FIELD SERVICE
REGULATIONS
OPERATIONS

DEPARTMENT OF THE ARMY
AUGUST 1942

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DEPARTMENT OF THE ARMY

Washington 25, D. C., 15 August 1949

FM 100-5, Field Service Regulations—Operations, is published for the information and guidance of all concerned.

[AG 300.7 (9 Jun 49)]

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OMAR N. BRADLEY
Chief of Staff, United States Army

OFFICIAL:
EDWARD F. WITSELL
Major General
The Adjutant General

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FOREWORD

FM 100-5, Field Service Regulations, Operations, contains the doctrines of leading troops in combat and the tactics of the combined arms. It constitutes the basis of instruction of all arms and services for field service.

These field service regulations will be interpreted in the light of FM 27-10, Rules of Land Warfare, and should be studied in connection with FM's 31-35, Air-Ground Operations; 100-10, Field Service Regulations, Administration; and 100-15, Field Service Regulations, Larger Units.

While the fundamental doctrines of combat operations are neither numerous nor complex, their application sometimes is difficult. Knowledge of these doctrines and experience in their application provide all commanders with a firm basis for action in a particular situation. Knowledge and experience also enable the commander to utilize the flexible organization with which he is provided to group his forces into task units most suitable for the accomplishment of his mission.

Set rules and methods must be avoided. They limit imagination and initiative which are so vital in the successful prosecution of war. They provide the enemy a fixed pattern of operations which he can counter more easily.

The fundamental principles of combat remain unchanged, but doctrine and tactics must be modified with each major advance in weapons, transportation, and other devices applicable to warfare. In general, developments favorable to the offensive are followed by developments or measures which counter their effectiveness. If decisive effect and surprise are to be achieved, it is essential that the tactics and technique of employment of a new development are kept abreast of the progress of the development itself.

The projection of the tactical effect of a new development must be based upon a realistic consideration of the characteristics of the development, and an equal progression in development in all other fields. Thus a weapon, whose deadliness dictates increased dispersion to reduce casualties, may be offset by developments in signal communication and transportation, which permit the desired dispersion without reduction in cohesion and control.
Reasoned conclusions concerning the actual effect of a new development form the basis for new tactical doctrine. In the vast majority of instances, a new development merely extends the capabilities of existing agencies without necessitating radical revision of existing doctrine. Thus within the scope of existing tactics and doctrine, ground launched guided missiles extend the range and power of artillery. In exceptional cases a development may possess potentialities which dictate radical revision of the conduct of tactical operations. Thus the crossbow, firearms, the machine gun, and the airplane, in turn resulted in major changes in the tactical doctrine of their periods.

The analysis of the impact of new developments upon the doctrine and tactics of the combined arms must be accurate, constant, and detailed. Military thought must be realistic and alert to modify the doctrine set forth in these regulations in the light of new developments. A considered balance between the conflicting dictates of secrecy and the dissemination of information requisite to the development of sound doctrines of employment must be maintained, if timely realistic employment is to be practicable.

These field service regulations reflect policy, doctrine, and procedures current at the time of preparation. Tactical and technical developments and organizational changes of the Army will necessitate correction and modification of the manual from time to time. Recommendations for corrections or changes should be forwarded to the Commandant, Command and General Staff College, for consideration and inclusion in future changes to the manual.

Modern warfare demands close coordination of the tactics and techniques and careful evaluation of the capabilities and limitations of Army, Navy, and Air Force. A salient function of command is the development, in the forces employed on a given task, of the teamwork essential to success.
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For further details, see FM 31–20.

(Superseded) For further details of the conduct of guerrilla operations, see FM 31–20.

Rescinded.

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[AG 300.7 (15 Jul 52)]

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:
WM. E. BERGIN
Major General, USA
The Adjutant General

J. LAWTON COLLINS
Chief of Staff, United States Army

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For explanation of distribution formulas, see SR 310–50–1.
CHAPTER 1
ORGANIZATION

Section 1. TERRITORIAL ORGANIZATION

1. The theater of war comprises those portions of land, sea, and air which are directly involved in the conduct of war.

2. A theater of operations comprises a designated portion of the land, sea, and air in the theater of war in which military operations are conducted. Territorial responsibilities are assigned and are under the direction of the theater commander.

3. The combat zone comprises that part of the theater of operations required for the conduct of war by the field forces. Its depth may be dependent upon the size of the forces assigned, the nature of the operations contemplated, the character of the lines of communications, the important terrain features, and the enemy capabilities. It may be divided for tactical control into army group, field army, corps, and division areas; each is controlled by the commander of the corresponding unit. The rear boundary of the combat zone is designated by the theater commander and is changed to conform to the movement of the armed forces.

4. The communications zone includes all the territory of the theater of operations between the rear boundary of the theater and the rear boundary of the combat zone. Laterally, it usually is coextensive with the theater boundaries. The communications zone also provides area for the operation and defense of the supply, evacuation, transportation, service, and other administrative agencies required for rendering support to the combat zone.

For military terms not defined in this manual, see TM 20–305; for list of training publications, see SR 310–20 series; for training films, film strips, and film bulletins, see FM 21–7; and for training aids, see FM 21–8.
It may include areas necessary for the operation or support of Air Force units based outside the combat zone. It is a link in the chain of supply and evacuation between the combat zone and the zone of interior.

5. The zone of interior comprises the area of national territory exclusive of theaters of operations but, under certain circumstances, may include foreign territory, either allied, neutral, or hostile.

Section II. TROOP ORGANIZATION

6. Troop organization includes command, combat (tactical), and service (administrative) elements. Most tactical units contain service elements and have some administrative functions. Troop units, either combat or service, are not designated as administrative unless they perform all, or nearly all, administrative functions for their components.

7. The Army of the United States is organized to provide, under the Secretary of the Army and the Chief of Staff, a Department of the Army general staff, a special staff, and administrative and technical staffs and services; and such army areas in the zone of interior and in overseas commands as may be necessary to the national security. The organization also includes the Office, Chief, Army Field Forces, which is the field operating agency of the Department of the Army within the continental limits of the United States, for the general supervision, coordination, and inspection of all matters pertaining to the training of all individuals and units utilized in a field army.

8. The mission of the Army is to provide field units properly organized, trained, and equipped for combat operations; to provide Army units for attachment to the Air Force for performance of prescribed functions; to provide common type support for the Navy and Air Force as directed; and under the general plan of the Department of the Army to prepare for, and on order or in imminent emergency to execute, planned operations for the defense of the United States.

9. The armed forces in the field consist of components of the Army, Navy, and Air Force organized separately, or in combination, into commands in theaters of operations, task forces, defense commands, and the other commands as may be required for national defense.
10. Several field armies may be organized into a group of armies under a designated commander. Such a group is primarily a tactical command.

11. A field army is composed of a headquarters, certain organic army troops, a variable number of corps, and a variable number of divisions. Some or all of the divisions may be assigned or attached from time to time to corps. The army is an administrative as well as a tactical unit.

12. A corps consists of a corps headquarters, certain organic and attached corps troops, and such combat divisions as may be attached to it. The corps is primarily a tactical unit. In some situations, it also may be an administrative unit.

13. The division is the basic large unit of the combined arms. It comprises a headquarters; infantry, armored, or airborne units; artillery units; and certain other troops of the arms and services. It is an administrative as well as a tactical unit.

14. A brigade is primarily a tactical unit composed of two or more regiments or groups of the same arm, together with a headquarters and headquarters company, or similar unit. A brigade may include units of other arms and services and may have administrative functions.

15. A group is a flexible organization consisting of a headquarters and two or more attached units, usually battalions, combined under one superior headquarters for the purpose of accomplishing a tactical, logistical, or administrative mission.

16. The regiment is a fixed unit which includes both administrative and tactical units. Ordinarily, the regiment consists of a headquarters; a headquarters company, and a service company, either separate or combined; and two or more battalions or similar units. It also may include one or more companies or similar units in which certain special weapons and means are assembled for tactical purposes, economy, instruction, and administration.

17. The battalion or similar unit is the basic tactical unit. It is composed of a headquarters; two or more companies or similar units; and certain special units, organic or attached. Unless organized as a separate battalion, it has few administrative functions.

18. In each arm or service, the company, battery, or similar unit is the basic administrative unit. It contains all the agencies re-
quired for subsistence, interior economy, and administration. For purposes of tactical control and training each company is subdivided into smaller units.

19. For economy and flexibility in the assignment of tasks, the means not habitually required by a unit are pooled and organically assigned to a higher unit. This facilitates the allotment of weapons and services to subordinate units, in accordance with their requirements for particular operations. Examples of this type organization are the heavy weapons company of the infantry battalion, the service company of the infantry regiment, and the artillery units of General Reserve Artillery.

20. a. To insure unity of effort, or to increase readiness for combat, part or all of the subordinate units of a command may be formed into one or more temporary tactical groupings (task forces), each under a designated commander. In each task force, the integrity of component tactical units is preserved as far as practicable.

b. In an armored division, the “combat command” is a tactical headquarters with its own headquarters company, designed for the tactical control of suitable temporary tactical groupings of armored cavalry and armored infantry battalions and essential elements of other arms in suitable proportion.

c. In an infantry division, the “combat team” normally will be composed of an infantry regiment, a light field artillery battalion, an antiaircraft artillery battery, and a company of combat engineers. In some situations a combat team may need other attachments, such as an ambulance platoon and a clearing platoon from the medical battalion, a signal detachment from the signal company, additional field artillery, or other units. The combat team will operate under the command of the infantry regimental commander.

21. a. For details of organization of the field forces and major items of equipment, including weapons and transportation, see current Department of the Army tables of organization and equipment.

b. For additional details relative to territorial organization, see FM 100–10.
CHAPTER 2

ARMS AND SERVICES

Section 1. GENERAL

22. a. The terms "arms" and "services" are used to designate the branches of the Army. The term "arms" is used to designate those branches of the Army whose primary mission is combat and combat support. The term "services" refers to those branches of the Army primarily concerned with combat support and/or administration. Some of the branches have essential missions in both fields.

(1) Arms—
   (a) Infantry.
   (b) Armored Cavalry.
   (c) Field Artillery.
   (d) Coast Artillery.
   (e) Corps of Engineers.
   (f) Signal Corps.

(2) Services—
   (a) Adjutant General’s Department.
   (b) Chemical Corps.
   (c) Chaplains.
   (d) Corps of Military Police.
   (e) Finance Department.
   (f) Inspector General’s Department.
   (g) Judge Advocate General’s Department.
   (h) Medical Department.
   (i) Ordnance Department.
   (j) Quartermaster Corps.
   (k) Signal Corps.
   (l) Corps of Engineers.
   (m) Transportation Corps.

b. Branches having missions in the service fields are grouped as follows:
(1) Administrative Service—
   (a) Adjutant General's Department.
   (b) Chaplains.
   (c) Corps of Military Police.
   (d) Inspector General's Department.
   (e) Judge Advocate General's Department.
   (f) Finance Department.

(2) Technical Services—
   (a) Chemical Corps.
   (b) Corps of Engineers.
   (c) Quartermaster Corps.
   (d) Transportation Corps.
   (e) Ordnance Department.
   (f) Signal Corps.
   (g) Medical Department.

23. No one arm wins battles. The combined coordinated action or
team work of all arms and services is essential to success. The
characteristics of each arm and service adapt it to the performance
of its special functions. The higher commander coordinates and
directs the action of all, exploiting their powers to attain the ends
sought.

Section II. INFANTRY

24. The infantry is essentially an arm of close combat. Its primary
mission in the attack is to close with the enemy and destroy or
capture him; in defense, to hold its position and repel the hostile
attack.

25. The weapons of infantry are rifles, bayonets, automatic rifles,
machine guns, mortars, carbines, pistols, grenades, light antitank
weapons, recoilless rifles, flame throwers, and tanks.

26. Infantry fights by combining fire, movement, and shock action.
By fire, it inflicts losses on the enemy and neutralizes his combat
power; by movement, it closes with the enemy and makes its fire
more effective; by shock action, it completes the destruction of the
enemy in close combat.

27. Infantry can maneuver over difficult ground. Its ability to
move in small and inconspicuous formations enables it to take
advantage of covered routes of approach and minor accidents of
the terrain. It must utilize the terrain intelligently to attain maximum fire effect, to conserve personnel, to conceal movement, and to facilitate the maneuver and employment of reserves. Among other factors, the battle effectiveness of infantry is affected by conditions of morale, weather, terrain, physical efficiency, and the nature of the operations. Continued operation under adverse conditions will render infantry less effective. Commanders must insure rest and reorganization within the command by rotating units, by close supervision of supply of critical items necessary for the comfort of the command, and by proper and adequate medical care and evacuation.

28. Infantry is capable of some limited independent action by employing its own weapons. Acting alone, its offensive power decreases appreciably when its freedom of maneuver is limited or when it is confronted by an organized defensive position. For decisive operations, infantry must be reinforced adequately by artillery, armored cavalry, and engineers. Coordination with combat aviation is also essential. The defensive power of infantry reaches its maximum when it occupies a strongly organized defensive position and the enemy's freedom of maneuver is restricted.

29. Infantry units completely motorized are suited especially for the close support of armored units or for prompt dispatch as mobile reserves to distant areas accessible by road. Infantry troops, with equipment and supplies, also may be moved by air or water transport to seize decisive objectives or to operate in the enemy's rear area.

30. For infantry organization and tactics, see tables of organization and equipment and FM's, series 7.

Section III. ARMORED CAVALRY

31. Armored cavalry is an arm of mobility, armor-protected fire power, and shock action. It uses its mobility in exploitation, in pursuit, in seizing objectives deep in enemy rear areas, in reconnoitering over broad frontages, and providing depth and wide radius of action in defense. It concentrates its fire power at the decisive area of action to lead, accompany, or support infantry in the penetration of the enemy's defenses, and to destroy enemy penetrations. It utilizes its shock action to close with and destroy the enemy.

32. The weapons of the armored cavalry are tanks, self-propelled guns and howitzers, machine guns, mortars, rocket launchers, sub-
machine guns, carbines, pistols, rifles, bayonets, automatic rifles, and grenades. Of these, the tank is the principal weapon. While these weapons correspond closely in type to those found in the infantry, the proportion of the numbers of each is different and is based on the different requirements and missions assigned to armored cavalry units.

33. Reconnaissance usually is performed by light armored cavalry units which employ rapidity and flexibility of movement, communication facilities, and fire power. Sustained offensive or defensive combat is avoided. The capabilities of light armored cavalry include both distant and close ground reconnaissance, counterreconnaissance, seizing and holding critical terrain features for a limited time, march and battlefield security, flank security, combat liaison, and delaying and harassing action. Reconnaissance units fight on a relatively broad front and in slight depth. In performing any of their missions these units customarily contribute to the security of the larger command and its elements by reporting locations and strengths of enemy forces and by providing timely warning of impending ground and air attacks. Information is transmitted directly to higher headquarters and to units whose security is threatened.

34. The armored attack is thrust quickly through the enemy defensive organization on a relatively narrow front. It employs a mass of armor in close coordination with other arms and supported by tactical air. Armored action requires large quantities of supplies and effective periods of vehicular maintenance. It is restricted by unfavorable terrain, obstacles, and weather.

35. The defense is assumed when the situation requires it. The armored cavalry is primarily an arm of offense with characteristics and capabilities designed for that role. Vigorous defense, however, is included in the capabilities of the armored cavalry. Even when pressing the attack, there are times a portion of the armored cavalry force engaged will temporarily assume the defensive while reorganizing, resupplying, or preparing to resume an attack which has not gained its final objectives.

36. For armored cavalry organization and tactics, see tables of organization and equipment and FM's, series 17.

Section IV. ARTILLERY

37. a. The artillery comprises two general types: field and antiaircraft. Its armament consists of guns, howitzers, mortars,
rockets, guided missiles, automatic weapons, and controlled submarine mines.

b. For artillery organization and tactics see tables of organization and equipment and FM's, series 6 and 44.

FIELD ARTILLERY

38. a. Field artillery is the principal arm of fire support. Its missions are the close support of the other arms; counterbattery fires to gain superiority over the hostile artillery; fires against hostile reserves and command, communication, and supply installations; and other long-range fires.

b. Field artillery is equipped with mobile guns, howitzers, rockets, and the equipment required for observation, fire control, and signal communication.

39. Field artillery fire possesses great power of destruction and neutralization. It compels hostile troops in the open to adopt widely deployed formations and has adverse morale effect. Fire from curved-trajectory weapons reaches objectives lacking adequate overhead cover and those defiladed against flat-trajectory weapons.

40. Field artillery fire possesses a high degree of flexibility. Field artillery is capable of intervening over a zone of great width and depth, and of rapidly shifting and concentrating its fire without changing its position. This characteristic makes it possible to concentrate the fire of large masses of field artillery under a common fire direction. Through the maneuver of artillery fire, commanders possess a powerful means of influencing the course of combat. The efficiency with which artillery fires are maneuvered is dependent upon adequate control. Control is effected by command and by liaison. Control depends on close liaison with supported, supporting, and adjacent units, on sufficient observation, efficient survey, and dependable signal communication. Adequate intelligence, particularly accurate and complete information of artillery targets, also is essential.

DIVISION FIELD ARTILLERY

41. The principal mission of division field artillery is support by fire on those targets which interfere with the execution of the mission of the supported units. Division field artillery is employed also to neutralize enemy observation, to interdict hostile
movements, and to assist corps artillery in counterbattery. It must be prepared to engage promptly hostile tanks within its field of fire. Field artillery should not be diverted unnecessarily from its primary mission and employed strictly as an antitank weapon. In order to carry out its principal combat missions, division field artillery ordinarily is subdivided for combat so that certain units are assigned to the direct support of specified infantry, armored cavalry, or airborne units, and the remainder is retained in general support of the division as a whole.

42. The assignment of direct support missions to field artillery units insures close cooperation with the supported units and enables such artillery to act with greater promptness in meeting the requirements of a rapidly moving situation on the front of the supported units. A field artillery unit in direct support establishes liaison and signal communication with the supported unit and as far as possible executes the missions requested by the supported unit. Direct support artillery remains under the command of the the next higher artillery commander. It renders maximum fire support to the supported unit. On orders of the task force or division commander, its fires may be shifted to targets that are outside of the supported unit's zone of action. The commander of a field artillery unit in direct support is free to maneuver as necessary in order to furnish maximum fire support to the supported unit.

43. Whenever the situation permits, both direct support and general support artillery are retained under the command of the division artillery commander. Field artillery operates most effectively in this manner. When the division artillery commander cannot control efficiently the fire of all of his artillery because of the character of the operations, unusual extension of frontage, difficulties of terrain, lack of suitable observation, or difficulties of signal communication, such artillery should be promptly attached to the infantry and armored cavalry units which it is to support.

CORPS ARTILLERY

44. a. Corps artillery consists of the organic corps artillery headquarters and headquarters battery; the organic observation battalion, which includes sound and flash ranging elements; and such additional field and antiaircraft artillery units as may be attached from time to time by higher headquarters and retained under the direct control of the corps commander.

b. The mission of corps field artillery is to support the action
of the corps by reinforcing the fires of the division field artillery, by engaging targets which are beyond the range or power of the division field artillery, by neutralizing or destroying enemy artillery, by fire on hostile reserves, and by disrupting hostile command, communication, and other important installations.

c. The mission of corps antiaircraft artillery is to provide maximum protection against hostile aircraft for units and installations located in the corps area. The amount of antiaircraft artillery attached to the corps will depend on the air and ground tactical situation. So long as the situation permits, the employment of the corps antiaircraft artillery should rest directly with the corps commander. This will insure coordination of means and maximum protection for the vital installations within the corps area of operations. When the fluidity of the situation or the dispersion in the area of operations makes centralized control impractical, antiaircraft artillery units may be attached to subordinate units.

45. The degree to which command of the corps artillery is decentralized is based on the same principles enunciated for division artillery. In general, the light field artillery battalions of the General Reserve Artillery which have been attached to the corps are reattached to subordinate divisions. After attachments have been made to the divisions, the artillery remaining under the command of the corps artillery commander is organized to give maximum support to the corps as a whole. This support is assured by the assignment to the corps artillery units of general support and reinforcing missions, counterbattery missions, and long-range missions.

GENERAL RESERVE ARTILLERY

46. General Reserve Artillery consists of all artillery units not organic to divisions and corps. It consists of separate batteries, battalions, groups, and brigades. These units are available as a pool for allotment to theaters, army groups, armies, or task forces, according to their needs.

ARTILLERY IN RESERVE

47. Artillery is effective only by its fire; ordinarily, it should not be held in reserve. Artillery earmarked for support of a unit held in reserve should be placed in general support of the engaged force if time will permit its employment with the reserve when the reserve is committed.
48. Mobile artillery, either field or antiaircraft, may be used to reinforce harbor defense measures as required.

49. Submarine mines are underwater mines planted in considered patterns across a harbor entrance in such a manner as to insure the closure of that entrance to enemy vessels, particularly submarines. Submarine mines can destroy enemy submarines which have not been detected by any other surveillance means. This is especially important because submarines are the only enemy craft, air or waterborne, capable of approaching our shores undetected by long-range surveillance means. Since the firing of controlled submarine mines is regulated from a shore station, friendly shipping can be safely passed through a submarine mine defense. Precautions must be taken to prevent hostile submarines from entering with such shipping.

ANTIAIRCRAFT ARTILLERY

50. Antiaircraft artillery is equipped with antiaircraft guns, automatic weapons, rockets, guided missiles, and the equipment required for observation, warning, and fire control. The primary mission of antiaircraft artillery is to provide local protection for field forces and important ground establishments against all forms of enemy air attacks and activities by day and by night.

51. Antiaircraft artillery also may be used against ground targets. Due to the characteristics of its weapons—high muzzle velocity and flat trajectory—these weapons may be used effectively for direct fire against tanks, fortifications, and small naval or land craft. It may be used for indirect fire in the role of field artillery. When used on these missions, little air defense should be expected; consequently, it should not be employed against these targets unless the air threat is secondary. Antiaircraft artillery will not be diverted from its primary role without authority of division or higher commanders, except when the unit position is threatened with hostile ground attack. Since the dispositions of antiaircraft matériel for ground role and air role differ materially, the change from air to ground role should not be made without careful estimate.

52. An essential agency of antiaircraft artillery is its intelligence service (AAIS). This service gathers and transmits information of the enemy’s air activities for use in connection with the employment of the antiaircraft artillery units. Antiaircraft artill-
lery also is provided with information about hostile aircraft by the aircraft warning service. Rapid interchange of information between these services is essential.

Section V. CORPS OF ENGINEERS

53. The Corps of Engineers has the primary combat mission of increasing the combat power of the field forces by construction or destruction, especially that which facilitates the movement of friendly troops or impedes that of the enemy.

54. Engineers facilitate the movement of troops by providing passage through obstacles, both natural and man-made, or by removing those obstacles. Any operation, therefore, in which the physical characteristics of terrain constitute a major obstacle to success, is of paramount interest to the Corps of Engineers. Examples include defile operations, river crossings, bridging, passage of obstacles, beachheads, airheads, and demolitions.

55. The mission of hindering enemy movement is often of great importance. The inherent mobility of enemy motorized and armored forces and the threat of airborne forces must be countered by coordinated and intensive use of obstacles and demolitions. Obstacles may consist of hastily erected barriers, such as road blocks and mine fields, as well as deliberately prepared zones of obstacles. Obstacles are of little tactical value unless they are protected by fire.

56. Engineers have many additional important missions, some of which are water supply; production, reproduction, and supply of maps, mosaics, map substitutes, and relief models as required; reproduction and distribution of aerial photographs; operation of utilities; supply of construction, fortification, and camouflage materials and other engineer equipment; operation of landing craft in amphibious operations; beach operations; combat as infantry; and battlefield illumination.

57. For details of Corps of Engineers organization and functioning in the field, see tables of organization and equipment and FM's, series 5, and FM 100-10.

Section VI. SIGNAL CORPS

58. The Signal Corps has the primary combat mission of furnishing the signal communication essential to the performance of the over-all mission of the field forces.
59. Signal Corps troops establish, operate, and maintain signal communication systems with facilities for wire, radio, messenger, and visual communication, and provide signal supply, repair, and photographic service. It also operates the signal intelligence service.

60. The Signal Corps exercises technical supervision over the entire signal service of the Army. It supplies other arms and services with the technical equipment required for the installation of their signal communication and warning systems.

61. For details of Signal Corps organization and functioning in the field, see tables of organization and equipment and FM's, series 11.

Section VII. CHEMICAL CORPS

62. Combat troops of the Chemical Corps have the mission of assisting other units of the field forces by the use of chemical agents, smoke, incendiaries, and high explosives. The Chemical Corps exercises technical supervision over chemical warfare matériel of the Army. Chemical Corps service units are provided field armies and the theater to perform such missions as maintenance of Chemical Corps matériel, operation of chemical depots, field impregnation of clothing, decontamination of areas and matériel, and laboratory analysis of chemical agents.

63. Chemical units in the combat zone are army troops. They are attached to lower units as the situation requires. Chemical units may be employed profitably in mass for large-scale gas or smoke operations, or in small units for minor operations under division or lower unit control.

64. Operations of chemical units are coordinated by the higher commander as may be necessary to avoid interference by gas or smoke with the operations of other friendly troops.

65. For details of Chemical Corps organization and functioning in the field, see tables of organization and equipment and FM's, series 3.

Section VIII. MEDICAL DEPARTMENT UNITS

66. Medical Department troops are organic to all units of all arms and services of battalion size and larger, except the battalions of an infantry regiment; medical service for these battalions is pro-
vided by the regimental medical company. Organic medical troops have the primary mission of providing emergency medical care on the battlefield, on the march, and in bivouac. They also evacuate to and treat at dispensaries, battalion aid stations, and regimental collecting stations.

67. Medical units, such as battalions, groups, mobile hospitals (surgical, evacuation, and convalescent), medical depots, and sanitary units, are assigned or attached to divisions, corps, or field armies to provide for evacuation, hospitalization, medical supply, and sanitation. Similar medical units are employed in the communications zone with the addition of such units as hospital trains and ships, and fixed hospitals.

68. For details of Medical Department organization and functioning in the field, see tables of organization and equipment and FM's, series 8.

Section IX. QUARTERMASTER CORPS

69. Quartermaster Corps troops have the primary mission of providing supply and service support to combat units and to other supporting troops. With the exception of organic divisional troops, quartermaster units in the combat zone are field army troops.

70. Quartermaster supply includes food, general supplies, individual clothing and equipment, quartermaster organizational clothing and equipment, animals, and petroleum products for cooking, lighting, space heating, vehicles, and internal combustion engines.

71. Quartermaster service includes laundry, mobile bath, bakery, mobile refrigeration, salvage collection and evacuation, animal transportation, maintenance and repair of quartermaster items of clothing and equipment, sales stores, collection and disposition of personal effects, graves registration and burials, and troop labor.

72. For details of Quartermaster Corps organization and functioning in the field, see tables of organization and equipment and FM's, series 10.

Section X. ORDNANCE DEPARTMENT

73. The mission of the Ordnance Department is to design, develop, procure, store, issue, maintain, modify, renovate, repair, and sal-
vage ordnance supplies and ammunition. It also trains and fur-
nishes specialized ordnance troops. The Ordnance Department
exercises technical supervision over ordnance items throughout
the Army. By means of a technical intelligence service, it keeps
abreast of world developments in weapons and other ordnance
supply and equipment.

74. Ordnance units in the combat zone are field army troops, ex-
cept those organic to the infantry, airborne, and armored divisions.

75. For details of Ordnance Department organization and func-
tioning in the field, see AR 45–60, tables of organization and
equipment, and FM’s, series 9.

Section XI. TRANSPORTATION CORPS

76. The mission of the Transportation Corps is to move troops,
equipment, and supplies required for the conduct and support of
military operations, except those moved by organic transportation.

77. Truck battalions, car companies, and other transportation
units attached to divisions, or assigned or attached to corps, armies,
task forces, and theaters, may be employed under centralized con-
trol or attached to subordinate units in accordance with the situa-
tion and policies of the commander.

78. Amphibious truck battalions, port battalions, truck battalions,
and other transportation units, normally will be utilized, in am-
phibious operations, to unload ships and to move troops and sup-
plies from ship to shore and over beaches. Amphibious truck
battalions also may be utilized in river crossings and in shore-to-
shore operations.

79. For details of Transportation Corps organization and func-
tioning in the field, see FM 100–10, tables of organization and
equipment, and FM’s, series 55 and, until superseded, series 10.
CHAPTER 3
LEADERSHIP

80. Leadership is the art of influencing and directing people to an assigned goal in such a manner as to command their obedience, confidence, respect, and loyal cooperation.

81. Man is the fundamental instrument in war; other instruments may change but he remains relatively constant. Unless his behavior and elemental attributes are understood, mistakes will be made in planning operations and in troop leading.

82. In the training of the individual soldier, the essential considerations are to integrate individuals into a group and to establish for that group a high standard of military conduct and performance of duty without destroying the initiative of the individual.

83. War severely tests the physical endurance and moral stamina of the individual soldier. To perform his duties efficiently, he must not only be well equipped and technically trained but he also must be physically qualified to endure the hardships of field service and be constantly fortified by discipline based on high standards of military conduct. Strong men, inculcated with a proper sense of duty, a conscious pride in their unit, and a feeling of mutual obligation to their comrades in the group, can dominate the demoralizing influences of battle far better than those imbued only with fear of punishment or disgrace. Patriotism and loyalty coupled with the knowledge of, and a firm belief in, the principles for which the war is being fought also are essential.

84. In spite of the advances in technology, the worth of the individual man is still decisive. The open order of combat accentuates his importance. The dispersion of troops in battle caused by the influence of modern weapons makes control more difficult. Every individual must be trained to exploit a situation
with energy and boldness and must be imbued with the idea that success will depend upon his initiative and action.

85. Cohesion within a unit is promoted by good leadership, discipline, physical fitness, proficiency in weapons, sound tactical training, pride in the accomplishments and reputation of the unit, mutual confidence and comradeship among its members, and knowledge of the tasks to be accomplished by the unit and by its adjacent and supporting elements.

86. Leading troops in combat, regardless of the echelon of command, calls for cool and thoughtful leaders with a strong feeling of the great responsibility imposed upon them. They must be resolute and self-reliant in their decisions, energetic and insistent in execution, and unperturbed by the fluctuations of combat.

87. A leader must have superior knowledge, will power, morale and physical courage, self-confidence, initiative, resourcefulness, force and selflessness. Any show of fear or unwillingness to share danger is fatal to leadership. On the other hand, a bold and determined leader will carry his troops with him no matter how difficult the enterprise. A commander must bear in mind that physical unfitness will undermine his efficiency. He owes it to the men under his command to conserve his own fitness.

88. Troops are influenced strongly by the example and conduct of their leaders. Mutual confidence between the leader and his men is the surest basis for discipline. To gain this confidence, the leader must find the way to the hearts of his men. This he will do by acquiring an understanding of their thoughts and feelings, and by showing a constant concern for their comfort and welfare.

89. A good commander avoids subjecting his troops to useless hardships and danger. He guards against dissipating their combat strength in inconsequential actions or harassing them through faulty staff management. He keeps in close touch with all subordinate units by means of personal visits and observation. It is essential that he know from personal contact the mental, moral, and physical state of his troops, the conditions with which they are confronted, their accomplishments, their desires, and their needs.

90. The commander should extend prompt recognition for services well done, lend help where help is needed, and give encouragement
in adversity. Considerate and loyal to those whom he commands, he must be faithful and loyal to those who command him. A commander must live with his troops and share their dangers and privations as well as their joys and sorrows. By personal observation and experience he then will be able to judge their needs and combat value. The proper expenditure of combat strength is in proportion to the objective to be attained. When necessary to the execution of the mission, the commander requires and receives from his unit the complete measure of sacrifice.

91. A spirit of unselfish cooperation with their fellows is to be fostered among officers and men. The strong and the capable must encourage and lead the weak and less experienced. On such a foundation, a feeling of true comradeship will become firmly established and the full combat value of the troops will be made available to the higher commander.

92. The combat value of a unit is determined in great measure by the soldierly qualities of its leaders and members, and by its will to fight. Outward marks of this combat value will be found in the set-up and appearance of the men, in the condition, care, and maintenance of the weapons and equipment, and in the readiness of the unit for action. Superior combat value will offset numerical inferiority. Superior leadership combined with superior combat value of troops equipped with superior weapons constitutes a sure basis for success in battle.

93. A poorly trained unit is likely to fail at a critical moment because of demoralizing rumors, impressions, and hallucinations caused by unexpected events in combat. This is particularly true in meeting engagements and among troops entering combat for the first time. Therefore, training and discipline are of great importance. Every leader must take energetic action against lack of discipline, panic, rumor, pillage, and other disruptive influences. Discipline is the main cohesive force that binds the members of a unit.

94. A wise and capable commander will so regulate the interior administration of his unit that all groups perform the same amount of work and enjoy the same amount of leisure. But in so doing he will preserve tactical unity in assignment of tasks wherever this is possible. He will see that demonstrated efficiency is promptly recognized and rewarded. He will set before all a high standard of military conduct and apply to all the same rules of discipline.
95. Good morale and sense of unity in a command cannot be
provided; they must be thoroughly planned and systematically
promoted. They are born of just and fair treatment, a con-
cern for the soldier’s welfare, thorough training in basic du-
confidence in weapons and combat ability, comradery among
men, and pride in self, organization, and country. The estab-
ishment and maintenance of good morale are incumbent upon the
commander and are marks of good leadership.

96. The first demand in war is decisive action. Commanders
inspire confidence in their subordinates by their decisive con-
and their ability to gain material advantage over the enemy.
reputation for failure in a leader destroys morale.
CHAPTER 4
THE EXERCISE OF COMMAND

Section 1. PRINCIPLES OF WAR
THE OBJECTIVE

97. The ultimate objective of all military operations is the destruction of the enemy's armed forces and his will to fight. The selection of intermediate objectives whose attainment contributes most decisively and quickly to the accomplishment of the ultimate objective at the least cost, human and material, must be based on as complete knowledge of the enemy and theater of operations as is possible for the commander to gain by the exploitation of all sources and means of information available to him.

SIMPLICITY

98. Plans should be as simple and direct as the attainment of the objective will permit. Simplicity of plans must be emphasized for in operations even the most simple plan is usually difficult to execute. The final test of a plan is its execution; this must be borne constantly in mind during planning.

UNITY OF COMMAND

99. Unity of command obtains that unity of effort which is essential to the decisive application of the full combat power of the available forces. Unity of effort is furthered by full cooperation between elements of the command. Command of a force of joint or combined arms is vested in the senior officer present eligible to exercise command unless another is specifically designated to command.

THE OFFENSIVE

100. Through offensive action, a commander preserves his freedom of action and imposes his will on the enemy. The selection
by the commander of the right time and place for offensive action is a decisive factor in the success of the operation. A defensive attitude may be forced on a commander by many situations; but a defensive attitude should be deliberately adopted only as a temporary expedient while awaiting an opportunity for countereffensive action, or for the purpose of economizing forces on a front where a decision is not sought.

MANEUVER

101. Maneuver in itself can produce no decisive results, but if properly employed it makes decisive results possible through the application of the principles of the offensive, mass, economy of force, and surprise. Better armament and equipment, more effective fire, higher morale, and better leadership, coupled with skillful maneuver, will frequently overcome hostile superior numbers.

MASS

102. Mass or the concentration of superior forces, on the ground, at sea, and in the air, at the decisive place and time, and their employment in a decisive direction, creates the conditions essential to victory. Such concentration requires strict economy in the strength of forces assigned to secondary missions. Detachments during combat are justifiable only when the execution of tasks assigned them contributes directly to success in the main battle.

ECONOMY OF FORCES

103. The principle of economy of force is a corollary to the principle of mass. In order to concentrate superior combat strength in one place, economy of force must be exercised in other places. The situation will frequently permit a strategically defensive mission to be effectively executed through offensive action.

SURPRISE

104. Surprise must be sought throughout the action by every means and by every echelon of command. Surprise may be produced by measures which deny information to the enemy or deceive him as to our dispositions, movements, and plans; by variation in the means and methods employed in combat; by rapidity and power of execution; and by the utilization of terrain which appears to impose great difficulties. Surprise may compensate for numerical inferiority.
103. Adequate security against surprise requires a correct estimate of enemy capabilities, resultant security measures, effective reconnaissance, and readiness for action. Every unit takes the necessary measures for its own local ground and air security. Provision for the security of flanks and rear is of special importance.

Section II. COMMAND

106. Command is the authority which an individual in the military service lawfully exercises over subordinates by virtue of rank or assignment. In joint commands, the commander may be an officer of the Army, Navy, or Air Force.

107. Command and leadership are inseparable. Whether the force is large or small, whether the functions of command are complex or simple, the commander must be the controlling head.

108. Decision as to a specific course of action is the responsibility of the commander alone. While he may accept advice and suggestions from any of his subordinates, he alone is responsible for what his unit does or fails to do.

109. A willingness to accept responsibility is an essential trait of leadership. Every individual from the highest commander to the lowest private must always remember that inaction and neglect of opportunities will warrant more severe censure than an error of judgment in the action taken. The subordinate unit is a part of a tactical team employed by the higher commander to accomplish a certain mission, and any independence on the part of a subordinate commander must conform to the general plan for the unit as a whole.

110. The commander’s mission is contained in the orders which he has received. Nevertheless, a commander of a subordinate unit cannot plead absence of orders as an excuse for inaction. If the situation does not permit communication with the superior commander and the subordinate commander is familiar with the general plan of operations or the mission of the whole command, he should take appropriate action and report the situation as early as practicable.

111. In spite of the most careful planning and anticipation, unexpected obstacles, frictions, and mistakes are common occur-
rences in battle. A commander must school himself to regard these events as commonplace and not permit them to frustrate him in the accomplishment of his mission.

112. Personal conferences between the higher commander and his subordinates who are to execute his orders usually are advisable so that subordinates may arrive at a correct understanding of the plans and intentions of their superior.

113. All the troops assigned to the execution of a distinct mission should be placed under one command, not only to insure the unified execution of the mission, but also to insure a single chain of command during the operation. A commander should not bypass other commanders in the chain of command except in emergency. When a commander bypasses another commander in the chain of command in an emergency, he should insure that the bypassed subordinate commander is informed, at the earliest opportunity, of the instructions issued.

114. A commander who is advanced to a higher command should be relieved from the responsibility of direct command of his former unit.

115. For details of command responsibility and organization, particularly territorial, see FM 100–10.

116. A staff assists the commander in the exercise of his command by providing information, by making studies and recommendations, by preparing and distributing orders, and by supervision. Staff officers must have a thorough understanding of the policies of the commander and be acquainted with subordinate commanders and units. A commander should guide his staff by clearly enunciating directives and policies. A commander alone is responsible for all that his command does or fails to do; he cannot shift this responsibility to his staff or to subordinate commanders. A staff officer, as such, does not exercise command.

117. As much and possibly more may be learned by a study of failure as from a study of success. See the lessons of the defense of Pearl Harbor contained in the appendix.

Section III. ESTIMATE OF THE SITUATION

118. In any operation, the commander must evaluate all the available information bearing on his task, estimate the situation, and
reach a decision. The estimation of the situation is a continuing process, and changed conditions may call for a new decision at any time.

119. The estimate often requires rapid thinking, with consideration limited to essential factors. In campaign, complete information concerning the enemy seldom can be obtained. To delay action in an emergency because of incomplete information shows a lack of energetic leadership, and may result in lost opportunities. The situation, at times, may require the taking of calculated risks.

120. The mission is the basic factor in the commander's estimate. This frequently may be resolved in terms of terrain. See paragraphs 124-126. Thus, it may be vital to hold certain dominating ground, to protect a certain defile, or to capture such features.

121. The capabilities of the opposing forces and the possible effect of their employment must be continually evaluated. The commander must guard against ignoring other lines of action open to the enemy in the belief that the enemy's intentions have been discovered.

122. In estimating the capabilities of forces, both friendly and hostile, the commander also must be provided with full and up-to-date information on the existing and probable future weather conditions.

123. For details relative to contents of the estimate of the situation, see FM 101-5.

Section IV. TERRAIN AND WEATHER

124. Terrain always should be evaluated in terms of the following five factors: features critical to either combatant, routes of communication and avenues of approach, obstacles, concealment and cover, and observation and fields of fire. Weather and climatological data also must be considered since weather and climate may initially affect the employment of aviation, and armored elements, and they also can affect visibility, camouflage requirements, trafficability (both on roads and off), stream levels, temperature, and wind.

125. a. That part of the commander's estimate dealing with the terrain and weather often exercises a decisive influence upon his decision and plan. Proper evaluation and utilization of the terrain and of weather and climatological information reduce the
disadvantages of incomplete information of the enemy. The more important features to be considered in evaluating terrain include not only natural ground forms such as mountains, ridges, streams, bodies of water, swamps, bogs, woods, and open spaces, but also artificial features such as roads, railroads, dams, bridges, towns, and cultivated areas (as distinct from natural vegetation). The type, moisture content, drainage and surface and sub-surface conditions (due to frost, precipitation or physical obstructions) of the soil are of great importance in armored operations.

b. Weather information includes forecasts as to precipitation, temperature, fog or ground haze, cloud conditions, phases of the moon, periods of daylight and darkness, the wind and other predictable phenomena. Climatological information consists essentially of a summation and averaging of weather conditions over long periods of time. It affords a means for the evaluation of terrain and weather at a given season in the future, beyond the range of normal and accurate prediction. The studies of terrain and weather are inseparable; terrain always must be evaluated in consideration of predictable weather. The commander seeks always to utilize the terrain and weather to his own advantage and to the enemy's disadvantage.

126. Topographical maps are the basis for terrain studies, but must be checked through use of trafficability studies, air reconnaissances, air photos, and ground reconnaissance. Changes in the terrain, especially in the road net, occur continually. When discovered, such changes must be reported promptly to higher headquarters.

Section V. CONDUCT IN BATTLE

127. The commander's decision for his unit as a whole, and the missions to subordinate units, are communicated to subordinates by clear, concise, and timely orders.

128. After providing for the issuance of orders, the commander places himself where he can best control the course of action and exert his leadership. When opportunity offers and when his presence at the command post is not urgently required, he will visit his subordinate commanders and his troops in order to inspire confidence and to assure himself that his orders are understood and properly executed. During the decisive phase of battle, the place of the commander is near the critical point of action.

129. Whenever the commander leaves his command post, he should orient his staff as to further plans to be prepared or measures
to be taken in anticipation of future contingencies, and should inform his staff where he can be reached.

130. A commander influences the course of subsequent action by his leadership, by the maneuver of subordinate elements to include reserves, by the concentration of artillery fires, by the fires of other supporting units, and by the effective use of available combat aviation.

131. The duration of a tactical operation seldom can be predicted. Successful engagements sometimes progress so slowly that the gains made are not immediately apparent. At other times, they progress so rapidly that the gains made can be capitalized only by the most aggressive and farsighted leadership.

132. Losses must be anticipated by the commander and his staff. Timely measures are taken for replacement of men, units, transport, and weapons, and for replenishment of ammunition and other supplies. Commanders must take appropriate steps to permit unit rotation from combat. Failure to provide for rotation results in lowered battle efficiency and higher casualty rates. When the situation permits, troops which have been heavily engaged are rested, losses in personnel and equipment are replaced, the unit is reorganized, and time is allotted for training to weld replacements into the team before the unit is assigned a new and important mission.

Section VI. OPERATION ORDERS

133. The authority to issue orders is an inherent function of command. Orders normally are issued to next subordinate commanders. Bypassing the normal channels of command is resorted to only in urgent situations; in such cases both the commander issuing and the commander receiving the order should notify intermediate commanders of its content as soon as possible.

134. Orders should be originated and disseminated in time to permit subordinate commanders the maximum periods to reconnoiter, to estimate their own situations, to issue their orders, and to prepare their troops for the contemplated operation. Commanders must anticipate the delays involved in the successive dissemination of orders. When complete orders cannot be issued, essential details should be issued in fragmentary form.

135. Usually it is desirable to issue warning orders of impending operations. The principal purpose of the warning order is to
gain time for preparatory measures and to conserve the energy of the troops. During the planning stage it usually is desirable to confine knowledge of contemplated operations to the minimum number of commanders and staff officers.

136. An order should not trespass upon the province of a subordinate. It should contain everything that the subordinate must know to carry out his mission and to further the mission of the next higher unit. It tells the subordinate what to do but not how to do it.

137. Orders must be clear and explicit and as brief as is consistent with clarity. Short sentences are easily understood. Clarity is more important than technique. The more urgent the situation, the greater is the need of conciseness in the order. Any statement of reasons for measures adopted should be limited to what is necessary to obtain intelligent cooperation from subordinates. Detailed instructions for a variety of contingencies or prescriptions that are a matter of training impair confidence and have no place in an order.

138. Orders which attempt to regulate action too far in the future result in frequent changes. Such frequent changes overload the means of signal communication, cause confusion and misunderstanding, impose needless hardships on the troops, and injure their morale.

139. In every unit, standing operating procedure is prescribed by the commander whenever desirable. This procedure covers those features of operations which lend themselves to a definite or standardized course of action without loss of effectiveness. It assists in reducing the detail incorporated in the operation order. It must be remembered that newly-attached units are not familiar with SOP's of the unit to which attached.

140. For further details of operation orders, see FM 101–5.

Section VII. COMMAND POSTS

141. The tactical situation usually requires that the headquarters of large units be divided into more than one echelon, normally into a forward and a rear echelon. When desirable, headquarters of smaller units may be similarly divided.

142. The forward echelon consists of those staff agencies required to assist the commander immediately in tactical operations. The
command post is the location of the forward echelon of a headquarters. All agencies of signal communication center at the command post. The rear echelon, primarily administrative, consists of the remaining staff agencies.

143. A commander frequently places himself forward of the command post, better to observe and direct the action. In such cases, he should be in communication with his command post. He may be accompanied by a small staff.

144. In the selection of a command post, primary consideration is given to the requirements of signal communication to facilitate command and control of subordinate units. Due regard is given to the disposition of troops, routes of communication, space for staff activities, cover, concealment, and security. Generally, when the command post is located at an existing or potential center of signal communication facilities, the other requisites of a command post will be found there also.

145. The number of moves of a command post should be held to a minimum. Each movement of a command post, even when skillfully accomplished, causes a temporary reduction in staff efficiency and in the effectiveness of control of subordinate units. However, there must be no delay in moving the command post when there is danger of sacrificing control. The aggressive forward displacement of the command post must be balanced against the requirements for adequate signal communication control. Before a change of location is made, the necessary means of signal communication for the new command post must be established. This requires that the signal officer be notified well in advance of such a movement.

146. On the march, a command post may move by bounds along a designated route, or it may move at a designated place in a column.

147. A commander must keep superior and subordinate units informed of the location and contemplated movement of his command post. Each large unit announces the location of its command post and, when practicable, the general location of the command post of each of its major subordinate units. In operations requiring the movement of command posts, each large unit may designate its own axis of signal communication by naming the probable successive locations of its command post, and may similarly assign an axis of signal communication to each of its
major subordinate units, in order to insure an integrated signal communication system.

143. The maintenance of secrecy as to the location of command posts, particularly of large units, is of great importance. They are the special objectives of hostile artillery, air attack, armored units, airborne troops, and raiding parties. This threat makes it necessary not only to provide security against surprise attack from either the air or ground, but also to use great care not to disclose the command post location to the enemy. Concealment from the air is of major importance. Traffic in and out of command posts is rigidly controlled. Landing fields, drop and pick-up grounds, and radio stations are placed at a distance. Signs to mark their locations and the routes thereto are used sparingly. When the danger is great, signs are not used; in their stead guides are posted to point the way and messengers are given more precise instructions.

Section VIII. SIGNAL COMMUNICATION

149. The efficient exercise of command and the prompt transmission of information and instructions require the establishment of reliable means of signal communication. Entire dependence cannot be placed upon any one means; alternate means must be provided.

150. Every commander is responsible for the establishment and maintenance of the signal communication system of his unit and for its efficient operation as a part of the system of the next higher command. The command posts are the control points of the signal communication system. When headquarters are in movement, signal communication is maintained between command posts and with columns.

151. The establishment and maintenance of signal communication between superior and subordinate units are the responsibility of the superior commander; between adjacent units, as directed by their common superior. A supporting unit is responsible for the establishment and maintenance of signal communication with the supported unit.

152. Means of signal communication include wire, radio, visual, sound, pigeon, and messenger. The various means of signal communication are employed so that they supplement each other. The means which provide the maximum in reliability, flexibility,
scarcety, and speed with the minimum of effort and material generally will be the basic means in a given situation.

153. Early information must be given to the signal or communication officer of a unit about projected operations in order to facilitate the prompt establishment of signal communication. The necessary instructions therefore are prepared by the unit signal or communication officer in accordance with the directions of the commander. The signal officer of a higher unit maintains close liaison with the signal or communication officer of the subordinate unit.

154. Communication centers are operated by signal or communication personnel at all battalion or higher command posts and at the rear echelons of large unit headquarters for the purpose of speeding message transmission. In general, the choice of the means of sending messages, and the cryptographing and decryptographing of messages are the responsibility of the communication center. The writer may confer with the communication center about the means of transmission. In large units, a more positive means of staff message control is employed. The communication center transmits messages in accordance with precedence indicated by the writer.

155. Additional communication centers are established whenever needed for the reception and relay of messages. Information as to their location must be transmitted promptly to all concerned.

156. Wire communication (telephone, facsimile, and teletype-writer) constitute the basic means of signal communication for the infantry division and the larger unit headquarters. It is not always practical, however, when forces are operating at a considerable distance from each other. The time required for installation of wire communication diminishes its value in moving situations. Wire communication is susceptible to interception and seldom should be used to transmit clear-text classified messages.

157. Radio communication is especially applicable in spanning distances between widely separated mobile forces, between ground and air, and in the fire-swept zone of the forward area. It is less vulnerable than wire communication to hostile fire and is, therefore, a valuable supplement to wire systems in combat. It is subject, however, to static, to willful interference created by the enemy, and to electrical and mechanical failures. Its operational capabilities are affected by time of day, season of the year, and by the number of channels available.
158. Enemy interception of all radio messages must be presumed. Discretion must be used even in the sending of messages in code or cipher. When prompt action is called for, the commander must decide whether the urgency of sending the message in the clear outweighs the value of the information to the enemy. Radio transmission in the clear is justified in situations when the time available to the enemy is insufficient for exploitation of the information contained in the message. During certain phases of operations, use of radio must be rigidly restricted or prohibited.

159. Visual signal communication (lamps, flags, pyrotechnics, panels, and airplane maneuvers) is not suitable for long messages or over great distances, but finds especial application for communicating within and between small units and with airplanes.

160. Sound communication (principally public address sets, horns, bugles, whistles, gongs, sirens, and small arms fire) is used chiefly to spread an alarm, as a means to attract attention, and to transmit short prearranged messages.

161. The use of pigeon communication is nearly obsolete due to the widespread use of radio in conjunction with the airplane to contact and supply isolated parties. Training in pigeon communication will be conducted only when the need for it is foreseen.

162. a. In spite of the advances of technical means of signal communication, the messenger system still is essential to Army signal communication. The efficiency of the messenger system depends on the individual messenger. He must be chosen for his sturdiness, courage, self-reliance, and extreme loyalty.

b. Messengers are required to transport maps and overlays, and to deliver messages which require additional clarification. The failure of technical means of communication does not relieve the commander of his communication responsibilities. Messenger communication is needed and used by all units from the smallest to the largest. Scheduled messenger service is established when locations are fixed for a sufficient length of time to warrant the service. Special messengers always should be available at the communication center; they are dispatched on special missions as required by the situation. Local messengers serve the units located around the division command post or rear echelon.

c. Messengers are dispatched by the most efficient means of transport available. In addition to runners, other methods of transportation may include airplanes, motors, bicycles and animals.
Messengers are extremely vulnerable to enemy action. The provision of an armed escort sometimes is required when in or near hostile territory. It is advisable to send important messages by two or more messengers who travel by separate routes. All commanders will assist messengers in expediting delivery of messages.

163. Early signal communication in amphibious and airborne operations is paramount. This requires combat loading of signal personnel with signal equipment and coordination of signal procedure for ground, air, and naval forces prior to embarkation or emplaning.

164. For details relative to signal communication, see FM's of the 11 and 24 series.
CHAPTER 5
COMBAT INTELLIGENCE, RECONNAISSANCE, AND COUNTERINTELLIGENCE

Section 1. COMBAT INTELLIGENCE

165. Information of the enemy and of the area of operations must be evaluated to determine its probable accuracy and must be interpreted to determine its probable significance. It then becomes combat intelligence. From adequate and timely intelligence the commander is able to draw logical conclusions concerning enemy courses of action. Combat intelligence is thus an essential factor in the estimate of the situation and in the conduct of operations.

166. The commander is responsible for all intelligence activities of his unit. Thus, he is responsible that his command, within its capabilities and mission, gathers all possible information of the enemy, terrain, and weather that is pertinent to operations; and that his command transmits this information to appropriate higher, lower, and adjacent units.

167. The commander is responsible also for the conversion into intelligence of all information of the enemy and area of operations that is pertinent to his command and mission, and for the dissemination of this intelligence to superior, subordinate, and adjacent units. To aid him in carrying out these duties and responsibilities, the commander is provided with staff officers and agencies trained in intelligence procedures.

168. The gathering of information and the production of intelligence must be based not only upon our own plans and intentions but also upon a consideration of enemy capabilities. Intelligence activities must be coordinated with one another so as to provide complete coverage, to eliminate all unnecessary duplication of effort, and to fit such activities harmoniously into the entire operation.
169. Combat intelligence functions, procedures, and forms are covered in detail in FM 30 series.

170. The attention and activities of all information-collecting agencies and intelligence personnel are focused on that specific intelligence which, from the commander’s viewpoint, is needed at a particular time in order to make a sound decision, to carry out a decision already made, to avoid surprise, or to arrive at a decision for future operations. The requirements for such specific intelligence are announced by the commander as essential elements of information (EEI). In other words, the EEI are a statement of the specific intelligence needed by the commander at a particular time.

171. In the combat zone the following items usually are included among the essential elements of information—what is the strength, composition, and disposition of the enemy; what courses of action that can affect our mission are within the physical capabilities of the enemy; when and under what circumstances can he put each course of action into effect; and whether, when, and in what strength, can he be reinforced? The essential elements also include unknown details of the area of operations that may affect our own maneuver. They also may include items of information desired by higher, lower, or adjacent units; and data on suitable distant objectives for air, amphibious, mechanized, or other highly mobile units, and on meteorological and hydrographic conditions enroute to such objectives.

172. The essential elements of information constitute the basis for orders, instructions, and requests governing the search for information. They do not impose limitations on reporting other information. While the primary mission of all collecting agencies is to satisfy the requirements arising from the essential elements of information, these agencies must also transmit all additional enemy information that comes to their attention. Ordinarily, the intelligence of the enemy that is required by the essential elements of information is deduced from numerous indications of the enemy’s activities. Reconnaissance and other agencies are therefore directed to search primarily for these indications.

173. Collection is the exploitation of sources of information by collection agencies and the prompt delivery of the information secured to the commander. The information should be as complete and accurate in detail as circumstances permit. It must be transmitted to the headquarters requiring it in time to be of use.
174. Collecting agencies available to a commander of any combat unit are the troops themselves, particularly reconnaissance and observation elements, both ground and air; elements of the Air Force or Navy operating with or in support of the unit; intelligence staff personnel, assigned or attached, including technical and scientific intelligence teams; and intelligence liaison with higher, lower, and adjacent headquarters. Additional collection agencies may be made available to units that are operating alone or for special purposes.

175. The principal sources of intelligence initially available in the theater of operations are the intelligence studies made by the Department of the Army and furnished the field forces prior to operations. These sources are supplemented by more detailed information obtained in the field from study of recent maps and map supplements; captured documents and equipment; the hostile and neutral press and radio; interrogation of inhabitants, repatriates, prisoners, and deserters; the observation of enemy activity by agents; air and ground reconnaissance and observation; troops in contact with the enemy; and special information services of component units such as aircraft warning service, radio direction finding, and interception.

176. Collected information must be processed to make it intelligence. The processing may take place entirely in the mind of the commander or may take place as a routine function of the intelligence section of the commander's staff. The critical step of processing is evaluation and interpretation. These procedures transform raw information into intelligence by establishing its pertinence, the reliability of its source, the accuracy of its content and, in addition, its significance in the light of intelligence already on hand.

177. The combat intelligence produced is disseminated within the headquarters and to higher, lower and adjacent units by means of operation orders, messages, periodic reports and summaries, or by any other convenient form. The object of dissemination is to insure that intelligence reaches the individuals or units concerned in time to serve its intended purpose. Special attention must be given to the transmission of specifically requested information as soon as it is obtained. Special signal communication measures, such as flash warnings, must be taken for the dissemination of urgent information. Intelligence of the fighting characteristics of the enemy soldier, the characteristics of his weapons, his tactics, and the terrain he occupies must be disseminated to all
troops with first priority to those in closest contact with or proximity to the enemy.

178. The primary use of intelligence is to assist all commanders to make sound and timely decisions. Commanders use this assistance by incorporating the latest intelligence into the continuing estimate of the situation. The purpose of the intelligence estimate is to determine, on the basis of the latest information available, the capabilities of the enemy. When reliable, factual indications of future enemy actions are available, the intelligence estimate should state the capability that the enemy is most likely to adopt, together with the resources and methods he is most likely to employ. Whenever this indicated course of enemy action is not the most disadvantageous to our mission, the indications must be re-examined for reliability and accuracy.

Section II. RECONNAISSANCE

179. a. Reconnaissance is directed effort in the field by military units to gather information of the enemy, weather, terrain, or resources. It is classified as distant, close, and battle. The techniques of reconnaissance employed by the several arms are described in their respective field manuals.

b. The purpose of reconnaissance is to gain information for use as a basis for tactical or strategical operations.

180. a. Information concerning the enemy may include his identification, location, dispositions, strength, organization, composition, movements, attitude, equipment, supply, morale, and condition. Evidence of changes in these factors is of particular importance.

b. Information concerning the terrain may include battle positions and the approaches thereto, character of roads, routes of communication, soil trafficability, streams, obstacles, cover, concealment, fields of fire, observation, and bivouac areas.

c. Information concerning weather may include precipitation, temperature, fog, cloud conditions, moon phases, wind, sunrise, sunset, and magnetic phenomena, as well as tide and surf conditions, if applicable.

181. The methods of obtaining information are varied and include actual observation of terrain or physical objects, ground and air reconnaissance, and the examination and identification of inhabitants, prisoners, spies, documents, and air photographs. Although
reconnaissance missions generally require secrecy of movement; it may be necessary to resort to combat for the purpose of obtaining information.

182. Ground reconnaissance elements can maintain continuous contact, operate under weather conditions which preclude air reconnaissance, and can determine details of enemy activity, strength, composition, and combat efficiency. However, unless they are balanced, mobile, combat forces, they cannot obtain a complete picture of the enemy situation to any great depth in rear of the hostile screen. They should be complemented by air reconnaissance elements.

183. Armored reconnaissance units are balanced combat forces, capable of executing distant reconnaissance missions, operating on an extensive front, operating beyond the supporting range of other ground combat units and, in general, of executing any mission within the limitations of their organization and equipment. It may be desirable to reinforce armored reconnaissance units with other arms; it is especially desirable to augment their operations with air reconnaissance.

184. Close and intensive reconnaissance by infantry, artillery, and engineer units supplements the more distant reconnaissance. Infantry reconnaissance assumes special importance when armored reconnaissance units are lacking or weak. In such cases a reconnaissance unit consisting of available armored reconnaissance elements and motorized infantry or motorized infantry exclusively, may be employed. It may be desirable to reinforce such a unit with other arms. Infantry reconnaissance is constant and intensive when the opposing forces are in contact and especially during combat. Light aircraft, within their limitations, are used by infantry, armored cavalry, artillery, and engineers in reconnaissance.

185. Small engineer parties may constitute a portion of ground reconnaissance units or other units on reconnaissance missions or they may operate independently to obtain and report detailed or technical information about routes of communication and movement, demolitions, land mines, obstructions, and bridges.

186. Reconnaissance is executed so as to secure information. Information on the location, strength and movement of hostile troop units must be gained at the earliest practicable moment. Contact with the enemy, once gained, must be continuously maintained.
The nearer the approach to the enemy, the more intensive is the reconnaissance.

187. Effective reconnaissance requires concentration of the available means on the most important missions. Depending on the situation, some reconnaissance elements may be held in reserve to reinforce the reconnaissance which is in progress, and to project reconnaissance in a new direction.

188. Ground reconnaissance elements gain and maintain contact with the enemy and, by working through gaps and around the flanks and the rear, endeavor to ascertain the strength, movements, composition, and dispositions of the enemy's main force, and the approach of enemy reinforcements. Light aircraft organic within ground units may be employed to supplement and complement the execution of reconnaissance by ground units with due regard to the vulnerability of light aircraft to hostile action.

189. Orders for the development of a command frequently assign zones of reconnaissance to subordinate units. Units maintain liaison and contact with adjacent units on their interior flanks. Flank units are usually given specific orders about reconnaissance on an open flank. However, even without orders from the higher commander, each unit executes such reconnaissance within its own zone of action and toward unsupported flanks as is necessary to gain information and to avoid surprise.

190. Ground forces assigned to reconnaissance missions secure information chiefly through the use of patrols. When, because of hostile activities or the distance of objectives, patrols require close support in the execution of their mission, reconnaissance is executed by detachments which closely back up the action of patrols and furnish reliefs for patrol duty.

191. The most detailed information will be required concerning areas of importance in the combat zone. Detailed information of the terrain in the possible areas of combat is essential. Terrain features that afford observation of the hostile dispositions constitute special objectives of reconnaissance. Active and aggressive action of patrols in seizing critical terrain features is imperative.

192. a. Frequently essential information can be obtained only through attack. Reconnaissance units attack when the mission requires it.

b. When hostile resistance is encountered which cannot be penetrated or enveloped, a reconnaissance in force constitutes the
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   b. When hostile resistance is encountered which cannot be penetrated or enveloped, a reconnaissance in force constitutes the
best means of clearing up an uncertain situation. Troops engaged in a reconnaissance in force usually make a local attack with a limited objective. The commander who orders a reconnaissance in force must consider the possibility that his intentions or those of the higher commander may thereby be disclosed. He must be prepared also for the possibility that such reconnaissance may bring on a general engagement. If the situation is suitable, as for example where contact has been fully established and the attacker is probing for a weak spot, reserves should be available to exploit success.

193. It is a responsibility of the tactical air force to provide air reconnaissance for the army. Air reconnaissance covers areas which cannot be reached by ground reconnaissance. It provides rapid, fragmentary information gathered photographically and visually. It is limited by hostile action, inclement weather, darkness, and vegetation. Increased aircraft speed may provide additional limitations.

194. Night photographic reconnaissance by means of artificial illumination may detect heavy troop and vehicle movements. Reconnaissance flights made shortly after dawn and before dark offer a favorable opportunity for discovery of night movements already accomplished or contemplated.

195. Requests for air reconnaissance must be planned to insure continuity of observation of critical areas to discover the location, disposition, and movement of the enemy's forces. These objectives are closely observed both day and night to discover the enemy's main forces and reinforcements, and their direction of movement.

TRANSMISSION OF INFORMATION

196. The best information will be of no use if it arrives too late at the headquarters for which it is intended. Prompt transmittal of all information and dissemination of pertinent intelligence is the responsibility of all commanders.

197. While a commander who is in need of information from other headquarters is responsible for requesting it, adjacent units should habitually exchange pertinent information regardless of whether or not such a request has been made.

198. a. Generally, no attempt will be made by a collecting agency to evaluate information prior to its transmittal to higher head-
quarters. In order to eliminate a mass of detail, higher head­quarters may indicate the extent of screening to be accomplished in subordinate units. All items of information that may pertain in any way to the essential elements of information or to specific directives or requests should be reported, as they may be of sig­nificance to a higher commander when considered in conjunction with other information.

b. Negative information frequently is important as confirma­tion that the situation during a specific period of time has re­mained unchanged. First contact with the enemy and new identifications always are reported by the most rapid means available. Other results of reconnaissance are reported as required in orders.

199. a. Important and urgent information, in addition to being transmitted to the next higher commander, is sent by the most rapid means available to all headquarters affected, without regard to the usual military channels.

b. Artillery observers and liaison officers are often in a posi­tion to transmit to the higher commander over their own signal communication systems early reports of important combat events when such information might otherwise be delayed in transmission.

200. During pauses in combat, or whenever the situation demands, subordinate commanders make brief reports to the next higher headquarters on their own situation and on the enemy situation to their front. Periodic reports are made as directed.

COUNTERRECONNAISSANCE

201. a. Counterreconnaissance includes the active measures em­ployed by a commander to screen his command from hostile recon­naissance. It is executed principally by aviation, antiaircraft artillery, armored cavalry, and other ground security detachments. A commander coordinates the action of all his ground force counter­reconnaissance agencies by assigning to each a mission in accord­ance with its capabilities. The air force commander will coor­dinate his forces in a similar manner, maintaining close liaison with the ground forces commander.

b. Reconnaissance and counterreconnaissance on the ground complement one another and cannot be readily separated. Good ground reconnaissance assures simultaneously a certain amount of security. On the other hand, the activity of a counterreconnaissance force provides a certain amount of reconnaissance. Recon­naissance forces direct themselves against the enemy and move
freely about the terrain, while counterreconnaissance forces are fixed in relatively definite areas.

c. Should it be necessary to assign a force simultaneously to the mission of reconnaissance and counterreconnaissance, the order must state explicitly which has precedence. In forces of sufficient size, a portion may be assigned each task.

202. By attacking all hostile aviation, our aviation contributes materially to counterreconnaissance on fronts where it is important to conceal our own activity from hostile air reconnaissance. Complete elimination of hostile air reconnaissance cannot be expected. Where secrecy is desired, ground forces must conceal their movements and dispositions.

203. In its counterreconnaissance missions, aviation is supplemented by antiaircraft artillery and the suitable weapons of other ground units. Subject to the desirability of maintaining secrecy, all hostile aviation within range is fired upon to prevent observation. Before the fire of antiaircraft weapons is resorted to, consideration must be given to the fact that such fire may disclose the importance of the area being screened, and that camouflage and concealment may better serve our purposes.

204. a. Units assigned counterreconnaissance as their principal mission seek to defeat or neutralize hostile reconnaissance forces. In the execution of this mission, they operate offensively, defensively, or by delaying action, resorting to all forms of combat when necessary.

b. Offensive counterreconnaissance is most effectively executed by the defeat of the hostile reconnaissance force.

c. Defensive counterreconnaissance is most effective when the screen can be established behind an obstacle which might be crossed by hostile reconnaissance forces. Elements then are employed to obtain information, to attack advanced enemy detachments, or to obstruct their operations.

d. Aviation assisting in counterreconnaissance attacks hostile aviation attempting to cross the zone of counterreconnaissance and reports hostile ground movements, especially the approach of highly mobile units.

205. A counterreconnaissance screen may be either moving or stationary. A moving screen is especially applicable to a situation where the movement of a force must be screened; a stationary
screen is applicable in screening a concentration of troops or in preventing the enemy from reconnoitering an area.

Section III. COUNTERINTELLIGENCE

206. The primary object of counterintelligence is to neutralize or destroy the effectiveness of hostile or potentially hostile intelligence and subversive efforts.

207. Surprise is highly important to the success of any operation. Counterintelligence, by denying information to the enemy or misleading him as to our capabilities and intentions, assists the commander in achieving surprise. In any operation, regardless of type, it is imperative that knowledge of the time and place of decisive action be kept from the enemy. All other information should be kept from the enemy to the maximum extent consistent with efficient execution of the operation.

208. Counterintelligence activities and functions within a command normally include secrecy discipline; concealment; communication security; restrictions on the preparation, transmission, and use of documents; deceptive measures including feints, demonstrations, and ruses; regulation of the activities of press correspondents, photographers, radio broadcasters, visitors, and such other persons as may accompany or visit the command; censorship; countersabotage; security control of civil population; counterespionage. Counterintelligence personnel also assist psychological warfare agencies in the conduct of counterpropaganda activities (see par. 217). Counterintelligence functions, procedures, and forms are covered in detail in FM 30 series.

209. Security and operational efficiency are harmonious only up to a certain point, where their interests will inevitably clash. When this point is reached, the responsible commander must decide which will take precedence. Furthermore, care must be exercised in prescribing counterintelligence measures, as troops tend to disregard those which obviously are unnecessary or unreasonable.

210. a. Personnel must be trained to the constant observance of secrecy under all conditions. Military information such as instructions, plans, operations, movements, and the strength, composition, or location of units never must be discussed except in line of duty and then only with persons whose duties require such information.

b. Personnel will be trained with regard to their conduct if
captured. Each individual will be directed to reveal to the enemy his name, rank, and serial number only, and to maintain absolute silence when asked any other questions; to exercise utmost discretion in conversations with other prisoners.

211. In preparing operations, it frequently will be advisable to take special precautions to maintain secrecy. Such precautions, however, must not be so restrictive as to jeopardize the success of operations by withholding information necessary to the forces involved.

212. a. Maximum use must be made of natural and artificial concealment. Natural concealment should be supplemented by camouflage, where necessary. Since photographs will disclose things not visible to a observer's unaided eye, commanders must prevent the making of tracks or other telltale marks in the vicinity of any installation, position, or other area occupied by the command.

    b. Hostile air activity may require that troop movements in exposed areas should be made under cover of darkness and with restrictions on the use of lights and radios. When the enemy possesses an effective air force, a blackout system must be employed. Whenever possible, artificial means should be employed to mask the sounds of movement, especially in armored or motorized units.

    c. Under favorable conditions, smoke can be placed over restricted areas for limited periods of time to conceal information of importance.

213. a. Strict observance of regulations governing the preparation, transmission, and use of classified documents and other material (AR 380-5) is essential.

    b. Personnel in the front lines, on reconnaissance, or on missions over enemy territory, or other circumstances where capture is possible, will not have in their possession, under any conditions, any documents, official or personal, except those absolutely essential to the execution of the mission.

    c. Before leaving a camp, concentration area, bivouac, or rest area, and in withdrawals from defensive positions, troops will make a systematic search of the area to insure that no documents, material, or other items of intelligence value to the enemy, remain behind.

214. Commanders are responsible for the establishment and maintenance of signal communication security within their commands.
Strict observance of regulations regarding preparation, transmission, and use of classified messages, including clear-text copies and paraphrases thereof, is of the utmost importance. Units of the Army Security Agency are responsible for the security surveillance of friendly signal communication. Use of codes and ciphers is generally restricted to personnel specially trained in and cleared for cryptography.

215. Regulations governing the activities of press correspondents, photographers, radio broadcasters, and visitors must be carefully prepared and enforced. The activities of such persons are normally supervised by the public information officer of the command. He is guided in all security matters by the intelligence officer.

216. Censorship is the systematic channeling and technical examination of all communications, other than official matter, for the purpose of suppressing information of value to the enemy, of detecting illicit hostile activities, of insuring the accuracy of releasable military information, and of collecting information helpful to intelligence. The effectiveness of unit censorship and the efficiency of attached censorship teams is a responsibility of the commander.

217. The psychological warfare branch of higher headquarters such as army, army group, and theater, carry out counterpropaganda measures. Assistance is rendered by counterintelligence agencies which detect the covert means employed by the enemy for dissimulation of propaganda. It is essential that counterpropaganda measures be controlled and coordinated by the highest echelon concerned so that conflicting statements may not be given to the enemy.

218. Security measures applying to the civilian population are based upon policies announced by theater and higher headquarters and are normally executed by civil affairs or military government personnel in close coordination with Counter Intelligence Corps detachments and other counterintelligence agencies.

219. a. The mission of the Counter Intelligence Corps includes the conduct of counterespionage, countersabotage, and countersubversive activities. Each echelon of command, down to and including the division, has its own assigned or attached Counter Intelligence Corps detachment.
c. Counter Intelligence Corps detachments operate within the area under control of the headquarters to which attached or assigned, without regard to boundaries of subordinate units. Generally, Counter Intelligence Corps operations involve the employment of measures and techniques which are designed to detect and apprehend enemy agents, prevent sabotage, uncover subversive activities within or pertaining to the military and civil populations, and such other related tasks as may be required.
CHAPTER 6
SECURITY

Section I. GENERAL

220. a. Security embraces all measures taken by a command to protect itself against annoyance, surprise, and observation by an enemy.

   b. Knowledge of the situation and of the characteristics of the enemy's weapons and equipment and familiarity with enemy tactical doctrines and procedures, when disseminated throughout the command, increases the effectiveness of security measures.

221. a. The primary mission of a security detachment is to protect the command against surprise attack and observation by hostile air and ground forces, and to maintain freedom of maneuver for the command by gaining the time and space it requires to make the necessary dispositions. Reconnaissance provides information on which to base security measures to be taken for protection of the command. Continuous reconnaissance therefore is essential on the part of all security detachments.

   b. Security forces operate primarily with reference to the command they secure; reconnaissance forces operate primarily with reference to the enemy.

222. The commander prescribes security measures for the protection of the command as a whole and coordinates those adopted by subordinate commanders. Subordinate commanders provide additional security required for their own local protection, including the protection of their lines of communications unless such protection is furnished by the higher commander. Commanders maintain contact with adjacent security forces by signal communication facilities, liaison planes, liaison agents, and patrols.

223. All security measures include an adequate warning system consisting of observers and the means of signal communication to
warn promptly of hostile dispositions and operations on the ground or in the air.

224. When contact is imminent, security measures are increased. However, security forces should be only of sufficient strength to preserve the commander’s freedom of action. In their composition, consideration is given to preserving tactical unity. It is advisable that they possess mobility at least equal to that of the forces they are expected to oppose.

225. A carefully and completely integrated air-ground plan contributes to effective security. The ground commander should know exactly what friendly aviation is doing. All security plans should take cognizance of such action and be drawn so as to fit the air-ground plan, thereby taking advantage of warnings, information facilities, and assistance of the air forces.

Section II. SECURITY DURING MOVEMENT

226. A military force in movement secures itself by reconnaissance elements which operate in front of the command and by advance, rear, and flank guards when appropriate. Where terrain conditions permit, the reconnaissance elements are mobile. Depending upon the size and composition of the command, the reconnaissance elements vary from large units of all arms and aviation to small detachments.

227. In the offensive, large forces, particularly armored and other mobile formations, may be preceded by a covering force of combined arms. The purpose of such a force is the early development of the situation, including the crushing of hostile resistance within its power, or the seizing of a key terrain feature. Such a force precedes the column advance guards, hence must furnish its own security. It normally will advance by bounds from position to position. Against an aggressive enemy, care must be exercised to avoid defeat before the main force can intervene. A covering force of this type therefore should be given all possible mobility. Such a covering force employs the formations and tactics of any force of comparable composition and mission. Covering forces are used also on the defensive. For details see chapter 9.

228. The commander of such a covering force normally will operate under the direct command of the force commander. The protection afforded by the covering force does not eliminate necessary security measures by the commander of the main force. In an advance in several columns each column commander will provide
the necessary advance guard and such flank and other security as the situation requires. Mobile reconnaissance detachments will operate well forward of the advance guards, maintaining contact with the covering force.

229. a. The advance guard of a column precedes its main body to protect it against surprise and ground observation, and to insure for the main body adequate time and space for deployment. By aggressive action to overcome resistance within its capabilities it often makes it possible to defer deployment of the main body.

b. Once contact with strong enemy forces is made, the action of the advance guard depends upon the column commander’s plan for the employment of his force. In the absence of specific instructions the advance guard commander takes the action called for by his mission and the situation.

230. a. The advance guard commander is given early information of developments by supporting combat aviation, by reports from the covering force, if one precedes the column, and by his own mobile security elements. The advance guard commander is also kept informed of the plans of his commander as the situation develops. Thus by the time contact is made orders for the employment of the advance guard will usually have been issued.

b. If the covering force is already in contact with the enemy the advance guard may extend the action in accordance with the over-all plan. If only mobile reconnaissance detachments have preceded the advance guard the necessary measures are taken to develop aggressively the situation and protect the development of the command. Where the situation permits, this normally is best accomplished by the seizure of terrain critical to the needs of the main body. The enemy reaction to such action frequently will indicate both the hostile strength and dispositions.

231. The strength and composition of an advance guard vary with the strength and mobility of the command, its mission, the situation, the terrain, and the time of day. It should be no stronger than is necessary for security. Greater strength is required as the distance from the enemy decreases. For large commands, it comprises components of all arms. Engineers are kept well forward in advance guards. Artillery with the advance guard is prepared for prompt support, displacing by bounds from one firing position to another when contact is imminent. (See chapter 6.)
232. a. Reconnaissance aviation and organic light aviation may transmit urgent information directly to advance guard commanders. Ample signal communication between the covering force and elements of the advance guard and between the advance guard and the main body must be provided.

b. Organic light aviation is particularly useful for communication purposes within the column.

233. a. The distance between the advance guard and the main body is sufficient to preserve for the commander his freedom of action in the employment of the main body, but is never so great as to expose the advance guard to defeat before assistance can reach it. Distances are reduced at night, in close terrain, and under conditions of low visibility and restricted observation.

b. An advance guard accomplishes its mission by searching the terrain to the front and on each side of the line of march, overcoming isolated hostile resistance, and preparing so far as practicable the route of advance for the movement of the troops by removing obstacles and mines and by making minor repairs to bridges and roads. It reconnoiters those points which afford extended observation of the dispositions of the main body, or which provide concealment for hostile reconnoitering or harassing detachments. Its reconnaissance elements are aggressively supported. Artillery with the advance guard is prepared constantly to support the advance with part of its strength and with all its fires in minimum time. The advance guard seizes and holds important features of the terrain, particularly those that will cover the deployment of the main body from hostile observation. According to circumstances it drives back hostile covering detachments, or opposed an enemy advance in force.

234. The formation of an advance guard is such as to insure its own security and provide sufficient distribution in depth and width for its maneuver. From front to rear, it is divided into highly mobile reconnaissance detachments: the point, the advance party, the support, and the reserve. In small advance guards, the reserve may be omitted.

235. When hostile resistance is met, the elements of the advance guard deploy successively on a broad front. Prompt support of leading elements is necessary. Precautions are taken against infiltration by hostile elements.

The considerations governing the advance guard of a force still apply also to the security of more mobile forces. The
principal modifications result from the superior mobility of the units. For these units, advance guards operate with greater distances between their own elements. The zone of reconnaissance is more extensive, both to the front and to the flanks, to provide the necessary time for deployment of the faster moving force. Movement normally will be by bounds making a constant formal delineation between point, advance party, support, and reserve impractical. Close cooperation of reconnaissance aviation is essential.

237. a. When the flanks of a command are not protected by adjacent units, it frequently will become necessary to provide protection by using a portion of the command as a flank guard whose mission is to protect the marching column from ground observation and surprise from the flank, and in the event of an attack in force to provide the necessary time and space for the development of the main body. The flank guard usually moves parallel to the main body, either by bounds from position to position, or employing the tactics of an advance guard, as appropriate.

b. When the main body executes a flank march in proximity to the enemy, flank protection assumes great importance; a strong flank guard is detailed. The advance guard may be converted into a flank guard to provide the protection required by a change in the direction of march. In this event, a new advance guard is organized.

238. The rear guard consists of a portion of the command which follows the main body in the zone of march, usually by bounds, for protection of the rear of the main body from attack, observation, or interference by hostile forces.

239. When the command makes a long halt during the course of a march, the advance or rear guard establishes a march outpost, usually from the support. Units of the support occupy critical terrain features controlling the approaches to the column, establish outguards at commanding points, and when necessary, send out patrols.

Section III. SECURITY AT A HALT

240. A resting force secures itself by means of outposts which are security detachments consisting of portions of the command disposed to cover its front, flanks and rear, in order to protect the force against annoyance, surprise, and observation by hostile ground forces.
The strength, location, and composition of outposts vary with the location, mobility, armament, and capabilities of the enemy; the terrain; the time of day; the size of the command to be secured; the degree of resistance desired; and the special tasks assigned. Its strength should be sufficient to permit timely warning; and delay when necessary, of any hostile force which may penetrate more distant security elements, until the main body can complete preparations for action. An outpost should be no stronger than is consistent with reasonable security. An outpost may include varying proportions of the combined arms. Engineers assume great importance due to the necessity for the construction of obstacles and, at times, of demolitions and destruction.

242. The outpost of a large command is divided from rear to front into reserve, supports, outguards, and sentinels. When important points to be secured lie outside the sectors of the supports, detached posts are established.

243. The missions of the reserve are to reinforce the forward elements of the outpost; to counterattack; or, if the outpost has been given a delaying mission, to occupy a position covering the retirement of the supports.

244. Supports constitute the principal echelon of resistance of the outpost. Supports provide their own security and perform observation by establishing outguards and sending out patrols. They are placed at the more important points dominating or controlling the approaches into the outpost area. Each support is assigned a sector which is clearly defined. Supports vary in strength from a platoon to a company. Supports are numbered consecutively from right to left.

245. a. An outguard varies in strength, depending on its mission, location, and the number of sentinels it is to furnish. Posts at a short distance from the support may be held lightly by outguards while important posts or those at a considerable distance must be held strongly. Outguards are numbered consecutively from right to left in each support.

b. Outguards must be ready for action at all times. When in close contact with the hostile outposts, the establishment of listening posts at night in front of the general line of observation is advisable.

246. Sentinels to observe the assigned area of responsibility of an outpost position are furnished by the outguards. These sentinels
have the mission of discovering hostile activity, giving the alarm in case of attack, and carrying out other orders specifically prescribed for their posts. Sentinels should be posted in pairs.

247. Detached posts are established at critical points located beyond the limits of any support sector. The size and composition of a detached post may vary within wide limits depending on both the terrain and situation.

248. Outposts conduct reconnaissance as well as friendly contact missions within the limits required by their security mission. More distant reconnaissance is conducted by means directed by the next higher commander.

249. Patrols execute reconnaissance in advance of the line of sentinels and in areas not covered by sentinels. Patrols also maintain contact between elements of the outpost.

250. Patrolling in front of the line of observation is increased at night or during periods of low visibility. Night patrolling requires systematic organization, careful preparation, and the coordination of advanced outpost elements with the activity of the patrols.

251. During an advance, the outpost established at night or for other similar halts usually is furnished by the advance guard. A new advance guard is designated when the movement is resumed after an extended halt. The outpost ordinarily stands relieved when the support of the advance guard passes the outpost area.

252. During a retrograde movement, the outpost usually furnishes the rear guard, a new outpost being posted from the main body when the command completes the day’s march.

253. When the command remains stationary for a prolonged period, the outpost ordinarily is relieved at intervals of several days.

254. The halt order of the commander assigns locations to the elements of the command, designates the position to be held if attacked, and contains instructions relative to security. This order either provides for an outpost under centralized control by naming the outpost troops, or it requires column commanders to organize outposts for their commands. In either situation, the commander designates the general line to be held, the limits of the front to be covered by the outpost system and the division of responsibility between units. He indicates what action the out-
post is to take if it is attacked in force, outlines special reconnaissance to be executed, indicates the approaches which are to be especially guarded, and regulates the signal communication to be established between adjacent outposts. He may direct the establishment of detached posts either by elements of the main body or by the outpost.

255. a. The elements of the outpost conceal their locations and movements from ground and air observation. They prepare their positions for all around defense. Maximum use is made of obstacles and mines, antitank and automatic weapons, and long-range fires by artillery. The outposts thus attempt to deceive the enemy as to the true disposition of the main body.

b. Antitank weapons with the outpost are emplaced to cover the favorable approaches. Positions suitable for daylight occupation will frequently require modification to night positions which control night approaches, such as roads.

256. The outpost should be supported by adequate signal communication means established to facilitate prompt report to the commander of important information. Signal communication installations involved should consider both day and night locations.

257. Armored cavalry and motorized units detailed for outpost should be used to extend reconnaissance and to add increased depth to the security. When at a distance from the enemy and not protected by other troops, these mobile units may be used to provide security detachments to hold critical points on the routes of approach from the front, flanks and rear. These detachments preferably are posted along favorable terrain features such as defiles, streams, and crossings which the enemy will be forced to pass in his advance. Outguards are posted and patrols sent out from the detachments. Additional close-in security may be required by the main force. In close proximity to the enemy the mobility of such units cannot be profitably exploited and they generally will be replaced by less mobile elements.

Section IV. SECURITY MEASURES WITHIN BIVOUAC AREAS

258. Security in a bivouac area is obtained by active and passive measures. All units are responsible for their own tactical security. Rallying points should be designated by each unit with routes there to for each subordinate unit. Plans are prepared to fight
259. a. An interior guard is established to defend important activities or installations, and especially valuable matériel such as guns or aircraft, to give the alarm in case of air, airborne, ground, or gas attack, and to enforce traffic, police and camouflage discipline. Such guards should be given the maximum protection commensurate with the full performance of their duties.

b. In hostile territory, interior guards are made stronger. It is often necessary to have guards for bridges and railway stations; searching parties for enemy wire and radio installations; guards for prisoners, hostages, roads closed to civilian traffic; and for other special security measures.

260. Antitank weapons are emplaced for direct fire in the event of armored attack. Antiaircraft weapons are habitually located to permit ground fire when such does not interfere with the primary antiaircraft mission. When antiaircraft artillery units have been relieved of their primary mission, all antiaircraft weapons may be sited for defense against armored attack. However, no weapons should reveal the location of a concealed bivouac by premature fire.

261. In addition to the responsibility of each unit for its own antiairborne security, mobile units of the reserve may be designated to provide antiairborne defense as a high priority mission.

262. a. A minimum of one officer at each headquarters of company size or larger, and one noncommissioned officer in each platoon, or similar unit, are constantly on duty to alert the command in an emergency.

b. To alert all the troops, a general alarm is sounded. If the area commander decides to alert only certain troops he notifies them by the quickest means available. Upon alert each unit assembles in its designated area and reports its readiness to the commander. Quiet and order are maintained. Prior rehearsals are held in order that each man may know where to go and what to do.

263. Passive measures include dispersion, concealment and cover. Individual cover should be available against air or armored attack. Camouflage measures are taken when required by the situation.

Section V. SECURITY AGAINST ARMORED ATTACK

264. Coordination of all means of security against armored attack is a command responsibility. Each unit commander constantly
employs all means available to him for this purpose. Measures taken will be integrated by higher headquarters to insure coordinated security against an attack of any type. This coordination is achieved by advance planning and timely orders. Improvement of the security against hostile armor is a continuous process.

265. a. The security measures habitually taken for the local security of each unit include provision against armored attack. The force commander will coordinate these local security measures by the assignment of specific sectors of responsibility and by prescribing other important details.

b. Security provisions for the protection of the force as a whole also include provisions against armored attack as part of the integrated security plan. Certain measures affording such protection afford common protection against attacks of other types, both ground and air. For example, mobile reserves strong in armor usually are held in reserve centrally located for use as a maneuvering force against possible attacks including armored and airborne.

266. a. Both active and passive measures are utilized in integrated combination. Active measures include employment of field artillery, combat aviation, chemical agents, antiaircraft artillery of types capable of direct fire against ground targets, tanks and other antitank weapons. Missions assigned in instances will be secondary to the primary missions assigned certain of the weapons involved.

b. Passive measures include air and ground reconnaissance, use of concealment, cover, antitank mines, demolitions and natural and artificial obstacles including the use of buildings and organized localities.

267. a. All such measures should be employed to insure maximum effectiveness. An efficient warning system with a coordinated intelligence and signal communication system provides for early and continuing information of the presence and action of hostile forces including armor or air. Friendly air missions are employed to discover and attack hostile armor and when necessary assist in transmission of information and orders. A map study, supplemented by air and ground reconnaissance, discloses favorable avenues of approach particularly for armored forces. Skillful use of natural barriers, strengthened by concealed mine fields and other man-made obstacles afford the best anti-armored defense provided they are adequately covered by fire.
b. Armored cavalry reconnaissance elements operate well to the front and flanks to give warning. All round observation and reconnaissance agencies are trained to make immediate report of an armored threat by the most expeditious means available. When the tactical situation permits, artillery may be used at long and medium ranges to break up hostile armored attacks and at medium and short ranges to destroy individual tanks.

268. For details of defensive measures against armored attack see chapter 8.

Section VI. SECURITY AGAINST AIR ATTACK

269. All units must take appropriate measures against air attack and air reconnaissance. Measures taken by units for their own protection are a responsibility of command and should be included in orders. Active means of protection include fighter aviation, antiaircraft artillery and other suitable organic weapons. Passive means include the air warning system, concealment, dispensor and cover. Measures taken vary with the situation, the degree of visibility, the concealment and cover afforded by the terrain, and the capabilities of the enemy's aviation.

270. Measures authorized units for their own protection must provide for reliable identification of aircraft through either an air warning system or by the actions of the aircraft themselves. In planning for defense against an attack commanders take into consideration the effectiveness of available weapons, the tactics and effectiveness of hostile air, dispersion of troops, terrain characteristics, and requirements of speed and stealth of movement.

271. In the combat zone, the antiaircraft artillery with the field army provides the antiaircraft defense of all airfields and other Air Force installations, field artillery, principal troop concentrations and assembly positions, important command and supply installations, and movement of troops through defiles and other critical localities.

272. The first requirement of antiaircraft security is an efficient warning system to detect and trace movements of hostile aircraft, and to disseminate timely information to friendly agencies.

273. Upon receiving an air alarm, troops in position, bivouac, or billets, seek the nearest concealment or cover and remain motionless. In general, foot troops on the road deploy and seek cover. When time of warning permits, foot troops will deploy off the
road and continue the march. In general, motorized or armored troops continue the march, quickening their speed when possible. All suitable weapons open fire on hostile aircraft when the situation favors such action.

274. When the situation indicates the necessity for continued movement, particularly by day, and a command is subjected to frequent air attacks, maximum advantage is taken of dispersion and available concealment and cover without delaying the movement. Troops must be prepared to accept some casualties rather than delay arrival of large units at their destination at the appointed time.

275. A command diminishes its vulnerability to air observation and attack by adopting dispersed formations and increasing speed of movement. Dispersion in formation may be accomplished by increased width and depth of disposition or by reduced density within columns or groups.

276. Measures taken for concealment seek to thwart both hostile visual reconnaissance and air photography. The presence and position of troops are disclosed to an air observer by movement, by regular formation or outline, by reflection of light, or by dust, smoke, or newly made tracks and intrenchments. Commanders will take appropriate countermeasures to prevent detection. All troops should be impressed with the necessity for individual camouflage protective measures.

277. a. Shadows cast by the sun early in the morning and late in the afternoon facilitate concealment. During darkness, blackout provides effective concealment. Artificial illumination can be used to increase concealment by blinding the enemy as well as by casting shadows. Woods and villages afford concealment from air observation and reconnaissance. Individual cover is provided by digging fox holes.

b. Intrenchments and field works are visible from the air unless carefully sited and camouflaged. Protection is sought by the distribution of the defenses on the terrain and by their adaptation to concealment and cover, such as buildings, brush, hedges, banks, ditches, and cuts.

278. The antiaircraft security of a column depends in large measure on the success of its concealment in its last bivouac. During movement security measures must consider the visibility and the
possibilities of dispersion. Proper march planning will usually permit adequate dispersion during the formation of march columns and movement into bivouac or assembly areas at the end of a march. During temporary halts troops and vehicles clear the road and take full advantage of cover. Distances between vehicles and elements in the column are increased when the situation permits. Antiaircraft protection is particularly essential at crossings and at defiles. If sufficient antiaircraft is available some should be distributed within the column to supplement organic means.

Section VII. SECURITY AGAINST AIRBORNE ATTACK

279. a. The threat from airborne troops requires special security measures. Responsibility for these measures extends through all echelons of command. The measures adopted within each echelon are coordinated to provide a unified system over the entire danger area.

b. Many of the security measures taken against armored attack constitute common protection against airborne attack. Security measures common to both include warning systems, certain reconnaissance measures and the provision of mobile reserves.

280. a. In general, the security measures required should provide early information, permit attack of incoming enemy transports by combat aviation and antiaircraft fire and the destruction of parachute troops while they are in the act of landing or immediately after. Landing forces not so destroyed should be isolated from resupply and reinforcement and attacked and destroyed as rapidly as the situation permits.

b. Passive measures include the obstruction of all possible landing fields not required by friendly air operations. Areas obstructed would include landing fields, open fields, straight stretches of level highway or other possible drop zones, or landing fields for hostile airborne troops.

281. For additional details relative to antiairborne security measures see chapter 9.

Section VIII. SECURITY AGAINST CHEMICAL ATTACK

282. Responsibility for the measures necessary to provide security against chemical attack lies with the unit commander. Timely and adequate protective measures will minimize the likelihood of a chemical attack or greatly reduce the effectiveness of the attack should the enemy resort to this type of warfare.
283. Protective measures include provision for the following: an adequate warning system; individual and collective protective equipment; facilities for prompt decontamination of individuals, equipment, supplies, and areas which must be used by friendly forces; prompt treatment of chemical agent casualties; and tactical measures which minimize the effects of chemical agents. To obtain maximum effectiveness from the measures enumerated, training in their use or application must be thorough and continuous.

284. Protective equipment to assist the commander in discharging his responsibility consists of two general types—

a. The protective equipment provided for the individual soldier consisting of the gas mask, protective ointment, protective covers, and protective clothing.

b. Collective protective equipment provided for the protection of groups of individuals or organization equipment and supplies, consisting of collective protectors for gas proof shelters, protective covers for equipment and supplies, gasproof curtains, and decontaminating equipment and supplies.

285. The tactical measures taken by a commander to protect his command from chemical attack includes: troop dispositions which take advantage, as far as practicable, of terrain unfavorable for gas concentrations and the avoidance, evacuation, or decontamination to the extent possible, of gassed areas.

Section IX. SECURITY AGAINST RADIOLOGICAL WEAPONS

286. The introduction of atomic weapons has produced the additional problem of protection of personnel from the harmful effects of radiation and radio-active materials. Increased dispersion of units and installations up to the limits of effective control will reduce the effect of atomic weapons. Protective measures include radiation reconnaissance, posting of danger areas, and insuring that personnel required to enter these areas do not receive more than the maximum safe exposure to the radiation.

Section X. SECURITY AGAINST BIOLOGICAL WARFARE

287. The threat of biological warfare imposes upon all commanders the responsibility for protection of personnel from the effects of this form of attack. Definite information of the employment of biological warfare will probably be disseminated
CHAPTER 7

TROOP MOVEMENT

Section I. GENERAL

283. Troop movements are made by marching (by foot, animal, or motor), by rail, by water, by air, and by various combinations of these methods.

289. A successful movement places troops at their destination at the proper time and in effective condition for combat. It is the task of commanders to reconcile the conflicting requirements of rapidity of movement and conservation of fighting power.

290. Special attention to the care of troops and to the means of transportation is essential to successful movement. Commanders take the necessary measures prior to a movement to place men and transportation in the best possible condition and exercise the necessary supervision during and after the movement to maintain them in that condition. Extremes of weather constitute one of the greatest sources of hardship on the march.

Section II. FOOT MARCHES

291. The ability of a command to achieve decisive results on the battlefield may depend, in a large measure, upon the marching capacity of the troops. Troops must be conditioned to withstand the most unfavorable march conditions which they are likely to encounter in operations. They must be hardened gradually to this standard. Once attained, standards should be maintained, even though extensive use at times may be made of mechanical transport.

292. During active operations, troops must not be allowed to become unnecessarily fatigued. They are not kept in column nor under arms any longer than necessary, and full use is made of
mechanical means of transport for both the men and their equipment.

Section III. MOTOR MARCHES

293. Since it will not always be possible to attach sufficient motor transportation to a command to enable it to move all its personnel and equipment in one trip, the ability of a command to concentrate superior forces quickly at the desired place, in time to achieve a decisive result, will often depend upon skill in the use of organic motor transportation to move by echelon. Whether the normal loads of motor vehicles are dispatched before or after the foot troops depends upon the nature of these loads and the tactical situation. The amount of organic transportation which prudently can be diverted from its normal purpose to move foot troops depends upon the degree of readiness for combat required by all or part of the command, the supply requirements, the hazard of immobilizing essential loads at a critical time, and the consequence of possible disorganization of the command by enemy action. Except for those vehicles issued for the movement of active weapons, such as prime movers or weapon carriers, all trucks of any unit are considered as a pool of transportation to be used as required.

294. The location of the detrucking area is largely dependent on the time required to complete the movement, the enemy's capabilities to interfere with the movement, the location of cover and terrain suitable for the detrucking, and the employment of the troops involved. The time required to complete the move is affected by the number and condition of roads, the distance between entrucking and detrucking areas, the available transport, the time length of columns, the delay caused by enemy interference or other obstructions, the time lag between the issuance of orders and the beginning of the march and, if the move is to be made in more than one trip, the time consumed in loading and unloading personnel and equipment and in assembling and organizing vehicles at turnarounds.

295. a. In the execution of movements, the commander divides his command into tactical groupings which are moved successively to their destination. Completely mobile units, such as armored divisions, can make the entire movement in one forward trip using organic transportation. Units which are not completely mobile, can move successive tactical groupings by augmenting their organic transportation with transportation obtained from higher headquarters, or can accomplish the move in two or more trips, using their organic transportation only.
b. When necessary, administrative loads not immediately needed for combat can be left in the old area and moved forward when the movement of troops and essential equipment and supplies has been completed. As far as practicable each grouping for movement is composed of the units normally associated tactically in combat, together with the organic weapons, ammunition, and rations, of such units, so that each grouping will constitute a tactical formation ready for combat employment at its destination.

296. Foot and motor movements may be combined. When a movement by organic motors cannot be completed in the allowable time, a combination foot and motor move may be advisable. Foot troops to be transported in a later echelon may march from the initial point to an intermediate entrucking point where they will be met and picked up by vehicles returning from an earlier echelon; or foot troops transported in an early echelon may be detrucked short of their destination and march the remainder of the distance while their vehicles turn around and return for the foot troops of a later echelon. Plans for a combined foot and motor movement must be flexible because circumstances in forward areas can easily disrupt the time schedule.

297. In an overseas theater of operations, the available motor fuels and motor transportation are generally limited, and at times critical. Frequently however, large bodies of troops must be moved quickly either to intervene decisively in combat or to exploit a defeated enemy. Such movements often are organized so that the foot elements of the command are transported in organic and attached transport, without unloading normal loads, to permit the command to move as a whole, without return trips for personnel or other loads remaining at previous locations. In order to accomplish this type of movement, motor transportation is overloaded. The individual soldier may ride in or on portions of the vehicle not designed for personnel accommodations. Tanks and other special purpose vehicles also afford transportation for foot elements. Even under these conditions, the tactical integrity of the foot elements should be preserved.

298. Preparations for and the conduct of movements by successive trips are greatly facilitated by the adoption of standing operating procedures. Otherwise, the preparation of plans and orders for such movements are very time-consuming.

299. When combat is probable, special attention is given to the protection of the detrucking area, to the composition of the
tactical group moving in the first trip, and to the security of the routes of movement to the detrucking area.

Section IV. NIGHT MARCHES AND FORCED MARCHES

300. Night marches often are required to provide concealment from air and ground observation and security from air attack. They may be made for the purpose of avoiding excessive heat.

301. Night marches must be carefully planned. Prior reconnaissance of routes and assembly areas is especially important. Special precautions are taken to insure the maintenance of direction and contact within the column. Guides and connecting groups usually are necessary.

302. When troops are being moved by night marches for the purpose of concealment, movement before dark except by small detachments should be prohibited, and daybreak should find the troops either in position or in concealed localities. Measures to maintain secrecy must be rigidly enforced. Such measures may include enforcement of light discipline; instructions to halt or to clear the road when illuminated by flares; rapid bounds by motor elements between successive areas of concealment; radio silence; and when near the enemy, the maintenance of silence by personnel, and so far as practicable, the suppression of noises made by vehicles and equipment.

303. Forced marches impair the fighting power of troops and are only undertaken in cases of necessity. Available motor transportation is used to the maximum to meet the requirements. The length of marches of foot and mounted troops is usually increased by increasing the number of marching hours a day, rather than by increasing the hourly rate of march. The march may be broken by halts of several hours' duration. A long forced march practically becomes a succession of daily marches of greater than average duration. (See FM 101–10.)

Section V. TACTICAL CONSIDERATIONS

304. The factors which exercise the greatest influence upon dispositions for marching are the composition and the proximity of hostile ground forces, the nature of the terrain, and the activity of hostile aviation. Contact with hostile elements should be expected from any direction not protected by friendly forces or terrain barriers.
305. a. The principles of security apply, and appropriate measures must be taken for security in all types of movement. When contact with the enemy is imminent, tactical considerations govern march dispositions. Columns are constituted in accordance with their tactical missions. Service troops and kitchen and baggage trains may be held in a protected area and moved forward under cover of darkness, after the hostile situation has been developed. When the situation permits the movement may be made by bounds during daylight.

b. When contact with enemy ground forces is remote the principal object of march dispositions is to facilitate and expedite the movement of troops and to conserve their energy. Commanders make use of the available motor transportation for moving foot troops. As far as practicable, columns are composed of units having the same rate of movement. Columns having different rates of movement are assigned separate roads or their movements by the same road are echeloned in time.

306. In an advance against the enemy a large unit is assigned successive objectives, or a mission and a zone, or routes of movement. A large unit whose zone of movement includes several routes assigns routes or zones to its component units in accordance with its plan of maneuver.

307. The commander's movement order prescribes the time and place of departure of his columns so as to produce the desired formation. Movements may be controlled by prescribing the hour when the head of the main body of the respective columns will continue the advance beyond the designated phase lines. Intermediate objectives may be prescribed in the order or during the movement. Column commanders report promptly when these objectives are reached and at other designated times. The imminence of contact with strong forces prepared for battle, the probable inequality in progress of the several columns, and suitable terrain affording concealment, cover, and tactical advantages largely determine the length of bounds. Control of the movement may also be obtained without the designation of phase lines. Under this procedure, subordinates furnish periodic position reports and the commander effects his control by issuance of orders during the movement.

308. When the enemy main forces are distant, large forces usually move in a broad and deep formation in order to permit flexibility of maneuver and to achieve rapidity of movement. Reconnaissance troops connoiter the assigned zone and gain contact
with the hostile forces. Security against motorized and armored forces is provided in the zone of reconnaissance through the successive seizure of road centers and natural terrain lines and by the aggressive action of mobile elements operating well to the front and on unsupported flanks.

309. On closer approach to the enemy, the zone of reconnaissance becomes less extensive and less time is available to prepare for combat.

310 a. A formation in depth provides maximum flexibility of maneuver but delays deployment in the direction of movement. It is the easiest of all formations to control, enables the commander to exert the maximum influence in coordinating the action of the forces initially engaged, and insures the availability of units intended for maneuver.

b. A formation in width increases readiness for deployment in the direction of movement. Maneuverability is restricted, especially after gaining contact; changes of direction are difficult.

c. A formation in which columns are echeloned to a flank facilitates maneuver and deployment to that flank and retains, to varying degrees, the advantages and disadvantages of both formations in width and depth.

311. When contact with strong forces prepared for battle is imminent, the commander assures himself of continued possession of terrain suitable for subsequent maneuver and develops his command for combat. He coordinates further advance by prescribing lines that will be seized by the advance guards while the main bodies of the respective columns are suitably disposed for combat within supporting distance. After a march has begun, variations in echelonnement are obtained by halting certain columns or by changing the duration of their rest periods.

312. In an advance, commanders and their staff parties are well forward. The commander goes where he best can control the operation, usually with his principal column or with the column along which the axis of signal communications is being established. Ordinarily, the commander and his staff party move by bounds to successive locations where messages may be received and sent. He may be accompanied by one or more of his principal subordinate commanders.

313. Signal communication between columns and with the superior commander is regulated ordinarily by standing operating
procedure, supplemented, as necessary, by special instructions. Ordinarily, the means employed are messenger and radio. Light aircraft, including organic aviation, may be used to maintain contact between columns and to report their arrival at successive march objectives. Existing commercial signal communication systems are utilized where desirable.

314. A column includes all units under a single commander which use a single route. A column includes its security detachments, the main body, and the trains. The formation and movement of each of these groupings are regulated by a designated commander in accordance with instructions of the column commander. Distance between the groupings is regulated by the column commander. The maintenance of roads and the removal of obstacles make advisable and may require the presence of an engineer unit with the advance guard or near the head of each principal column. For details of advance guard movement see chapter 6.

315. The order of march of a column of all arms advancing against the enemy is dependent upon the terrain, the tactical situation, the mission of the column, and the relative mobility of the component units. The order of march of security detachments ordinarily is prescribed by their respective commanders. The column commander prescribes the order of march of the main body.

316. a. When contact with the enemy is possible, the order of march of a column composed of elements of approximately equal mobility is based upon the requirements of security and the probable order of entry of units into action.

   b. Artillery is placed within the column in order to insure its availability for early and adequate support of the security forces and the initial action of the main body. Provision should be made for the protection of this artillery.

   c. Antitank weapons are disposed to provide protection to the moving column. Some antitank weapons are attached to security detachments.

   d. Motor vehicles required in the exercise of command and control of the column ordinarily advance by bounds. They interfere to the minimum extent with other elements. Administrative motor elements pertaining to staff parties ordinarily move at either the head or tail of their units.

   e. Trains are so placed in the column as to be available to their units when required. Trains not immediately required may be
317. Orders for troop movements must be issued sufficiently in advance to permit preparation for those movements by the troops. For details see FM 101-5.

318. Routes should be reconnoitered and marked prior to the commencement of the march. Bridge capacities should be indicated. The dimensions of underpasses should be checked against vehicle dimensions. Timely measures are taken for preparation of stream crossings and for the removal of obstacles and other possible causes of delay. Careful examination is made of fords, bridges, and ice before attempting a stream crossing.

319. Cross-country marches usually will be necessary in the development and approach march preliminary to battle, or in the extension of a command for the purpose of diminishing its vulnerability to air attack.

320. On approach of a column to close contact with strong hostile forces, it becomes necessary to abandon the road and to develop the route column into a broader formation. The development of a large command is expedited by an advance in several columns. The area where development starts ordinarily depends upon the effectiveness of the enemy’s artillery fire. As a rule, time can be saved and losses avoided by detouring isolated areas under hostile observation or fire rather than by starting early development.

321. The development of the column is effected by breaking the single column into several roughly parallel columns, each of which is assigned a march objective. As contact with the enemy becomes imminent, these columns themselves are developed into smaller columns. Time is generally gained in the execution of the development by assigning the longest routes to the leading units of the column.

322. The result of the complete development of the command is the distribution of the troops in accordance with the commander’s plan of action. The development of a division usually terminates in the occupation of attack positions by front line units preliminary to deployment for attack or defense. (See par. 414.)

323. Whenever practicable, assembly areas are chosen which are screened from hostile air and ground observation. Terrain which provides turn arounds for motor vehicles, natural protection
against an armored attack, and accessible ground observation is desirable. The position should be such that the troops have at their disposal favorable lines of advance to their combat positions. When the terrain does not afford concealment, the assembly areas of a division in daylight are usually beyond the effective range of medium hostile artillery. The assembly areas are protected by antitank and antiaircraft weapons and local security detachments. At times combat aviation may be necessary and available for this purpose.

324. Massing of units in close formation in assembly areas is avoided. Units are separated by sufficient intervals and distances to insure that concentrated targets are not offered to hostile air attack or artillery fire. When the possibility of attack by other weapons exists, dispersion should be increased to the maximum degree the tactical situation permits. Each unit makes its own provisions for local all-around security.

325. When a command executes its development under cover of darkness, all preparations for the movements are completed, as far as practicable, before dark. Forces in contact aggressively develop the hostile situation. Routes of advance are reconnoitered and marked. Artillery prepares to protect the occupation of the assembly area by occupying suitable firing positions before dark or completing its preparations for night firing. In general, the pertinent provisions for night marches apply during such a development.

**Section VI. MARCH DOCTRINES**

326. **a.** In each arm and service, movement is based upon march units and serials. In foot units, the foot elements of the battalion constitute a serial and the companies or platoons constitute march units. In motorized and armored units, the size of the march unit is governed by the number of vehicles that can be easily controlled by one commander. March units are grouped together into serials to facilitate control and to simplify the issuance of orders.

   **b.** In each march unit the order of march of the several component units, is normally changed daily. Rotation in the order of the march of larger units also may be ordered when permitted by the situation.

327. **a.** Distance between march units, and between elements within march units, is prescribed for each march in accordance with the situation.
b. Differences in the rate of march in columns are absorbed as far as practicable within the space between march units. In motor columns, differences also are absorbed between vehicles. (See FM 25–10.)

328. A march serial composed of more than one march unit is placed in the desired order of march by scheduling the arrival of the successive march units at an initial point. The initial point is located in the direction of march. It should be inconspicuous to hostile air observation and easy to identify on the ground.

329. The location of initial points, and the time at which the heads of columns pass and the tails of columns clear them, are stated in the march order or in a march table accompanying them. When a large unit marches in several columns, the march order should fix an initial point for each column.

330. Commanders of the serials composing each column consider the route to be followed in reaching the initial point, calculate the time required, and start their commands so that there will be neither delay nor waiting at the initial point or elsewhere.

331. When several elements of a command marching by different routes are to join on a single road or when their routes of march cross each other, arrival at or clearing of the point of junction is so timed as to prevent interference between columns. The time of arrival at and clearance of such critical points will be stated for each serial in the march order.

332. When an unforeseen crossing of two columns occurs and no control personnel of a superior headquarters is present, the senior commander present regulates the crossing, basing his action on the situation and the missions of the two columns.

333. Motor columns may move in open or close column formation at prescribed rates or by infiltration. (See FM 25–10.)

334. Ordinarily, troops keep to the right of the road, leaving the left free for passage of other traffic along the column. On muddy, sandy, or dusty roads, or when both sides of the road provide concealment from air observation, or when attack by hostile combat aviation is probable, troops may be directed to march on both sides of the road, the middle of the road being kept clear for other traffic. Guards should always be posted in rear of troops on the road to warn approaching vehicles and prevent them from running into the tail of the marching column.
335. Halts during a march are a necessity and are habitually taken at regular intervals to rest men and animals, to service vehicles, to adjust equipment, and for other purposes. Halts generally are regulated by standing operating procedure, or by the march order. Unit commanders are promptly notified of the time and approximate length of any halts not provided for in the standing operating procedure or march order. Security, comfort of the troops, and their use in future operations influence the selection of the location for a halt.

336. a. After the first halt, usually 15 minutes, columns containing foot elements halt 10 minutes each hour. The halts of motor columns are made every 2 or 3 hours, and usually are specified in march orders. March units of foot troops halt simultaneously and resume marching simultaneously; all march units of motorized or armored troops may halt and resume marching simultaneously or successively. At the signal for the halt, units bear to the side of the road. On order troops fall out or dismount to rest. The road must be left clear by units at a halt.

b. Shortly before the termination of the halt, the commander of each march unit gives the preparatory signal for the resumption of the march. Foot troops fall in, mounted men remount, drivers resume their seats. Each unit moves out at the signal of its unit commander.

337. It is desirable to finish the day's march early. However, the length of the march or the desirability of avoiding excessive midday heat may render it advantageous to make a long halt toward the middle of the day. At long halts, each unit or group moves to a previously reconnoitered location near the route of march.

338. Men are not permitted to fall out during the march or to leave the immediate vicinity of their unit during halts, without the specific authority of an officer of their unit, an officer who is charged with keeping the unit closed up and with preventing straggling marches at the tail of each march unit. This officer examines men who fall out on account of sickness or sore feet, and gives them a written note to the surgeon or requires them to continue the march. A small guard marches at the tail of each regiment and separate unit to control stragglers not admitted to the medical vehicle by the surgeon. March casualties are reduced by prompt foot inspection at the close of each day's march. Such inspections usually are conducted by company officers in conjunction with Medical Department aid men.
339. One or more medical vehicles march in rear of each regiment and similar unit for the transportation of men who become sick or disabled. One of the medical officers on duty with a troop unit marches in rear of the unit. He examines men who fall out for medical reasons. He admits them to the medical vehicle or authorizes them to place arms and equipment, in whole or in part, on that vehicle or other transportation provided for the purpose, or directs them to report to the guard in rear of the regiment.

340. A vehicle which is compelled to halt moves off to one side of the road and signals vehicles in rear to pass. Disabled vehicles are removed promptly from the road. Motor maintenance elements normally are placed at rear of column.

341. Assemblies from march columns may be made at long halts, to occupy assembly positions during development for combat, at entrucking and detrucking areas, and for other purposes. The column commander selects the assembly area in accordance with the situation or instructions received. He allots portions of the area to component elements according to the situation and probable future action. When contact with enemy ground forces is remote, march considerations and comfort of the men may govern dispositions for assembly. In large units troops are sheltered as close to the route of march as practicable and are distributed in depth to facilitate shelter, supply, the anticipated order of march, and security from enemy air activity.

342. When contact with the enemy ground or airborne forces is probable, tactical considerations govern the distribution of troops. Frontages are increased but units remain echeloned in depth with all around security. Trains and units lacking adequate means of self-defense are concealed, dispersed and protected in areas, generally well to the rear, or with troops equipped for defense. Whenever practicable, arrangements for the occupation of the area are based upon detailed reconnaissance.

343. Assembly areas may be announced in the initial march orders or during the course of the movement. In either case, subsequent arrangements are facilitated greatly by having representatives of the major units march near the head of the column. The column commander announces the location of his command post, and indicates to the representatives of the major units their respective areas in sufficient time and detail to prevent congestion and delay in clearing the roads. These representatives, after reconnoitering their respective areas and routes thereto, meet their units and conduct them to their assembly areas.
344. Provision is made for traffic control and security. Roads are promptly cleared. This is expedited, and wear and tear on motor vehicles is reduced by preparing turn-outs at places where motor columns leave the roads. For this purpose, engineers equipped with bulldozers are especially useful.

345. Special precautions are taken to avoid congestion and delay during the passage of obstacles and defiles, or in clearing the road. When tactically appropriate, provision is made for protection against hostile aircraft. The massing of troops, especially in the vicinity of an obstacle or defile, or during a halt, must be avoided.

346. Forcable streams are reconnoitered. Provisions are made in advance to avoid confusion and unnecessary delay at crossings. These provisions include the regaining of distances and the preparation of additional crossings. When a road leads through swamps or quicksand or across a stream with treacherous bottoms, the limits of the road are marked or warnings are placed at dangerous points.

347. An engineer officer in charge of any bridge is responsible for its structural adequacy and the regulation of traffic on the bridge and its approaches. Instructions issued by the engineer officer and the engineer bridge guard, relative to the use of the bridge, are strictly obeyed. March commanders are responsible that vehicles exceeding the maximum load capacity of the bridge are removed from the column for crossing at some other point. In crossing on a pontoon bridge, motor vehicles travel slowly, holding to the center of the bridge and maintaining the distance essential to prevent overload.

348. In the event of a tactical emergency occurring at or near the bridge, troops on the bridge and its approaches are evacuated as directed by the engineer officer in charge.

349. In ferrying operations, foot troops are first brought to concealed and defiladed assembly areas, in the vicinity of the embarkation point. Here they are organized into tactical groupings corresponding to the capacity of the means for ferrying. Engineer equipment needed for the crossing, but not already at the river, is issued to troops at the final assembly area or attack positions, where instructions for embarking and disembarking and for conduct during the crossings are given. At the proper time, each tactical grouping is conducted to the point of embarkation by an engineer guide. Movement from the final assembly area to the river is under the control of the engineer troops.
350. On arrival at the embarkation point, troops enter the boat or raft in the manner directed by the engineer in charge. The engineer in charge is responsible for the arrangements of the loads and for handling of the boats. Individual equipment is loosened so that it may be removed easily.

351. Vehicles to be ferried are held concealed in an area where they will not block the approaches. They are loaded as directed by the engineer officer in charge, and usually are secured by brakes and blocking. Horses may be crossed by swimming. In unloading, the debarkation point is cleared promptly.

Section VII. MOVEMENTS BY RAIL

352. Movement by rail versus road is decided upon after a study of the relative availability of all means of transportation. Facilities in a theater of operations are seldom adequate to permit a free choice. When gasoline, motor vehicle tires, and tracks are critical items, rail will carry all possible movements. When rail facilities are limited tracked vehicles may be moved by rail and all others by road. When a degree of choice exists the following guide may be used to move an infantry division: for distances less than 150 miles, it is generally expedient to use motor transportation (organic or attached); for distances between 150 and 350 miles, to send vehicles over the highway while troops move by rail; and for distances beyond 350 miles, to move both troops and their vehicles by rail. Smaller units may be moved by rail over shorter distances. (See FM's 100-10 and 101-5.)

353. Loading of vehicles on trains is normally a unit responsibility. Each unit will maintain a record of current transportation requirements for its movement as a whole and by separate units, including arrangement of trains and lists of supplies and equipment to accompany the troops under varying conditions. Units must be given timely notification of impending rail movements, in order to permit proper preparation.

354. Orders directing the movement of a unit by rail designate the points at which the entrainment of the unit will take place, indicate the number of trains and the hours of departure, and state the detraining area or destination of the movement, when these are definitely known and considerations of secrecy do not oppose.

355. The commander of the troops is responsible for the preparation of plans and tables regulating entrainment and departure of the elements of his command. Details of the move are worked
out with the transportation officer of the area in which the move originates. A central movement control agency determines the routing. In a theater all contacts with civilian or foreign government railroads will be made through the transportation officer.

356. The order in which elements are forwarded is determined by tactical and administrative factors. The assignment of units to entraining points is determined by availability of suitable loading facilities, matériel to be loaded, and proximity of elements to entraining points.

357. A transportation grouping consists of the troops, equipment, and supplies transported on one train. When tactical considerations govern, tactical unity should be preserved and each element should be accompanied in the same train by its own vehicles and equipment.

358. A senior officer is detailed in charge of each entraining point. He supervises the entrainment, police, and aerialcraft security at the station and is furnished with the necessary guard, transportation, and other assistance.

359. Units are directed to arrive at their designated entraining point early enough to allow entraining in time to insure the scheduled departure but not so early as to result in congestion or delay on routes to or at the entraining point. Premature entraining of personnel should be avoided.

360. The responsibility of the entraining officer ceases, and the responsibility of the train commander begins, when entrainment is completed and the train has been accepted by the railway for movement. The train commander is responsible for the security, discipline, and administration en route but exercises no control over the operation of the train.

361. A representative of the unit being moved and an officer of the transportation service proceed to the detraining area in advance of the troops or arrive on the first train of the troop movement. The representative of the unit determines the distribution of the troops in the detraining area, in accordance with the commander's instructions.

Section VIII. MOVEMENTS BY AIR

362. Air transport may be employed for moving troops, equipment, supplies, or casualties. Air movement is characterized by
speed and flexibility. It is limited by weather and airfield facilities. The transport of bulky or heavy items is restricted by the conformation and payload of available aircraft.

363. The transportation officer of the theater of operations or similar command will establish and maintain contact with the appropriate Air Force commander with regard to air lift and policies and procedures to be followed. Available air lift will be allocated by the transportation officer in accordance with policies established by the theater or similar commander.

364. The commander of troops is responsible for preparation of plans for the movement of the elements of his command. Details of the move are worked out with the appropriate Air Force commander.

365. The prime consideration in loading units is the anticipated tactical employment in the airhead. Commanders must strive to maintain tactical integrity by plane loads if the air-transported force is to be committed relatively soon after arrival at destination. However, if the landing area is secure, tactical integrity may be sacrificed in order to attain the maximum usage of the available aircraft. When preparing for an air movement equipment too heavy or bulky to be air-transportable must be disassembled for movement. Items not readily disassembled will have to be eliminated. All personnel and equipment not required in the objective area should remain in rear. Key personnel and equipment should be distributed throughout the airlift to minimize the effect of losses.

366. Prior to emplaning, troops are instructed in loading and lashing equipment, in safety regulations on airstrips and in flight, and in plan of assembly after landing. Troops are marshalled near the departure airfields and aircraft loading tables and flight manifests are completed. Units are then emplaned according to the loading plan. Ground and air liaison officers are exchanged.

367. In flight, security may be provided for air movements by flying in formation under escort of fighter aviation, by dispersing, or by flying at night or under other conditions of low visibility. Loading and unloading points in areas under friendly control may be protected by fighter aviation and ground forces, including anti-aircraft artillery and antitank weapons.

368. For further details of movement by air, see FM 1–30, “Tactical Doctrine of Troop Carrier Aviation,” FM 31–40, “Supply by Air
CHAPTER 8
THE OFFENSIVE

Section I. GENERAL

THE OBJECTIVE

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

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

b. The threat of its capture should compel the enemy to evacuate his position or risk destruction therein.

c. Its capture should facilitate contemplated future operations.

d. It should produce a convergence of effort.

e. It must be easily identified.

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

378. An objective sometimes may be attained by maneuver alone; ordinarily it must be gained by close combat.

379. Sound tactical maneuver in the offensive is characterized by a concentration of effort in a direction where success will insure the attainment of the objective. This principle necessitates that
only the minimum means essential to deceive the enemy and reduce his ability to resist the main effort will be employed elsewhere on the front. These secondary efforts are justified only by the extent to which they contribute to the success of the main effort.

**DISTRIBUTION OF FORCES**

380. In the offensive, troops are distributed into two or more principal tactical groupings; one or more main attacks in which the greatest possible offensive power is concentrated to bring about a decision, and one or more secondary attacks the mission of which is to render maximum assistance to the main attack. In each tactical grouping, the mass of the available means of combat is applied in a decisive direction.

381. Main attack groupings are designed to secure the objective and to destroy the hostile force. Secondary attack groupings are designed to hold the enemy in position, to force him to commit his reserves prematurely and to an indecisive location, and to prevent him from reinforcing the front of the main attack. This normally will necessitate the delivery of a limited objective attack whose success will contribute to the main effort.

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

383. a. Secondary attacks are usually assigned wider zones of action than is the main attack, with a consequent reduction in both strength and depth of reserves. Such attacks are therefore usually assigned limited objectives. To compensate for this lack of reserves strong fire support is essential. The flexibility of artillery frequently permits it to support a secondary attack against an important limited objective without interference with the subsequent support of the main attack.

b. When the forces available for the secondary attack are limited in strength, strong fire support may be employed to offset such weakness and deceive the enemy. Skillfully located supporting weapons can fire in support of an earlier secondary attack without adversely affecting their support of a subsequent main attack.

384. When it is impracticable to determine initially when or where the main attack is to be made, the commander retains his freedom to act by disposing his forces in great depth, by holding out strong
reserves, and by maintaining centralized control of his supporting weapons. Mobility and correct initial location will permit rapid exploitation of the success of the planned main attack or of favorable developments in the holding attack.

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

386. a. In selecting the direction for the main attack, the terrain must be carefully studied. The choice of the front on which the main attack and the main efforts of subordinate units are made is often determined by the possibilities which the terrain offers for movement, for concealment, for cover, and for effective employment of artillery and armored units. The road net available must also be considered from the viewpoint of logistical support.

b. Selection of the direction of the main attack is influenced also by the time available for movement before the attack must be launched. In situations where speed is essential, mobile units composed largely of armor may be employed. The hostile dispositions must also be considered. For example, armor should not be employed against strongly prepared positions protected by obstacles. At times unfavorable factors may be accepted in selecting the area to be attacked in order to achieve surprise. Effective support by combat and reconnaissance aviation is essential in any major attack.

FORMS OF OFFENSIVE ACTION

387. Attack maneuvers are classified as envelopments and penetrations.

388. a. In an envelopment, the main attack is directed against the flank or rear of the initial disposition of the enemy's main forces and toward an objective in rear of his front lines. It seeks to surround that portion of the enemy's forces both in front of and on the objective. It is assisted usually by a secondary attack directed against the enemy's front.

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

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

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

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

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

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

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

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

b. The defender strengthens an unsupported flank by reserves echeloned in depth and in width. When threatened with envelopments and he does not withdraw, he may be expected to move his reserves to meet the envelopment. If necessary, he reconstitutes reserves from those portions of his front not heavily attacked. He may attempt to envelop the attacking forces, or to extend his flank beyond that of the attack up to the limit of his strength. An attempt on the part of the attacker to maneuver outside (outflank) such hostile extension may lead to overextension or to a dangerous separation of the enveloping forces from those making the secondary attack. It usually is better to take advantage of the enemy’s extension and consequent weakness by retaining a deep formation and to penetrate his thinly held front than to overextend in an effort further to outflank the position. Protection of the flank of an enveloping force is assured by the impetus of the attack, the distribution of troops in depth, and the support of combat aviation. The use of combat aviation to hinder the movement of enemy reserves and supplies in his rear areas can be a decisive factor in the successful execution of an envelopment or a turning maneuver.

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

394. a. In a penetration the main attack passes through some portion of the area occupied by the enemy's main forces and is directed against an objective in his rear. It is characterized by a rupture of the enemy's dispositions; the seizure of objectives by operations through the gap; and the envelopment of one or both flanks created by the break-through.

b. A penetration depends for success on coordinated power. The more important conditions favorable to success are surprise, adequate fire power, especially artillery, to neutralize the area of penetration, favorable terrain within the hostile position for the advance of the attacking troops, and strength to carry the attack through to its objective. An integral part of the plans for the penetration of a defensive position should be the pinning down of hostile reserves by the action of artillery fire and the tactical air force. Air power may be used to extend and deepen, or supplement the fires of artillery in neutralizing the enemy in the area selected for penetration.

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

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

c. The greatest distribution in depth is placed opposite the prospective front of penetration. The distribution of troops provides for three separate impulses: the initial break-through of the hostile position, a widening of the gap thus created by enveloping one or both interior hostile flanks, and the seizure of the objective. Exploitation which follows the seizure of the objective should include the destruction of the hostile forces enveloped and may
also include operations against key objectives deep in the hostile rear.

d. The sequence of these impulses depends on the situation. In some situations it is practicable through the existence of weaknesses or gaps in the enemy’s front for armored cavalry or motorized forces to break through and to proceed straight to the objective, while operations of local envelopment and exploitation are performed by less mobile troops. In other situations foot troops must break through, the more mobile troops being held initially in reserve and used later to operate through the gap created by the foot troops.

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

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

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

FRONTAGES AND DEPTHS

398. The frontage assigned to any unit in an attack varies with the mission, mobility, combat power of the unit; the terrain; available fire support; and the expected hostile resistance.
399. a. Units are distributed in depth to provide flexibility of maneuver, continuity in the attack, and security. For infantry units, depth of formation for combat rather than a wide extension of front is necessary in the initial deployment since the progress of battle will call for maneuvers that cannot be clearly foreseen. This condition can be met only by initial distribution in depth.

b. Depth achieved by a column formation facilitates maneuver by complete tactical units to meet obscure situations. Depth achieved by a formation with subordinate units abreast, with each unit in column, facilitates maximum power to the front as well as reliefs within units with minimum disarrangement of command. Such a formation is suitable for an interior unit in the penetration where the resistance has been definitely located and the possibility of maneuver limited.

400. a. Whether the maneuver adopted is an envelopment or a penetration, success will depend primarily on intelligent, energetic, and coordinated execution.

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

RESERVES

401. a. The primary mission of the reserve is to enter the action offensively at the proper place and moment to clinch the victory or exploit success.

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

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

403. In an envelopment the reserve must be large enough to extend the envelopment or to exploit a successful enveloping action by operating against the hostile rear. To favor the envelopment the reserve is disposed toward the flank enveloped.
404. When open flanks exist or when there is danger of a hostile threat, some reserves are disposed to meet dangerous contingencies. This situation frequently will be met by echelonment of those reserves to provide depth in at least two threatened directions.

405. When the situation is relatively clear and enemy capabilities are limited, the reserve may consist of a small fraction of the command disposed to favor the maneuver. When the situation is obscure, the reserve may consist initially of the bulk of the command, centrally located and prepared to move to any point on the front or flanks.

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

   b. Dispersion in the location of the reserve is dependent upon the time required to concentrate the entire reserve for the implementation of any one of the plans for its employment. A poorly located reserve may suffer heavy casualties before it is engaged.

407 a. Often a commander's most difficult and important decisions are, whether or not to commit the reserve, and choosing the time and place of commitment.

   b. At the decisive moment every man that can be used to advantage must participate in the battle. The reserve must be launched without hesitation. Piecemeal commitment of reserves is avoided. Reserves should be reconstituted from other units which the course of action makes available.

COORDINATION

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

409. The efficient employment of signal communication plays an important role in the effective coordination of the action of all elements of the command. The commander places great reliance upon his signal communication for the transmission and receipt of orders, information upon which to base his decisions and to request supplies and munitions. Movement and fire direction
are largely controlled and coordinated through the signal communication systems.

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

411. Against a strong enemy, a decision to develop and deploy for attack directly from march columns risks loss of control and sacrifices some of the capabilities of artillery, tanks, and other supporting weapons. Even in a moving situation an attack is best organized and coordinated in assembly areas.

412. From a march formation the commander develops the main body for a coordinated attack by assigning march objectives to the larger units, usually the assembly areas they are to occupy, and routes or zones of advance thereto. The development order announces the missions of units already engaged, the missions of the artillery, the dispositions of the main body, the security measures to be taken, and instructions for further reconnaissance. It provides for essential administrative details so that the necessary preparations can be made. Instructions given in the development order are as complete as time permits so as to furnish maximum guidance to subordinate commanders. For movement to assembly areas and security during development, see paragraphs 320 to 325 and 436 to 440 inclusive.

413. a. The location of assembly areas is dependent on several factors. Darkness, cover from observed hostile artillery fire and air attack, a thorough knowledge of the situation, and a plan of attack already decided upon favor advanced positions located in conformity with the plan of maneuver. Conditions the reverse of these require the selection of assembly areas well back. Units of high mobility may complete their development and preparations for battle at greater distances from the hostile front than infantry.

b. If the plan of attack involves an enveloping maneuver, the assembly area of the enveloping force is separated by a sufficient interval from the troops in the secondary attack to preclude interference between units when deployed for attack.

414. Subordinate commanders assigned assembly areas may in turn assign more advanced assembly areas to the component units of their commands as knowledge of the situation and of
plans becomes available. The final assembly area of an infantry or armored cavalry battalion or similar unit in the attack echelon usually is the most forward concealed position available in rear of the line of departure. It is termed the attack position. Its location is usually designated by higher commanders but where necessary may be selected by the commander concerned. It should afford cover from hostile small arms fire.

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

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

416. a. As a unit arrives at its assembly area, march columns clear roads and take immediate measures for security against air, armored or other attack. Signal communication is established without delay between the superior command post and those of the major subordinate units.

b. In the assembly area, equipment not essential to combat is turned over to the custody of the unit’s service echelon. Extra ammunition is issued to troops. The assembly area in which these measures are taken is determined by cover, concealment, situation, time and comfort, and effectiveness of troops. Reconnaissance, coordination of the maneuver and fire plans of subordinate units and attack orders must be completed and issued before forward movement from the attack position begins.

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

418. a. Should the commander decide that rapidity of action is essential to retain a tactical advantage, he may dispense with assembly areas, decentralize operations to combat commands, combat teams or task forces, and issue orders to those units to develop and attack.

b. Situations which justify decentralized control of this type are—an obscure tactical situation; necessity for rapidity of action over excessive distances; or operations over such extensive areas that centralized control is impracticable due to difficulties of signal communication.
c. Detailed advance planning combined with modern signal communication reduces the necessity for such decentralized control to very special situations. Every effort should be made to retain the advantage of improved coordination of effort inherent in centralized control. (See par. 433.)

419. a. Subordinate units ordinarily are assigned a zone of action, a line of departure, and an objective. In some situations a direction of attack and an objective, or an objective alone will suffice. When a commander desires that a subordinate unit direct its main effort in a specific direction within its zone of action he should so indicate by assigning a direction of attack as well as a zone of action to the unit.

b. Where such boundaries are desirable, zones of action are defined by designating their lateral boundaries, or by the assignment of a front of deployment, and the designation of the lateral limits of the objective. In large units the designation of objectives and boundaries may be made from the map; in small units these designations are made on the ground. Points designated should be easily identifiable on the ground.

c. When tactical groupings are separated initially by wide intervals, designation of a boundary between them may be withheld until a later phase of the action. In such situations, it frequently will be necessary to establish a limiting line between them for coordination and control of their supporting fires.

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

b. To take advantage of favorable routes of approach, units may move temporarily into adjacent zones, after coordination with commanders concerned. Such movement must not interfere with the action of adjacent units or result in a dangerous massing of troops. Arrangements should insure that congestion and confusion are minimized. The emplacement and movement of artillery and other supporting weapons in zones of action adjacent to the zone of the units they support are permissible, but must
be carefully coordinated with the commanders of the affected zones of action.

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

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

422. A line of departure is a designated line which troops starting an attack cross at a prescribed hour. Based on the scheme of maneuver, it may be necessary or desirable to assign separate lines of departure and different hours to the several attacking units. The purpose of the line of departure is to coordinate the advance of the attack echelon so that its elements will strike the enemy in the order and at the time desired. It also facilitates coordination of fires. This line should be recognized easily on the ground and should be approximately perpendicular to the direction of attack. It should be controlled by friendly forces. As permitted by these criteria, the line of departure should be as close to the enemy positions as possible.

423. a. The time of attack is the hour at which the attack is to be launched. If a line of departure is prescribed, it is the hour at which the line is to be crossed by the leading elements of the attack. It is determined by the time required for commanders to make the necessary reconnaissance, prepare plans, and issue orders; for all units to coordinate their plans; and for the attack echelon to organize its attack and move to the line of departure.

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

c. Unity of effort is promoted by assigning subordinate units objectives which insure mutual support and by prescribing where and in what direction subordinate units are to make their main effort. The combat action and direction of attack taken by subordinate commanders must be such as to contribute to the main effort in accordance with the scheme of maneuver of the superior commander. The commander must endeavor constantly to prevent the attack from breaking up into a series of uncoordinated battles. Phase lines as described in chapter 7 may be used to aid in the control of the attack.
424. The degree of surprise attained is dependent in a large measure on the coordination and timing of the attack and the measures taken to deceive the enemy. Ruses, demonstrations, feints, and other measures for deception executed at the wrong time and place will be obvious to an alert enemy and will warn him of the impending attack. Superior mobility and the speed and aggressiveness of execution may be determining factors in achieving surprise.

425. The best guarantee for success in the attack is effective cooperation among the troops in the attack echelon, the supporting artillery, and combat aviation. The commander coordinates the fire support of all available supporting weapons with the plan of maneuver of the attacking troops.

426. Within the division, cooperation is facilitated by habitually associating a direct support artillery unit with the same infantry regiment or other supported unit. To insure close cooperation with the attacking troops, artillery units assigned to direct support of designated units maintain constant signal communication and liaison with the supported unit.

427. It is desirable to locate the command post of the corps artillery, division artillery, or artillery commander of a smaller force of combined arms in close proximity to the command post of the corps, division, or force concerned. The location of the artillery command post is based on the control of its subordinate units and therefore may have to be separate. If separation of the command posts becomes necessary during the course of action, the artillery commander will continue to furnish liaison to the supported unit or to the division, corps or force command post. Direct support artillery units will establish and maintain signal communications with the supported unit, while the division, corps or force normally will establish and maintain signal communication to the command post of its artillery.

428. a. The commander of the supported unit informs the supporting artillery commander of the situation, his plan of attack, and the artillery support desired. The supporting artillery commander informs the supported commander of the terrain which the artillery commands with observation and fire and the means by which the artillery can most effectively support the attack. Based on this exchange of information, the interested commanders arrange the plan of fire support to be provided for the attack.

b. The artillery commander must comply with the requests of
the supported unit commander to the limit of his capabilities, subject only to orders received from higher authority. If he receives a fire mission which conflicts with the needs of the supported troops, he reports the situation to higher authority, then complies with the resulting decision, reporting the facts to the commander desiring the mission. If the urgency of the situation precludes these reports, the artillery commander acts on his own initiative in accordance with his knowledge of the situation, reporting his action to his superior at the first opportunity.

c. A direct support artillery unit establishes liaison with each supported infantry or armored cavalry battalion or other supported unit. A mutual obligation rests upon the commanders of supported and supporting units that liaison is established and maintained. It is essential that the supporting artillery know at all times the location of the leading elements of the attack echelon and be kept informed of the plans of the supported unit.

429. a. A single artillery staff working under the force commander facilitates the integration into a single coordinated fire plan of all the fires available to support a force of combined arms. Such a plan is based primarily upon the fire plans of subordinate units. The fire plan integrates not only the fires of direct support artillery but also provides for the utilization of those of reinforcing artillery including that of higher echelons and all other fire support. The final plan should be designed to furnish the maximum fire support to the maneuver plan supported.

b. In general, the shorter-range weapons and the direct support artillery will engage the targets in the immediate foreground best suited to the characteristics of the weapons involved. Other weapons are used as the situation requires - the zone taken under fire or to supplement the fires upon targets most dangerous to the forces.

430. Early and adequate joint planning is necessary in order to obtain close coordination of the ground force elements and combat aviation which are employed in the attack. Suitable objectives for this combat aviation are those hostile elements, whose destruction or neutralization will contribute most toward a successful attack. During battle, combat aviation is especially useful to exploit a success, to correct an adverse ground situation, to attack hostile reserves or reinforcements, or to aid friendly ground troops in overcoming unexpected resistance. Combat aviation also may be employed to provide column cover particularly in pursuit and exploitation or for exposed movements.
431. a. Employment of Army, Navy, and Air Force in joint operations is facilitated by joint planning and training of all units, initiated well in advance in order to provide time for the coordination necessary due to differences in equipment and procedures.

b. To secure efficient coordination of available supporting fires of Army, Navy, and Air Force during a joint operation, a fire support coordination center is established in the artillery headquarters at each echelon of command from battalion to army. Here the representatives of the supporting components confer on the best means to be employed in attacking targets confronting the supported units. The artillery commander is responsible for the coordination of all fire support, including artillery, naval gunfire, and air strikes when command has passed to Army units ashore.

432. Because of the difficulty of establishing and maintaining effective chemical concentrations in mobile operations, use by the attacker of chemical agents other than smoke is limited. Smoke must be employed carefully in respect to both time and space, and must be coordinated closely with other supporting fires and with the action of armor and supporting air. Under favorable conditions of wind and weather, smoke is used to conceal the approach of the attack by blinding hostile observation posts, antitank guns, and infantry supporting weapons. It is especially useful during short periods when troops must cross exposed ground. Chemical agents can be used to neutralize areas the attackers will not move into, to protect flanks, and for counterbattery.

433. a. When conditions limit the ability of the commander to exercise a timely and direct influence on the action, the initiative of subordinates must be relied upon to a great extent. The commander issues less detailed orders to those tactical groupings over whose action he cannot exercise a direct influence, and attaches to them the means necessary to accomplish their tasks. He interests himself primarily in the action of the troops whose mission is of decisive importance to the action.

b. This method of conducting an operation is most prevalent in pursuits, in opening phases of a meeting engagement, during crises of battle, and in envelopments and turning movements in which the main and secondary attacks are separated by wide intervals. The greatest degree of coordination possible is prescribed initially; complete coordination is accomplished as soon as the course of action permits.
434. a. Based upon the commander's decision and plan the attack order is issued. This order includes the necessary measures for the coordination of the attack.

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

Section II. WAR OF MOVEMENT

435. A war of movement is an operational phase offering great freedom of maneuver. Freedom of maneuver frequently characterizes the initiation of hostilities, the opening of a new campaign or a theater, and the exploitation of a successful major attack. During these periods a meeting engagement may result from a collision between two forces neither of which is fully deployed for battle. Utilization of the period of movement to contact, initial contact and subsequent deployment is of vital importance as commanders maneuver their forces to gain a maximum advantage of position before the situation stabilizes.

436. a. During the advance to contact every agency of intelligence, reconnaissance and security is utilized to insure that the main forces are engaged under the most favorable conditions.

b. Reconnaissance aviation is employed to locate and maintain observation of enemy forces. Covering forces, strong in armored cavalry elements, precede and screen the main body whenever the situation permits. This covering force, operating under the direct control of the force commander, in turn precedes its advance by mobile reconnaissance detachments charged with gaining and maintaining contact with the enemy. Reconnaissance and organic aviation operate in close contact with the covering force, furnishing it with the latest information.

c. Behind the covering force the main forces advance on a broad front. Each column precedes its advance with its advance guard, which in turn sends out the necessary mobile reconnaissance elements to the front and flanks. These reconnaissance elements also maintain contact with the covering force. When the main force is not preceded by a general covering force its advance guards normally will be stronger in armored cavalry reconnaissance elements to permit more extended reconnaissance.

437. a. When opposing forces are separated by great distances the covering force normally will advance by bounds. Depending on its mission and the situation it may attack and destroy small parties of the enemy, seize objectives important to the main force
or contain larger enemy units. Airborne or air transported units may be employed in conjunction with the covering force to seize critical terrain features or make early contact with the enemy to restrict his advance. As resistance is developed by the reconnaissance screen, mobile elements of the covering force may be dispatched to strengthen critical localities.

b. Information gained through these initial measures permit the commander to clarify the situation gradually as the main forces approach. Against an aggressive enemy measures must be taken to avoid the defeat of the covering forces before the main force can intervene. Accurate information is essential to prevent the flanks of the covering forces being turned with the result that the main body is taken in flank.

438. a. As contact becomes imminent each advance guard moves forward on a broad front. Based upon the situation developed by the covering force, the advance guard is engaged in accordance with the plan of the commander to extend the action of the covering force, or to seize ground essential to the development of its main body.

b. When a strong covering force has not preceded the advance guard, the advance guard should seize terrain affording the essential observation. Its principal function under these conditions is to take aggressive action to gain the time and space for the development and employment of the main body. The column commanders usually will have had opportunity to communicate to the advance guard commanders their plans for the engagement of the advance guard. At times, when advance information has been lacking, it may be necessary for an advance guard commander to act upon the basis of his general mission.

c. Advance guard actions are characterized by speed and aggressiveness, by broad fronts, and by small or no reserves. The advance guard is reinforced by the attachment of artillery, engineers and armor. Artillery opens long-range fire on enemy columns to force their early deployment, and to interdict the principal routes of approach.

d. These measures, whether taken by the covering force, the advance guard or both, tend to develop the enemy position. The hostile dispositions, particularly the location of his flanks, are important to provide the essential information upon which the commander can base his attack plan. When the security forces lack the strength to develop the situation fully, they may have to be reinforced by elements of the main force to obtain adequate
knowledge of hostile dispositions before the coordinated attack is launched.

439. After the reconnaissance units of the covering force and advance guard are withdrawn they may be employed on the flanks to screen our own dispositions or to execute further reconnaissance or harassing action against the hostile flanks and rear. When suitable reconnaissance missions are lacking, reconnaissance units may be held in reserve or used to protect rear areas from airborne or partisan action.

440. When the covering force encounters strong resistance and the initiative rests with the friendly troops, every effort is made to prevent the enemy from stabilizing the situation. The main body is brought forward by the most expeditious means in one or more columns, protected by its advance guards. Based upon the information obtained the force is engaged rapidly and aggressively to attack the enemy before all hostile units are available for action. In such cases exploitation of intelligence, mobility and terrain may permit attacks upon the enemy flanks and rear before he is prepared to counter these envelopments.

441. a. In accordance with his estimate of the situation, the commander develops the main body and organizes a coordinated attack or strikes directly from march column while organizing a more coordinated blow with the remainder of his force. He may attack when necessary with his whole force from march columns as units become available. Such an uncoordinated piecemeal commitment is to be avoided except when rapidity of action is essential and combat superiority at the vital point can be maintained for the time required to assure success.

b. While the main body is deploying for its attack, units in contact continue to develop the enemy position. Their mission is to determine the strength and dispositions of the enemy and the location of his flanks to provide a picture for a workable attack plan.

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

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

b. Whether an offensive battle is the result of a meeting engagement or is based on the attack of an organized position, the conduct of the attack from the time the enemy is engaged until he is defeated is essentially the same. What difference there is exists in the coordination, power, and speed developed in the opening phases.

Section III. ATTACK OF AN ORGANIZED POSITION

PRELIMINARY OPERATIONS

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

445. a. If reconnaissance and advance detachments fail to establish definitely the hostile main position, a reconnaissance in force may be made. An attack is launched against critical points in the enemy's outpost zone to drive in the enemy's covering forces and seize terrain which will permit the proper deployment of the command and afford adequate observation of the hostile battle position.

b. When the leading troops encounter a well organized system of defensive fires of hostile artillery and other supporting weapons, it may be taken as a reliable indication that the hostile battle position has been reached. The leading troops establish themselves on advantageous terrain features and cover the preparation for the attack.
446. During these preliminary operations, ground reconnaissance troops seek to locate the flanks of the hostile position. The leading elements are protected from hostile counterattack by strong supporting fires and by the presence of other units moved to concealed positions within supporting distance. The remainder of the command is held in readiness beyond the range of effective hostile artillery fire. Necessary measures are taken to protect it against air attack and attack by armored units.

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

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

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

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

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

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

PREPARATIONS FOR ATTACK

449. a. Preparations for the attack include the completion of the signal communication system, organization of the command for combat, provision for ammunition, rations and other supplies, and the control and coordination of supporting fires of all arms. During this period, combat aviation is employed to gain and main-
tain air superiority and to prevent the movement of reserves and supplies into the area.

b. Preparations for the attack also include measures for the extension of signal communication during the attack, resupply at intermediate objectives or at selected times, relief and regroupment of units at specified times or places, and evacuation of prisoners of war, sick, wounded and dead.

c. All preparations for the attack are completed as far as practicable before the occupation of attack positions. Preparatory measures likely to betray the imminence of the attack are carried out secretly or are deferred as long as possible. Restrictions are imposed on those activities within our front lines and in rear areas which may disclose preparations for the attack to hostile reconnaissance. Strict surveillance is imposed on the use of radio communication.

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

450. a. The plan of attack consists of the plan of maneuver and plan of fire including the support of combat aviation. The commanders of the attack unit, the artillery, combat aviation, and other supporting units make detailed arrangements for coordinating the action of their units to carry out the common mission. Fire plans of artillery and other supporting weapons for the defense of each successive objective are prepared before the start of the attack in order that the reorganization of the attacking troops, after seizing the objective, may proceed with benefit of maximum prepared fire support.

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

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

451. a. Attack unit commanders must receive early information of their assembly areas and zones of action, in order that they may make their own reconnaissance and formulate plans.

b. Attack units usually move at night into assembly areas, preparatory to an attack the next morning. Movement of units into their assembly areas by day generally is practicable only when visibility is poor or when overwhelming artillery and combat aviation are available. With favorable wind conditions smoke screens may be employed to cover daylight movement of units into their assembly areas. When smoke is used it should cover a large area with a haze to prevent drawing hostile artillery fire.

c. When armored elements are employed their assembly areas and routes of approach are reconnoitered, marked, and prepared. Tanks are moved into assembly areas and from assembly areas to the attack at the latest practicable time, in order to conceal intentions and to postpone the unmistakable warning given by the noise of tanks in motion.

452. The first mission of the artillery is to cover the assembly areas and the movement into them by attack units. During this phase, hostile artillery and observation posts constitute its principal targets. The artillery gives special consideration to those measures which will attain surprise and gain fire superiority over the hostile artillery.

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

b. Artillery usually moves into position by echelon. The movement is frequently executed at night. Units assigned to positions screened from hostile air reconnaissance are moved first. The movement of artillery is regulated to avoid interfering with the attack echelon in its occupation of the areas where final attack preparations are made. Long-range artillery is placed well forward to be able to take under fire the most distant echelons of the defender's light and medium artillery.
454. a. During the advance of the attack echelon from assembly areas to attack positions, the hostile artillery constitutes the principal target of our artillery fire. Superiority over the hostile artillery is indispensable for the success of the attack.

b. Located hostile batteries must be neutralized or destroyed early in the artillery action. Their neutralization is maintained by a portion of the artillery in order that the mass may be employed on other missions, until again required for counterbattery fire as new hostile batteries are located. Neutralization of the hostile observation is of great importance in attaining superiority in artillery.

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

b. The force commander decides whether a preparation is to be fired. He considers whether a sufficient number of remunerative targets will be located in time to prepare the fires, the probable effect of the preparation, the attendant loss of surprise, and the effect on the ammunition supply.

c. The force commander also decides the duration of the preparation. In general, a preparation should be long enough to accomplish the effect sought, but not so long as to permit the enemy to change his major tactical dispositions in time to meet the attack. The duration of the preparation may be governed by the ammunition supply. It may vary from a few minutes to several hours.

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

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

c. In the subsequent phase of the preparation, sufficient artillery continues counterbattery fire to maintain neutralization of the
hostile artillery. The fire of the mass of the remaining artillery is concentrated on the hostile defense areas. Hostile observation should be covered with smoke to prevent observation of the movements of the attacker and render adjustment of hostile artillery fires difficult. If the terrain does not afford good cover for attacking troops, smoke may be placed upon the forward elements of the defensive position to prevent the enemy from using aimed small arms fire.

457. During the entire preparation, supporting weapons fire on sensitive points in the zone of resistance. Massed air action on the immediate front selected for the main attack may be used to soften resistance. Combat aviation is concentrated against signal communication centers and reserves, with particular attention to artillery and armored units which cannot be covered effectively by artillery. Whenever the situation permits, friendly air strikes in close support should be supported by ground fire on enemy antiaircraft weapons.

CONDUCT OF THE ATTACK

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

459. The attacking echelon advances from its attack positions so as to cross the line of departure at the prescribed time. Any mass formation of units runs grave risks of incurring heavy losses from hostile fires and air attack. When fire superiority has been gained, the attacking echelon closes to assaulting distance.

460. a. Superiority of fire rests chiefly upon the support of artillery, combat aviation, and other supporting armored or infantry elements, in conjunction with the mutual support of adjacent elements of the attacking echelon. It depends not only on volume of fire but also on its direction and accuracy and the close coordination of all fires with the movement of the attack echelon.

b. Fire effect is increased by enfilade action. Flanking or oblique fire is especially effective when frontal fire is delivered simultaneously against the same objective. A convergent fire forces the enemy to defend himself against attack from several directions and creates a powerful morale as well as material effect.

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

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

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

462. Airborne troops may be employed to seize and hold or destroy objectives which are important to the success of the main attack. These troops may be reinforced by air transported troops.

463. Artillery and other supporting weapons insure continuity of support by displacing forward by echelon, while the bulk remains in position and maintains fire. Fire is lifted successively to more distant targets as the attacking echelon becomes endangered by it. When supporting fires are lifted from the hostile position to permit the attacking echelon to close with the enemy, the loss of this support must be compensated for by the increased fire of the lighter weapons and tank action.

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

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

465. Artillery must employ all means at its disposal (observers, liaison sections, airplanes, radar, wire and radio communication) to obtain exact information on the location of the hostile defensive position and location of the forward elements of the attack. The attacking units must cooperate by employing all means of transmitting information to the artillery. When uncertain as to the location of the attack echelon, direct support artillery takes immediate steps to establish close contact with those elements.

465. a. The primary purpose of close supporting fire is to prevent the enemy from manning his defensive works in time to meet the assault, and to neutralize or destroy those targets which impede the progress of the supported troops. Its progression to successive objectives is arranged between supporting and supported commanders.

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

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

468. It is desirable that combat aviation support the attack through the depth of the hostile position by concentrated attacks on that part of the front where the attack seeks decisive results.

469. The attacker must not permit the advance to be long arrested by hostile chemical concentrations, or areas containing mines. Contaminated terrain which cannot be avoided is posted and passed with the assistance of gas masks and protective clothing. Mined areas may be posted and bypassed, or breached, by supporting engineers or by organic mine clearing teams.

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

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

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

473. Every means of signal communication including reconnais-
sance aviation must continue to inform commanders concerning
developments farther in rear of the battle front, such as shifting
of hostile reserves, arrival of reinforcements, and any indication
of any enemy withdrawal. From these reports and other informa-
tion, commanders direct the movements of reserves toward those
portions of the hostile front that offer the greatest prospects for
decisive success. Combat aviation and artillery may be effectively
employed to attack enemy reserves and counterattacking forces.

474. In an attack of a stabilized front, the approach has already
been effected and the attack opens with a coordinated assault.
The hour of the assault is fixed by the commander of the whole
front from which the assault is to be launched. The exact day
and hour are kept secret until the latest practicable moment. Sub-
ordinate commanders must be afforded sufficient time for recon-
naissance and briefing of units.

475. On a stabilized front, more detailed information of the
enemy’s defensive dispositions usually is available. The com-
pleteness of information will depend upon the length of time the
front has been stabilized and the efficiency of intelligence meas-
naissance, conducted in such manner that the appearance of normal activity is maintained. Information is disseminated in the form of intelligence summaries, maps, and annotated air photos.

THE ASSAULT

476. a. Against a strong resistance and well-organized defense, the commander will prepare the assault by concentrating the firepower of all supporting weapons to neutralize the enemy and wear down his power of resistance before launching the assault. The commander of the unit will notify the supporting weapons, by a prearranged signal, or other means, that he is about to assault. The intensity of supporting fires is increased. Under cover of the supporting fire, the assault unit advances close to its objective. When the supporting fires are lifted from the objective, the assault unit overruns the hostile resistance.

b. Any delay in launching the assault after the fires lift allows the enemy to man his defenses. A series of brief lifts and resumptions of fire prior to the final lift preceding the assault will tend to discourage prompt manning of the defenses. In favorable situations tanks operating under artillery air bursts may be employed in advance of infantry.

CONTINUATION OF THE ATTACK

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

b. Reserves usually are disposed in positions from which they may best be employed to exploit a success or to protect the flanks of the attacking units. All reconnaissance agencies search for probable assembly areas of hostile reserves, so that enemy preparation for the counterattack may be broken up by artillery fire and air attack. As the attack progresses each intermediate objective is promptly organized for defense and held until the attack is continued.

478. a. Road conditions, the possibility of maintaining ammunition supply, and the enemy’s reaction following our successful
assault determine when and in what strength the artillery will be moved into advanced positions. Artillery executes its missions with the fewest possible changes of position. Frequent changes of position reduce the volume of fire support. The occupation of new positions and renewal of fire require considerable time. Nevertheless, change of position should be made unhesitatingly when fire effect or deficiency in liaison with the attacking echelon requires it. Changes of position generally are affected by echelon after timely reconnaissance of advanced positions.

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

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

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

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

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

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

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

483. When the attack does not reach its objective or does not break through the hostile position during the day, the leading elements of the infantry intrench at the points reached. If possible, reserve units pass through these leading elements to continue the offensive by night attack. By attacking in depth, a commander can maintain continuous pressure day and night, and thereby can keep the enemy off balance. At the same time, the enemy's fatigue is greatly increased with resultant decrease of his effectiveness. When a night attack is impossible, the night is utilized to reorganize and resupply. Units also may be relieved to facilitate continuation of the attack the following day.

RELIEF OF COMMITTED UNITS

484. In offensive combat it may be necessary to relieve units in contact with the enemy by executing a relief in place or a passage of lines. Either of these operations may be desirable in order to continue the momentum of the attack with fresh troops, to change the direction of the attack, to exploit a weakness in the enemy position with reserve forces, or to initiate an offensive on a front where stabilization has existed.

485. When a relief in place or a passage of lines is to be made, warning orders are issued by the commanders of the higher unit, the relieving or unit passing through, and the unit to be relieved. Warning orders include—the approximate hour the movement for the relief or passage of lines is to begin; the zones in which relieving or passing units are to operate; and the restrictions imposed upon reconnaissance parties as to size, routes, and hours of operation.

486. Personal reconnaissance by the commander and staff of the relieving or passing unit, and prior conferences with the commander and staff of the relieved unit are highly important.
487. A plan is formulated and orders are issued covering the movement of relieving or passing units. Fundamentally, either operation is the same as the development of a command for combat. In the preparation of the plan, restrictions imposed by higher authority because of other traffic in the zone of advance, the greater road spaces that may be required because of increased distances between units, the road net, and the practicability of cross-country movement must be considered. The plan must be flexible as to times and routes of movement. The size of the unit involved and the speed with which the relief or passage must be conducted will govern the thoroughness with which the details of the plan are prepared.

488. In accordance with the plan of the higher commander, commanders and staffs of both the relieving or passing units and relieved units arrange and agree upon such details as guides, use of roads, fire support to be furnished for the incoming troops by the unit to be relieved or passed through, transfer of the existing signal communication system, administrative matters, and the condition under which command passes to the relieving or passing unit.

489. Units to be relieved or passed through furnish guides. Individuals selected as guides should be capable and carefully rehearsed in their duties. They meet the relieving or passing unit before it enters the area and conduct it to assembly areas. Whenever possible, guides are furnished for units down to and including the platoon.

490. To disclose the fact that a relief in place or passage of lines is in progress invites heavy bombardment by air and artillery, a counterattack, or both, at a time when congestion and traffic circulation are doubled. Woods, fog, and defilade are utilized in the approach when the relief or passage is made in daylight. Smoke is placed on hostile observation posts and hostile forward elements. Mobility, ruses, feints, and demonstrations are exploited.

491. For reliefs in place on a scale large enough to require more than a single night, troops and transport of the relieving unit are concealed during periods of good visibility. The relief is carried out by echelon from rear to front, front-line units being the last elements relieved.

492. a. The plans for executing a relief in place must be in harmony with the plans for continuing the attack. It may be desir-
able that the positions of the relieved unit be occupied by a portion
of the relieving unit in order to make the remainder of the
relieving unit available to organize for the continuance of the
attack. To relieve in place and attack with the same troops may
take the relieving troops out of the desired attack formation.

b. The time of execution of a relief depends on such factors as
characteristics of the enemy, weather, terrain, and air superiority.
Front-line troops should be relieved in small groups and infiltrated
to the rear. When the relief is executed in darkness, troops re-
lieved are withdrawn promptly from the zone of action. Artillery
of the relieved unit, and frequently other supporting weapons
should be held in position to support the attack when resumed.

493. During the course of the relief in place, artillery maintains
its normal fires, but is prepared to execute counterbattery and
protective fires along the front of the relief in the event of an
attack by the enemy. During a night relief, artillery fires may
be so timed as to conceal noise of vehicles moving into position.

494. The execution of the relief in place is under the direction of
the commander of the unit being relieved. He remains responsible
for the defense of the sector until the relief has been completed.
The actual passage of command takes place upon agreement be-
tween the commanders concerned with approval of higher head-
quarters.

495. The principal task involved in a passage of lines is in the
preparation for continuing the attack. Where both units in-
volved are infantry, the incoming commander will normally as-
sume command of the zone of action before his troops reach
their attack positions. Normally the time interval between the
commencement of a passage of lines and the initiation of the
attack is brief and allows little time for any readjustment of his
troops by the relieving commander prior to the attack. The time
factor plus the necessity for strict fire control makes the passage
of command desirable at an early stage in the operation.

496. When executing a passage of lines at night, and the exact
location of forward elements to be passed through is known, the
line of departure for the attack is the line held by the forward
elements. When the exact location of the most advanced elements
of the unit to be passed through is unknown, the line of departu-
re must not be forward of the line held by the most advanced ele-
ments whose location is known. In daylight, terrain permitting,
a line of departure between the forward elements to be passed
through and a covered position close in their rear may be better than a line coinciding with the front-line element.

497. Lightly held positions and gaps in the front lines of the unit which is passed through should be utilized by the passing unit to the greatest extent consistent with its scheme of maneuver. This is particularly true when armored elements execute the passage of lines.

498. a. The passage of a major armored unit through an infantry element frequently will occur after a break-through of an organized position by the infantry. In any case a passage of lines by armor through infantry involves certain differences inherent in the characteristics of armor.

b. Normally a passage of command in the zone involved is unnecessary in view of the different missions of the units. Close coordination is essential between the commanders concerned. Liaison officers may be exchanged between the armored and infantry units.

c. In view of the length of the armored columns, every measure must be taken to expedite the passage. Detailed coordination between the participating units must be arranged. This includes the coordination of fires. Priority on roads must be assigned to the armor without crippling the traffic essential to the support of other units. The infantry units holding the sector may have to readjust their positions to facilitate the passage. Usually, because of the difficulty of operating armor at night, the operation is executed in daylight on a relatively narrow front.

499. Regardless of whether a passage of lines is executed in daylight or darkness, the units in contact and the artillery passed through remain in position and furnish all possible fire to support the attacking unit. When the attack has progressed far enough to prevent undue casualties to the relieved troops, they are assembled and reorganized.

Section IV. ATTACK FROM THE DEFENSIVE

PLANNED DEFENSIVE-OFFENSIVE

500. a. A commander with an offensive mission may decide to assume the defensive initially because of temporary combat inferiority or to create a situation which will place the enemy at a tactical disadvantage and offer opportunity for a decisive counteroffensive. In either case, an early resumption of the offensive to
attain the objective is contemplated. By inducing the enemy to
attack first, the commander hopes to fix and exhaust him and
then, when he is disorganized, to launch the counteroffensive.
(See ch. 9).

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

501. Organization of the ground may not be as complete as is re­
quired for a protracted defense. Larger reserves also may be
maintained, concealed in a position favoring the execution of the
contemplated counteroffensive.

502. Once the purpose of the initial defense has been accom­
plished, the counteroffensive is launched. Thereafter, the conduct
of the action is that of the attack.

503. a. A defending force frequently has an opportunity to adopt
the offensive. When a general counterattack launched by the de­
fender throws the attacker back following an apparently successful
advance, or when a hostile attack breaks down, the enemy seldom
will be able to withstand a determined counteroffensive.

b. The enemy artillery fire still may be superior but his attack­
ing echelon will be disorganized. If the defender seizes the
initiative and passes to an offensive before the attacker can recover
from his disorganization and can properly dispose and employ
his reserves, results often are decisive. The defense must be
prepared to pass to the offensive and exploit the result of suc­
cessful defensive action.

504. The general doctrines governing the preparation for and con­
duct of an attack are applicable to the counteroffensive.

Section V. PURSUIT

505. The pursuit is launched when the enemy is no longer able to
maintain his position and endeavors to escape. A commander rec­
ognizes a weakening enemy by the continued advance of his troops
in a decisive direction; the capture of critical objectives; by the
number and morale of captured prisoners; by the number of
abandoned weapons; by the number of hostile dead; by the
 diminution of hostile artillery fire; and by the diminution or cess­
tion of hostile countermeasures.

506. When a commander recognizes that the enemy is having dif­
ficulty in maintaining his position, he utilizes all means to maintain
the continuity of the attack and to exert a relentless pressure on the defeated enemy.

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

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

b. Armored forces are particularly suited for this purpose. At times the objectives assigned such armored forces may be other than the pursuit of the beaten force. Such objectives can only be assigned when the attacker's margin of superiority warrants the early assignment of an exploitation mission other than the destruction of the hostile force.

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

509. In anticipation of launching a pursuit, the commander causes preparatory measures to be taken. These measures include necessary plans and orders in all echelons. Reserves are regrouped and motorized. Artillery and engineers and other necessary units are attached to the direct pressure forces for the pursuit. Engineer combat units are placed well forward in columns of direct pressure forces to facilitate rapid stream crossing. Distant objectives are assigned to the principal tactical groupings. Missions are assigned to the field artillery in general support to obstruct movement on hostile avenues of withdrawal. Combat aviation is employed against those targets of opportunity and other objectives which will contribute most to the success of the pursuit.
510. The pursuit is conducted on a broad front. Motor transportation, including transportation captured from the enemy or abandoned by him, is employed to expedite the movement of foot troops. Troops before whom the enemy is giving way send in their reserves to gain his flank and rear or to break through his covering troops.

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

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

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

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

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

514. a. The employment of artillery is based upon the maximum exploitation of the mobility of lighter pieces and the long range
of the heavier types. So long as the withdrawing enemy can be engaged with observed and planned fire, a portion of the artillery remains in position to fire on the more distant targets.

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

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

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

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

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

b. When the enemy succeeds in establishing himself in a position from which he cannot be passed or dislodged quickly, the commander takes prompt measures to coordinate the attack again, supporting it with all available means.

517. Pursuit requires extensive reliance upon radio for communication with the leading troops. The construction of wire lines is concentrated along the more important axes. Command posts or advance message centers are established close behind the leading troops. Light aircraft are a valuable means of observation, communication, and liaison.

518. Adequate provision for the supply of ammunition and motor fuel to the pursuing troops is essential to the success of the pursuit. Every opportunity must be seized to augment supplies of all
kinds from captured or abandoned stocks. The commander endeavors to relieve the pursuing columns of all worries concerning supply and evacuation. All available transport, inclu- ding air, should be utilized to assist in supply and evacuation.

Section VI. SECURITY IN THE OFFENSIVE

519. Success or failure of an offensive is dependent in a large measure upon the action taken to protect the command from hostile reaction. Open flanks are highly vulnerable. The best security is to keep the enemy so heavily involved that he has not time or means available to endanger the success of the attack. Security of attack forces is assured by a timely search for information in all directions from which a hostile threat may come, by the proper disposition of security forces of ample mobility and combat power, and by prompt dispatch of accurate information and orders to security forces. This is particularly true in security against hostile forces of great mobility such as air, motorized, and armored units.

520. In offensive operations, the mass of available means for defense against air and armored attack is disposed to favor the main attack. The combat means for defense against air attack are supplemented by utilization to the maximum of cover, concealment, camouflage, defilade, dispersion, and night movements. The combat means for defense against attack by armored forces are supplemented by utilization of natural and artificial obstacles to protect the flanks and rear of the command, by dispersion, and by night movements.

521. Antitank weapons in each echelon of troops are disposed to cover the most likely avenues of approach of hostile armored units. Protection against an armored attack is best assured by armored reserves and by obstacles located on likely avenues of approach. These obstacles must be strengthened by demolitions and mines and protected by mobile antitank weapons supported by every available and effective means of fire support, particularly that of artillery. Such action isolates and destroys the hostile armored forces.

522. In offensive operations, the greatest need for security exists during critical phases of the battle. Security is enhanced by meeting possible threats with heavy fire before they can develop. The action of combat aviation against threats is particularly effective, especially if hostile troops or vehicles are in close formation.
523. As in earlier stages of the advance, reconnaissance missions by combat aviation constitute an important security measure. Armed reconnaissance missions both distant and close are charged with obtaining information of vital security importance. Missions flown just prior to darkness or immediately after daylight are frequently advisable. Where observation of specific areas can be indicated, night missions are justified and at times mandatory. (See ch. 6.)

Section VII. TERMINATION OF THE OFFENSE

524. a. An offensive action once begun is halted only by hostile reaction or by other elements in the situation which demand it. If, during the course of an attack, it becomes necessary to pass to the defensive, the leading foot elements entrench themselves on the ground held. The leading echelon then is thinned out and forces are redistributed to organize the defense in depth. It may be necessary to move some elements to the front or rear for short distances to establish the defense on favorable terrain and secure flanking fire. Since any major adjustments attempted in daylight will probably result in heavy casualties, the general position of attacking units is maintained until darkness, when the selected defense position is occupied and organized.

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

c. After an objective is taken, the enemy may attempt to retake the positions by one or several counterattacks during the period when fatigue and disorganization render the position vulnerable. Reaction by the enemy must be anticipated and measures promptly taken to consolidate the position and reorganize the units. Provisions made to defend the newly gained ground will include the maintenance of contact with the enemy, the establishment of observation posts, posting of observers for field artillery and other supporting weapons, the organization of a counterattacking force, and the avoidance of undue relaxation after a successful attack.

525. If, during the course of an attack, it becomes necessary to break off the action and withdraw, the command initially passes to the defensive. The completeness of the defense is dependent upon the situation and whether the initial defensive and the withdrawal must be executed in daylight or darkness.
CHAPTER 9
THE DEFENSIVE

Section 1. ORGANIZATION FOR DEFENSE

GENERAL

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

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

c. Under the second object, the defensive usually is expressed in the mission received from higher authority. This mission may be to hold a vital area pending completion of the maneuver of other forces, to protect a flank, or to contain an enemy force while an offensive is being conducted on another part of the front or in another theater. Defensive measures always will be taken, in the absence of specific instructions, when an attack has reached its objective or is unable to continue the advance.

527. Defensive doctrine contemplates the selection and organization of a battle position which is to be held at all costs. Forward of that position maximum use is made of covering forces to delay and disorganize the advance of the enemy and deceive him as to the true location of the battle position. Strong reserves are held out to destroy the enemy by counterattack if he penetrates the battle position and after the momentum of the attack has been spent. See paragraphs 684 to 651.
The mission, the situation, including the enemy capabilities, and the terrain, influence the choice of localities and the type of defense adopted.

b. The position on which battle is offered must conform to the object of the defense and should facilitate future maneuver without jeopardizing the success of the defense. It must force the enemy to a direct attack or a time-consuming maneuver. A position that can be avoided readily has no defensive value. A position on the flank of the hostile route of advance is effective only if it compels the enemy to change direction and attack it in force rather than to contain and bypass it.

Reconnaissance of the position is as detailed as the time and situation permit. It includes a study of the principal routes available for hostile approach, terrain available for hostile observation, and the avenues most advantageous to the hostile attack. A study of the terrain on which the enemy must carry out his attack will give valuable indications of his possible assembly areas, the location of his artillery, the terrain favorable for attack by his armored units, and the area most advantageous for his main attack.

If contact with the enemy has not been made, the commander ordinarily is free to make a detailed reconnaissance of position, select the terrain on which to defend, and decide on the best distribution of troops. Every means is employed by the commander to expedite completion of plans, and issuance of orders to subordinates so that troops are held a minimum of time in assembly areas.

Basing his action on his mission, his personal reconnaissance, the reconnaissance reports of his subordinates, and the available information of the enemy and friendly forces, the commander forms an estimate of the enemy's capabilities and the probable front of hostile attack. He also makes his decision regarding the location of the main line of resistance, the employment of the artillery and other supporting weapons, the assignment of sectors, the strength and location of the general reserve, the defenses against armored attack and hostile aircraft, and other measures necessary for security. Successive reconnaissances by lower commanders fix on the ground the distribution of smaller units and the location of their combat emplacements. Exact information as to the location of the main line of resistance is furnished to all supporting forces including artillery and air.
532. a. In the hasty assumption of the defensive from a march formation, reconnaissance is executed concurrently with the development of subordinate units within their assigned areas. Dispositions of troops and weapons are coordinated by the senior commander as the situation continues, so as to complete the integrity of the defense as early as possible.

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

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

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

b. Natural obstacles such as river lines and swamps are important factors for consideration, particularly since the situation normally will involve protective measures against armored units, or other mechanized forces.

c. Commanding elevations and ridges delimit the compartments of terrain and form the framework of the system of observation, command, and fire control in combat. They determine directly the location of the observation posts and positions of the artillery and other supporting weapons, and indirectly the location of defensive positions and assembly areas. Level ground or long uniform slopes afford better fields of fire for the flat trajectory weapons of the defense but also favor armored action.

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

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

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

b. When the forward limit of the position is on the forward slope, the defense areas of front-line battalions may be extended to the rear to include the reverse slope. When it is located on the reverse slope, front-line battalions establish detachments on the forward slope to observe and direct fire upon the enemy and to give timely information of his dispositions and movements.

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

b. Maximum advantage is taken of natural and artificial obstacles covered by antitank weapons as well as other weapons effective against personnel to stop attack by armored units, or limit the directions of their movement. Towns, villages, and cities give considerable additional strength to a defensive position against armor. They are vulnerable to air attack, however, especially by incendiary bombs.

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

539. A position combining all defensive advantages will seldom be available. The weak points of a position are strengthened. A short field of frontal fire is compensated by dense flanking fires and heavy mortar and artillery concentrations; exposure to hostile observation is offset by distribution in depth and construction of dummy works. Persistent chemical agents, demolitions, and mines can be used effectively to strengthen exposed flanks and to contaminate and block covered avenues of approach leading into the position.

540. Positions on forward slopes are difficult to screen from hostile observation. Irregularities in the ground make it difficult to establish continuous bands of flanking fire with flat trajectory weapons. Troops occupying these positions may be subject to observed direct and indirect fire. On the other hand, positions on forward slopes may permit observed fire at long ranges on an approaching enemy. Reverse slopes may afford a good field of fire for automatic weapons against an enemy clearing the crest or against an enemy advancing up the forward slope of an adjacent hill. It often is possible to combine the advantage of forward and reverse slopes, occupying the forward slopes in strength at night, and occupying them with a skeleton force with automatic weapons during daylight.

541. The defense, no less than the offense, must effect surprise. The organization of a defensive system must not betray the defensive dispositions. Every available means must be employed not only to mislead the attacker as to the location of the position but also as to the strength and disposition of the defending force. These means include shifting, during lulls, those weapons whose positions were disclosed in repelling attacks. Deception, delay, and security are obtained through the use of covering forces.

542. Corps and division reconnaissance elements, reinforced as necessary by motorized infantry, armor, artillery, and engineers, seek especially to locate the mass of the hostile force. They may be employed as a mobile covering force, or to harass the enemy flanks and rear. Reconnaissance aviation is employed to augment
the reconnaissance in depth and to locate and make timely reports of hostile movements. During battle, reconnaissance and security missions are continued, especially to the flanks.

SECURITY

543. Prompt and continuing security measures are taken in those directions from which the enemy is capable of attacking. Measures for counter-reconnaissance are taken by all troops and agencies in order to screen from the enemy the preparations and dispositions made for defense.

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

545. Friendly aviation, general covering forces, the general outpost, the combat outpost and other local security measures of forward elements of the battle position comprise the usual security echelons to the front. Conditions may preclude the employment of all these means, but in a deliberate defense, a commander must provide security elements within the means available.

546. Security forces have the mission of providing early warning of the approach of hostile forces, of providing time for the main force to prepare for combat, of forcing early deployment of the enemy, of deceiving him as to the exact location of the main battle position, and of observing the enemy's advance.

547. Troop units for the advance covering forces will generally be designated and controlled by the higher commander while the general outpost will be furnished by divisions or comparable elements assigned sectors on the main battle position. Combat outposts are usually furnished by lower units assigned to the main line of resistance.

548. a. Whenever practicable, an advance covering force is employed in front of the general outpost. The mission of this cover-
b. The advance covering force should be mobile. The use of armored and motorized units including engineers is desirable. The force should have strong artillery and antitank support. Organic artillery may be reinforced by artillery from the main force, emplaced in advance of the battle position.

c. The advance covering force fights delaying action in its withdrawal. Unless the mission requires it, serious engagement with the enemy is avoided.

549. a. Natural terrain obstacles, such as water courses, heavily wooded areas, swamps, and any restricted avenue of approach are particularly favorable areas for the operations of advance covering forces.

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

550. a. The location of the general outpost is influenced by the terrain and our own dispositions. The position selected should deny the enemy ground observation of the main battle positions; it should afford superior observation, good fields of fire, and obstacles.

b. The mission of the general outpost is to provide early warning of the approach of a hostile force; provide time for the units in the main battle position to prepare themselves for combat; to force early development and attack by the enemy, delaying him and disorganizing his formations; and to deceive the enemy as to the exact location of the main battle position.

551. a. The general outpost garrison usually consists of infantry reinforced with armored units and engineers. According to its location, it may be supported by artillery fires from the main battle position or may have artillery attached to it.

b. The general outpost line of resistance, and the ground to the rear when appropriate, are organized for delaying action. Since the sectors assigned units will be relatively wide, maximum use of natural and artificial obstacles, mine fields, demolitions, and
long-range fires is indicated. Unless required by the mission, the general outpost does not accept close combat.

552. a. The foreground of the battle position is occupied by combat outposts detailed from each battalion holding a sector of the main line of resistance.

b. The mission of the combat outposts is to provide local security and gain time for troops responsible for the defense of the main line of resistance, and to deceive the enemy regarding where the main resistance is to be encountered. As long as the general outpost position is held, combat outposts may be relatively weak. The approximate strength of combat outposts may be directed by the higher commander. Prior to contact, combat outposts screen the units along the main line of resistance from infiltrating enemy patrols. Combat outposts will ordinarily not be established beyond the effective range of the light field artillery of the battle position.

c. When battle is interrupted by nightfall, combat outposts push their patrols forward in close contact with the enemy. The action of the combat outposts in adjacent sectors is coordinated by adjacent and higher commanders.

553. a. As each in turn is forced to withdraw under hostile pressure the covering forces and outpost conduct a delaying action. The withdrawals involved must be coordinated to insure effective covering fire from friendly troops. Prearranged signals, previously designated routes of withdrawal, and full use of signal communication means facilitate this coordination. Every effort is made to deceive the enemy as to the exact location of the battle position. The development of a heavy volume of fire, close range artillery support and withdrawals around the flanks, and hence at an angle to the trace of the battle position are among the means which facilitate both withdrawal and deception.

b. After the combat outposts have been forced to withdraw and the battle position is uncovered, battalion commanders provide local security for the battle position whenever the situation permits, such as during intervals between assaults.

MAIN BATTLE POSITION

554. a. The defense is built around a series of organized and occupied tactical localities. These tactical localities are selected with consideration for their observation and natural defensive strength.
so that their retention will insure the integrity of the position. The main battle position comprises a zone of resistance consisting of a number of mutually supporting defense areas disposed irregularly in width and depth, each organized for all around defense with trenches, fox holes, obstacles, and emplacements. Tactical unity is maintained in each defensive area.

b. A line joining the forward edge of the most advanced organized defense areas is called the main line of resistance. It is a planning line in front of which the field artillery and other supporting fires must be able to concentrate. The contour of the main line of resistance is thus irregular in trace, with elements on it sited for frontal and flanking fire.

555. The distance between successive echelons on the battle position should permit effective mutual support between adjacent defense areas. Defense areas should not be so close as to result in any area falling into the zone of dispersion of artillery fire directed against another. This distribution in depth diminishes the effect of hostile fire, provides for continuity in defensive fires, and provides for movement against the enemy, even though he succeeds in penetrating into the battle positions.

556. The natural defensive strength of the position has a direct bearing upon the distribution of troops for its defense, both as to frontage and depth. The all around defense of mutually supporting vital tactical localities is of paramount importance. Portions of the front which have great defensive strength can be held with fewer men, or units can be assigned wider sectors. Some portions of the front may remain unoccupied yet be held effectively by a combination of firepower and obstacles. Close terrain requires a greater density of troops forward toward the main line of resistance.

557. The width of sectors assigned to infantry units varies with the natural defensive strength of the various parts of the position; the relative importance of the sectors; the degree of control required; the number, strength, and weapons of units available; and the estimate of enemy capabilities. The necessity for control and the character of fields of fire affect the intervals which may be permitted between tactical localities. Some variation in the width of sectors may arise from the necessity for adjusting them to fix responsibility for defense of critical terrain. Economy of force is obtained by assigning units in direct proportion to the natural and artificial strength of the terrain. This enables the commander to hold out the maximum strength for use as reserves.
553. Sectors are delimited in orders by boundaries (lines indicated on the map or ground extending from rear to front). Boundaries are located so that there will be no question of the responsibility for the defense of the terrain which dominates a critical avenue of hostile approach. While it is frequently impossible to include both the avenue of hostile approach and the adjacent dominating terrain in the sector of the small units, the boundaries of sectors assigned to battalion and larger units should be located to insure unity of defensive dispositions and fires in defense of these critical localities.

559. a. Boundaries are extended forward of the main battle position. Divisional boundaries are extended to the range of weapons supporting all divisional units, including that of artillery attached to or supporting any divisional units on general outpost. This permits the coordination of artillery fire by the division or similar headquarters and facilitates its further coordination by the corps. Boundaries between front line regiments and battalions are extended forward at least to the limit of ground observation, including that of regimental or battalion elements serving as combat outposts. Such an extension enables commanders of these units to coordinate fires in the immediate foreground and delineates responsibility for the garrisoning of combat outposts.

b. The extension of boundaries to the rear is influenced by the existing road net and by the routes for movement within the position.

560. a. The division commander, upon the recommendation of the division artillery commander, directs the distribution of the division artillery and its organization for combat. Since the rapid concentration of artillery fire is essential to a successful defense, centralized command of the artillery is preferable. Every effort is made to meet the hostile main attack with the mass of the artillery fire.

b. The echelonment in depth of the field artillery takes into consideration the range of the various weapons, the location of the targets, and the possibilities of neutralization by hostile counter-battery fire. The echelonment is limited by the considerations that the bulk of the artillery must be able to concentrate its fire in close support of the main line of resistance, that the foremost echelon can fire deep in the hostile zone, and that the rearmost can support the rear defense areas of the battle position. The bulk of the light field artillery should be able to fire throughout the main battle position.
561. a. Normally, armor is not employed to hold defensive positions. At times, however, it may be used well forward to cover the occupation of other troops, or it may be employed to hold a position pending the arrival of other troops. When covering the occupation of position it usually accomplishes its mission by delaying action. When holding a defensive position with organic or attached infantry, armored units employ the same principles as infantry units on the defense.

b. Since the infantry organic to an armored division is inadequate to garrison the same frontage as an infantry division it is desirable to attach additional infantry to the armored division to permit it to hold a sector justified by the strength of its other arms. Alternatively, the tank elements of the division may be used as the reserve for fronts more extensive than the division sector.

562. a. Tank units, organic or attached to infantry, have two primary missions: to protect forward elements from enemy tanks, and to destroy by counterattack enemy who have penetrated the defensive position. In order to give immediate protection to infantry, part of the organic or supporting tanks should occupy positions in the defense areas. In this role, positions, dispositions, and maintenance of tactical integrity should be such that they can move rapidly into the counterattack. The bulk of the tanks should be held in reserve for the purpose of reinforcing threatened areas and for counterattack.

b. Large armored formations constitute a powerful striking force and are normally held initially in reserve prepared for rapid entry into action when an opportunity for a counterblow is presented. The mobility of such units favors employment of armored elements with the covering forces during the early stages of the hostile advance.

RESERVES

563. The directions from which the hostile main attack may be expected and the commander's plan of maneuver determine the initial location of the reserve. Availability of suitable terrain is an important consideration in locating the reserve. Dispersal of the reserves into tactical groupings may be desirable in order to take advantage of cover, concealment, road net, and to facilitate employment. It may be echeloned for protective purposes in rear of an exposed flank in an assembly area from which it can deliver a planned and prepared counterattack.
564. a. General reserves may be called upon to relieve units on the battle position, participate in a major counterattack or counter-offensive, extend the flanks of the battle position, or occupy a rear position.

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

ORGANIZATION OF FIRE

565. Coordination of the fire of the infantry, armored cavalry, artillery, and the use of support aviation, is carefully planned and is expressed in orders. Plans provide for bringing the enemy under effective fire as early as practicable unless the situation requires that fire be withheld to obtain surprise. Provision is also made for regulating the intensity of fires so that the enemy is subjected to progressively heavier fire as he approaches the defensive position.

566. a. Defensive positions are organized to utilize the defensive strength of the terrain and to gain the maximum effect from all weapons in the coordination of fires. The organization of systematic flanking fire by machine guns supplemented by the fires of other weapons constitutes the basis of defensive dispositions. Adjacent units, in addition to defending their own fronts, cover each other's fronts with flanking fire. Dead spaces in bands of machine gun fire are covered by the fire of other weapons. Fire effect is increased by obstacles which hold the enemy under frontal and flanking fire. Sectors of the defensive position especially exposed to hostile fire may be left unoccupied, except at night and during periods of low visibility, and may be defended by flanking fire from adjacent sectors.

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

2. Artillery and heavy mortar fires are coordinated in the defensive plan of fire and are especially concentrated on the critical localities and on ground which is protected from or beyond the range of the fire of other supporting weapons. The effective control of these fires requires good observation, efficient signal communication and liaison. A considerable portion of the artillery and mortars must be capable of concentrating their fires on any penetration of the battle position. Gun positions should be located to insure that such penetrations will not jeopardize the ability of the artillery to support the counterattack.

567. All possible measures are taken to insure security against armored attack. Defense against armored attack is organized throughout the depth of the position. Although the main defensive effort against armored attack is prepared in areas which are favorable to the employment of armored forces, other areas less favorable to armor, should not be disregarded. Battalion and regimental antitank weapons from concealed positions defend the forward part of the battle position, while antitank weapons of higher units are echeloned farther in rear. Positions and routes for these weapons are reconnoitered, and the guns are held in readiness prepared for rapid movement to any threatened part of the front.

568. Defensive means against armored units include combat aviation, armored forces, mines, special weapons, or the special use of existing weapons, natural and artificial obstacles, organization of the ground, a warning system, and antitank weapons furnish the main defense against armored vehicles. Antitank defense must be organized in depth. The main antitank defensive effort is made in areas which are most favorable to the employment of armored forces.

569. Antitank weapons are disposed in width and depth within the battle position and their fires are coordinated to insure coverage of obstacles and likely routes of tank approach. Regimental tank units or antitank weapons may be attached to front-line battalions to reinforce the antitank defense of the main line of resistance, and to provide antitank defense in depth within the battalion defense
areas. Those elements attached to the reserve battalion provide antitank defense in depth for the regimental sector. Tanks are disposed to cover the most likely routes of tank approach. Antitank weapons of the battalions are disposed to overlap the sectors of fire of the tanks, to cover approaches not covered by the tanks, and to provide close-in antitank defense.

570. a. Weapons whose primary missions are against objectives other than armored units are used also against armored vehicles to the limit of their effectiveness. Small-arms and machine-gun fire has a limited effect, interfering primarily with the enemy's observation. High explosive and incendiary missiles are effective against armored vehicles. Antitank grenades, incendiary grenades, and smoke grenades supplement the close-in antitank defense.

b. Guns intended solely for antitank defense are kept concealed until their special target appears, since their effectiveness is jeopardized if their location is prematurely disclosed. Close-in protection of these guns is coordinated with other troops.

571. Armored cavalry units may be used to strengthen and deepen the antitank defense and provide additional mobile reserve. Large armored elements are effective means of countering the mobility and initiative of the attacker, particularly his armor. Armor is best used offensively in large groups on definite counterattack missions against the flanks and rear of the hostile penetration. Armored units utilize their mobility to gain an advantageous position from which to intercept hostile armor and deliver surprise fire. Their employment must be closely coordinated with and supported by other ground forces.

572. All supporting artillery must be prepared to assist in antitank defense. In both offensive and defensive action, provision should be made for the rapid concentration of as much artillery fire as possible on all areas favoring the assembly and maneuver of armored units, particularly on any defiles leading to such areas. In case of a penetration into the rear areas, artillery may engage armor by direct laying.

573. Antiaircraft artillery weapons are sited so that they may be employed against attack by armored vehicles when this can be done without interfering with their primary mission. In the event of simultaneous attack from hostile aircraft and armored vehicles, fire must be concentrated against the more dangerous threat.
574. Combat aviation is a powerful weapon against armored forces. Bombing, chemical, and direct fire attacks will be effective under many conditions. It has the mobility and fire power to strike and break up armored threats before they arrive within range of artillery and antitank weapons.

575. Chemical agents may be used to restrict possible assembly areas for armored units, to cause casualties to units in movement, and to render difficult the removal of obstructions or repair of damage caused by demolitions. Ordinarily, persistent chemical agents will be most effective unless their use will interfere with subsequent operation of friendly troops. Under such circumstances the use of nonpersistent chemical agents may be advantageous.

576. a. Mines are an effective means of defense against armored units. Antitank mines can be laid or buried without prohibitive expenditure of time and labor. Mines are laid in geometric patterns but slight accidental variations occur due to terrain and the human error in pacing. Mine fields are installed within the defended area as well as in front of it.

b. Mines are useful for quickly blocking defiles and favorable avenues of hostile approach. The location of mines must be coordinated with natural or artificial obstacles and with the fire of antitank weapons. They should be concealed, supplemented by dummy mine fields, and covered by fire to prevent removal by the enemy. The use of antipersonnel mines among antitank mines assist in the prevention of the removal of the mines by other than specially trained personnel. It must be remembered however that this limitation also will apply to friendly forces upon the resumption of the offensive.

c. Mine fields, contaminated areas, and other obstacles restrict the movement of the troops they are designed to protect. A careful and detailed record of the location of such obstacles must be maintained so that friendly troops entering the area can be advised and the necessary precautions taken for the safety of troops. Where antipersonnel mines have been included as part of the obstacle, this record must include an accurate location and give the type and numbers of each mine, so that if necessary they may be removed safely by troops other than those who laid them.

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

578. Artificial obstacles consist principally of mine fields and demolitions. Fabricated obstacles, barricades, and antitank ditches may be used in special situations. The location of artificial obstacles must be coordinated with natural obstacles and with the fire of antitank and other weapons. It is important that obstacles be covered by fire to prevent the enemy from removing the obstructions. Removal of obstacles can be impeded by contamination with persistent chemical agents. In general, obstacles, demolitions, mines, and persistent chemical contaminations are located where the enemy will come upon them suddenly and be unable to avoid them.

579. If hostile armor succeeds in entering or breaking through the battle position, it may be stopped, and destroyed by antitank fires, by armored units counterattacking or by a combination of these and other available means. It is normally impracticable or inadvisable to direct the main effort of the counterattack against the front of the enemy’s armored force. It is usually better to employ natural and artificial obstacles, reinforced with antitank weapons, infantry and armor, against the point of the advance and direct the counterattack against the base or flank of the salient to destroy the penetrating force.

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

581. The artillery plan of fire is based upon fires which—

a. Delay and disorganize the enemy in his approach to the position by long-range harassing and interdiction fire.

b. Disrupt the enemy’s preparation for attack by counterpreparation fire.

c. Impede his attack with fire in width and depth throughout the defensive sector.
d. Break up the assault on the battle position by close-in defensive fires.

a. Limit penetration of the battle position by fire within our lines delivered on call.

f. Support the counterattack.

532. a. It is important to interdict hostile routes of approach, and to dislocate the hostile system of command and fire control at the earliest possible moment. Counterbattery fire, interdiction fire, and harassing fire are the principal missions of the medium and heavy field artillery throughout the battle. Long-range destruction and interdiction fire is directed especially on sensitive points in the enemy's rear areas and on his lines of communications, bridges, crossroads, and supply establishments.

b. The corps artillery commander coordinates the fires of the artillery with the corps. The corps may give the divisions instructions regulating the employment of the division artillery in the execution of its more distant missions. The corps artillery reinforces the fires of the division artillery. Corps artillery extends the depth of the fires of the division artillery.

583. a. Antiaircraft artillery is disposed initially to protect the organization and occupation of the battle position. When the commander has determined where the enemy is making his main attack, the antiaircraft artillery concentrates its efforts on preventing air reconnaissance and attack on the threatened parts of the defensive position, on protecting the employment of reserves for counterattack, and on protecting field artillery units.

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

c. When the air situation warrants, a division (or higher) commander may direct that some or all of the available antiaircraft weapons be sited so that they may be employed against a possible ground attack or in close support of infantry, armored cavalry, or other units.

584. As in other operations, combat aviation in defense will be engaged in its normal threefold mission. Its primary task is the gaining and maintaining of air superiority. This is followed by the isolation of the battlefield which is the process of preventing
or hindering movement, including that of reserves, to the decisive area. Finally, it will intervene in the ground battle by engaging in close support missions. These may include attacks against enemy columns, artillery in position, reserves, and armored units.

**ORGANIZATION OF THE GROUND**

535. The organization of a position is limited only by the time and facilities available. Dependent upon the situation and the time and material available, and initial hastily occupied position is developed into a strongly fortified system. Protection is to be sought in the distribution of defenses in depth and in width, their adaptation to the terrain, concealment from hostile observation, and in the strength of construction. From the beginning, great care is taken to conceal all works. Measures for increasing the effect of fire and for providing adequate signal communication take precedence over the construction of field fortification.

536. a. The development of a defensive position seeks first of all to strengthen the battle position itself, battery positions, and the command and control facilities of the entire position. The means employed include communication trenches; obstacles, including tank barriers; mines; shelter for troops; observation and command posts, including alternate locations; signal communication; gun positions; and supply dumps. These works differ from those in mobile situations in the elaborateness and permanency of their construction. When locating supply installations careful consideration should be given to adequate dispersal to minimize the effects of massed hostile air attacks. In areas of resistance in rear of the main line of resistance, permanent works are constructed to limit hostile penetration. All works are concealed or camouflaged.

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

537. a. Troops carry out the organization of the position in accordance with a plan of construction expressed in orders as priorities. After the location of combat emplacements has been fixed, priority is given to clearing the field of fire, to removal of objects masking our own observation, and to the determination of ranges to points in the foreground. These measures are followed ordinarily by
the construction of the various defensive works and obstacles, and by the preparation of routes of approach for reserves and for ammunition supply. Primary consideration should be given to provision for camouflaging the works as they are constructed. Work may proceed simultaneously on several items.

b. Artillery and heavy weapons units give priority to the construction of gun emplacements, observation and command posts and signal communication systems, and provide for the supply of ammunition. Early consideration is given to preparations for the close defense of the positions. Individual rifle pits and other shelters are constructed for personnel. Camouflage and protection for guns and ammunition are provided. Alternate positions for gun emplacements are planned, constructed, and concealed.

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

589. Dummy works serve to mislead the enemy and disperse his fire. To be effective, they must appear camouflaged and otherwise closely resemble genuine works. Dummy works easily recognizable as such give the enemy valuable negative information.

590. Channels of signal communication are increased and alternate channels provided. Units are connected by wire lines not only to the rear but also laterally. Lateral lines not only afford direct signal communication between adjacent units but also provide numerous alternative channels of signal communication between advanced units and the rear. Alternate command posts are selected and organized.

591. a. Engineers execute demolitions and construct obstacles, including mine fields and booby traps, to impede the advance of the enemy. They increase the defensive powers of the other arms by the construction of field works which require special equipment or training, by technical assistance in other works of organization of the ground, and by furnishing the necessary tools and engineer supplies.

b. Engineers also may be employed in the siting, preparation, and occupation of positions.

592. Persistent chemical agents have special defensive value since concentrations established before the hostile attack retain their
effectiveness throughout the attack. Persistent chemicals may be utilized to protect portions of the front and flanks of the position and to cover defiles, vital roads, road junctions, and wooded stream lines across or along favorable routes of hostile approach. When they can be placed without hostile interference, persistent chemical mines are employed; when the area is controlled by the enemy, chemical barriers can be laid by aviation, artillery, or chemical mortars. In deciding the use of persistent chemicals, the commander must carefully evaluate its effect on his contemplated future operations.

593. The selection of a rear position is essential to conduct of a flexible defense. It should be located at such distance from the main position that it can be organized without enemy interference and that it forces the enemy to reorganize prior to continuing his attack. The extent of its organization will depend upon the situation and the time available. The forces employed in the construction of the rear position must not be obtained at the risk of jeopardizing the defense of the main battle position.

594. Communication trenches greatly facilitate the exercise of command, the movement of troops, and the functioning of supply. In moving situations, time will rarely be available for the complete construction and camouflage of such trenches. They are indispensable in the prolonged occupation of a position. They are constructed first over exposed stretches on the routes of approach from the rear; their entrances are conspicuously marked. As a general rule, communication trenches should not be employed as combat emplacements. They should be sited so that they will not indicate to the enemy the location of combat emplacements. Their use, however, as part of a switch position should be considered.

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

596. Overhead cover is a means of conserving the fighting capacity of the troops in the prolonged occupation of a position.
Reserves within range of hostile artillery fire and subject to the attack of combat aviation are, as far as practicable, sheltered in bombproof dugouts.

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

598. Small dumps of ammunition, rations, and materials needed in the construction and defense of the position are established in the sectors of small units.

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

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

Section II. DEFENSE ON A WIDE FRONT

600. Under some circumstances it may be necessary for a force to defend on a frontage which is markedly greater than that usually considered desirable. The factors which influence such a decision are—

a. The defender has air superiority and adequate armor.

b. Reinforcements are expected or available.

c. The enemy is inferior in training, in material, and lacks armored units or mobility.

d. Terrain to the rear is unfavorable, does not offer a shortened front, or restricts maneuver room.

e. Frontage assigned is such that the local commander has no choice but to defend it thinly.

f. Strong natural obstacles, which aid the defense and restrict enemy movement, exist to the front.
601. Where the frontage assigned a unit is many times greater than that considered normal, the defense will take the form of a screening action. Except for such extreme cases, the principles of defensive combat are valid. In the application of these principles on an extended frontage certain modifications or improvisations are necessary. The composition and number of troops available, the terrain and the situation constitute the primary governing factors. Under heavy attack the screening force may be forced to conduct a delaying action.

602. A defense in depth is essential. Seldom will it be desirable to commit all or even the bulk of a force to positions along the main line of resistance. Such a shallow defense would be extremely vulnerable since any success by the enemy would carry him through the defensive zone and allow him to maneuver in the rear. Depth is obtained by distribution of forces in several echelons and by holding out adequate reserves. Higher commanders add to the depth of the defense in a threatened sector by occupying prepared positions to the rear with either reserves or units taken from another part of the main battle position.

603. The sectors assigned units on the main line of resistance under such circumstances are usually so large as to preclude the organization of a zone of mutually supporting defense areas across the entire front. Emphasis, therefore, is placed on the organization and occupation of critical terrain features throughout the width and depth of the battle position by strong, balanced, self-sustaining units. Each such feature is organized for all around defense, and the balance of the sector covered with patrols and detached posts. Additional defense areas are prepared but not initially occupied; these will be manned in accordance with enemy action.

604. The protection of the artillery and rear area installations becomes a problem of increased difficulty. In instances this may result in the location of both artillery and installations within the organized defensive areas. In other cases, reliance may be placed upon strongly organized artillery position areas and defensive installations. The incidental protection afforded by proximity to reserve locations is also to be considered in the location of rear area installations.

605. The maximum number of troops are held mobile in each unit. The commander employs these in the zone of the enemy attack either in the blocking role, the counterattack role, or both, with
the object of limiting the enemy penetration or driving him out of the position. Early warning is essential, especially to the smaller units along the main line of resistance, otherwise enemy action may prevent the shifting of units to best meet the hostile attack.

606. a. The difficulty of defense against armor over an excessively wide defensive sector stems from the frontage to the covered combined with the rapidity with which the hostile attack can break through the overextended forward position.

b. As a consequence early information of hostile offensive movements is of vital importance. Reconnaissance by combat aviation and mobile ground elements is vital and must be extensive and aggressive. Signal means allocated to the warning system must be adequate to the increased distances involved.

607. a. Location of the sector reserves, including strong armored formation, is of increased importance. Frequently, two or more separate forces must be constituted to cover adequately the wide front and permit timely and powerful reaction against a hostile penetration. Under such conditions, detailed plans are essential to permit rapid concentration of the entire reserve in any of the critical localities. Full use should be made of obstacles and demolitions to canalize and limit the areas in which the enemy can operate.

b. Early employment of combat aviation is essential to delay, if not destroy, such a penetration.

608. a. Advance planning should provide for the employment of sector reserves from adjacent sectors against the flanks of a possible penetration.

b. Airborne or other general reserves should be earmarked for possible use in the coordinated reaction against a strong hostile attack.

609. For details of defense against armored attack see paragraphs 568 to 580.

Section III. DEFENSE AGAINST AIRBORNE ATTACK

610. a. Airborne assaults are characterized by speed and flexibility in choice of objectives. Airborne forces may be expected to attack with surprise, in mass, under the cover of heavy air support. Detailed planning and rehearsals permit units to move
independently and aggressively towards their assigned objectives. An air reconnaissance which may include both visual and photographic reconnaissance must precede the attack. The attack will usually be divided into several phases. The first phase may be a period of air bombardment varying from a number of days to a single concentrated bombardment just prior to the landing. Where surprise is sought the bombardment may be omitted. Second, the initial landings by airborne troops preceded by a pathfinder serial may follow. Finally, the period of build-up by parachute, glider, or air landed units which will reinforce and exploit initial gains can be expected.

b. Airborne attacks are limited by weather, suitable landing areas, and the maintenance of local air superiority. After initial landing, airborne troops require a brief period of reorganization and are limited in motor transport and heavy fire support.

611. All units are responsible for their own security. In the combat zone the coordination of available defense means is a responsibility of tactical commanders. In the zone of the interior and the communications zone, this coordination is a responsibility of commanders having area command.

612. a. All units, command and service, must be prepared to participate in operations against airborne troops. Planning should include the coordination of partisan, militia, and civil defense organizations.

b. The paramount passive measure is an efficient warning system which furnishes early air warning and prompt information as to parachute drops and air landings. Other passive means include antiairborne obstacles, camouflage, dispersion, and concealment, and the realistic use of dummy installations.

613. a. The demoralization inherent in an enemy airborne attack can be greatly reduced by the timely provision of both plans and means to effect swift destruction of the attacker. Within the means available, commanders plan for the defense of their area against airborne attack. The extent of these preparations is governed by the available troops, requirements of other missions, the intelligence estimate as to the probability of airborne attack, the airborne troops, and airlift available to the enemy, the extent of the air warning service, relative air superiority, the number and importance of probable airborne objectives in the area, the number and distribution of feasible drop and landing zones, and the available road net.