons—Continued.	
Hospital troop.	
Veterinary troop.	
Division train, Q. M. C	(406)
Train headquarters.	
2 motor transport companies.	
1 motor repair section.	
1 wagon company.	
4 pack trains.	
Attached Medical Department personnel	(281)
Attached chaplains	(7)

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