FM 100-5

TENTATIVE

FIELD SERVICE REGULATIONS

OPERATIONS

Prepared under the direction of the
Chief of Staff

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WAR DEPARTMENT,
WASHINGTON, *October 1, 1939.*

FM 100–5, Tentative Field Service Regulations, Operations, is published for the information and guidance of all concerned. It contains the principles of troop leading and combat of the combined arms in maneuver warfare and constitutes the basis of instruction of all arms and services for field service. It should be studied in connection with FM 100–10, Field Service Regulations, Administration, which covers the principles of administration and supply, and FM 100–15, Field Service Regulations, Larger Units, which discusses the functions and operations of larger units and territorial commands.

The basic principles of the tactics and technique of the various arms and services are set forth in field manuals. It is the function of the command to coordinate the tactics of the arms and the technique of the services so as to develop in the combined forces the teamwork essential to success.

The tentative Field Service Regulations are drafted from the point of view of operations against an opponent armed, organized, and equipped along modern lines. An army capable of waging a successful war under these conditions will prove adequate to any emergency less grave.

While the fundamental principles are neither numerous nor complex, their application may be difficult. Set rules must be avoided and methods varied. A thorough knowledge of the principles and experience in their application to various situations enable a commander to decide what methods to use in a particular situation confronting him.

The scope of the tentative Field Service Regulations is limited to land operations. Operations involving the joint action of the Army and Navy are governed by special regulations.

In applying the principles of the tentative Field Service Regulations, they will be interpreted in the light of the Rules of Land Warfare (pt. two, BFM, vol. VII) and of the restrictions imposed by any treaties and international agreements,

properly ratified, to which the United States is a signatory power.

[A. G. 062.11 (8-4-39).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

E. S. ADAMS,
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The Adjutant General.

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TENTATIVE

FIELD SERVICE REGULATIONS

OPERATIONS

(These regulations supersede Field Service Regulations, 1923)

CHAPTER 1

ORGANIZATION

ARMY OF THE UNITED STATES

■ 1. The Congress determines the strength and composition of the peace and war establishments and decides what citizens are available for military service. It provides also for the control of national resources necessary to fulfil war requirements.

■ 2. The *Army of the United States* consists of the Regular Army, the National Guard of the United States, the National Guard while in the service of the United States, the Officers' Reserve Corps, the Organized Reserves, and the Enlisted Reserve Corps. These components constitute the *organized land forces*.

The *unorganized militia* comprises all persons, not included in the organized land or naval forces, who have been or may be declared by the Congress to be liable to perform military duty in the service of the United States. It constitutes the source from which the untrained man power is obtained.

■ 3. The War Department prepares the basic plans for recruiting, mobilizing, organizing, supplying, equipping, and training the Army of the United States.

Instructions relative to mobilization are published in War Department Mobilization Regulations and are incorporated in current mobilization and war plans.

■ 4. The *military organization* is primarily the systematic arrangement of means for obtaining unity of effort in the accomplishment of a task or mission. It consists fundamentally of three elements: *command*, *combat*, and *service*. These elements are so combined as to provide a flexible framework within which the necessary regrouping of means may be made to meet various situations.

■ 5. In accordance with existing laws and the orders of the President, the War Department determines the tactical organization of the field forces and the territorial organization of the theater of war. It prescribes the manner in which the command and administrative functions will be exercised.

TACTICAL ORGANIZATION

■ 6. The *field forces* consist of a general headquarters (GHQ), one or more armies, GHQ aviation, and a GHQ reserve.

The GHQ aviation includes all aviation not otherwise specifically assigned and constitutes a pool of combat and transport aviation which provides forces for the conduct of offensive and defensive operations along functional lines. See FM 100–15.

The GHQ reserve is composed of troops of the various arms and services not habitually required by an army in the field, but which are held for use as reinforcements or for separate missions under GHQ.

■ 7. The *army* is composed of a headquarters, certain organic army troops and a variable number of divisions; these divisions, together with certain auxiliary units called corps troops, are organized into *army corps*, each with a corps headquarters. In addition, troops of the GHQ reserve and support aviation may be attached to an army as needed.

Several armies together with certain GHQ troops and aviation may be organized into a *group of armies* under a designated commander.

■ 8. The term *large units* as used in this text refers to divisions and larger units. A more detailed description of the larger units is found in FM 100–15.

■ 9. The *division* is the basic large unit of the combined arms. It comprises a headquarters and troops of the essential arms and services, all in correct proportion and so organized as to make it tactically and administratively a self-contained force capable, to a limited extent, of independent action.

■ 10. The organization of the different *arms and services* (see Chapter 2) is adapted to the most efficient operation of their weapons and technical equipment and to the formation and distribution of suitable groupings in combat.

In each arm and service the *elementary unit* comprises the largest number of basic elements that can be successfully handled under a single leader. These elementary units are combined into a *company* or similar unit which is the basic administrative unit and includes all the agencies required for subsistence, interior economy, and administration (see AR 245-5).

The *battalion* or similar unit is the basic tactical unit in which the essential elements necessary for instruction, maneuver, and combat are conveniently arranged and organized. It is composed of a headquarters, two or more companies or similar units, and certain special elements, organic and attached, which fit it for a mission requiring the application of the essential means pertaining to the arm or service. Unless organized as a separate battalion it has no administrative functions. (See AR 240-5.)

The *regiment* is both an administrative and a tactical unit. Ordinarily, it consists of a headquarters, a headquarters company and service company, either separate or combined, and two or more battalions or similar units. It may also include a company or similar unit in which certain special weapons and means, supplementing those of the battalions, are assembled for economy, instruction and administration. (See AR 235-5.) In the Air Corps the corresponding administrative and tactical unit is the group.

■ 11. In the interest of economy and in order to facilitate greater flexibility in the assignment to tasks, the means not habitually required by a unit are pooled and organically assigned to the next larger unit. These means are then allotted

to subordinate units in accordance with their requirements for the particular operations involved.

■ 12. A command is often subdivided into *tactical groupings* to facilitate the conduct of operations. This organization for combat is temporary and is made to define clearly the tactical responsibility of subordinate commanders in the execution of their assigned tasks. Tactical unity is, as far as practicable, preserved in making the subdivision.

■ 13. The *details of organization* of the field forces, and the amounts and kinds of transportation and major items of equipment are published in current War Department Tables of Organization and Tables of Basic Allowances. The organization of large units and their road spaces and the technical and logistical data are given in SOFM.

TERRITORIAL ORGANIZATION

■ 14. The *theater of war* comprises those areas of land and sea which are or may become directly involved in the operations of war.

■ 15. The *theater of operations* comprises the area of the theater of war in which operations are or may be conducted. It is designated by the War Department and comprises initially territory that is to be occupied or defended. It is divided normally into a combat zone and a communications zone.

■ 16. The *combat zone* comprises the area of the theater of operations required for the active operations of the combatant forces.

It is divided into army, corps, and division areas, each comprising the zone of operations of the unit to which it pertains.

■ 17. The *communications zone* is the part of the theater of operations containing the lines of communication, the establishments of supply and evacuation, and other agencies required for the immediate support and maintenance of the field forces in the theater of operations.

■ 18. The *zone of the interior* in general comprises the national territory within the continental limits of the United States, exclusive of areas included in the theater of operations.

■ 19. The details of organization of the theater of war and its territorial subdivisions are given in FM 100–15, and in instructions relative to mobilization published by the War Department.

CHAPTER 2

ARMS AND SERVICES

■ 20. GENERAL.—The units comprising the Army of the United States pertain to two functional subdivisions, the arms and the services.

The *arms* engage directly in combat and are known collectively as the line of the Army. The arms are: the Infantry, the Cavalry, the Field Artillery, the Coast Artillery Corps, the Air Corps, the Corps of Engineers, and the Signal Corps.

The *services* are charged with serving the line of the Army by performing the necessary functions of administration, supply, replacement, hospitalization, and evacuation. For further details see FM 100–10.

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

INFANTRY

■ 22. The *Infantry* is charged with the principal mission in battle. It is essentially the arm of close combat. This role, rather than the nature of its armament, distinguishes the Infantry as an arm.

The *primary mission* of the Infantry in the attack is to close with the enemy and destroy or capture him; in defense, to hold its own positions, check the enemy's advance, and throw him back by counterattack.

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■ **23. Infantry acts by fire, movement, and shock action, combining these means of action in combat.** 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.

Infantry is capable of independent action through the employment of its own weapons. Its offensive power, however, falls off appreciably when freedom of maneuver is limited or when confronted by an organized defensive position. Under these conditions the concentration of the fire of supporting artillery and other arms is necessary. The defensive power of Infantry reaches a maximum when the Infantry occupies an organized defensive position or the enemy's freedom of maneuver is restricted. However, under these conditions, the vulnerability of the Infantry to neutralization by artillery fire and air attack is correspondingly increased.

■ **24. Infantry is equipped with an *armament* adapted to its role as the arm of close combat.** Its principal offensive weapons are the rifle and bayonet and the light machine gun. Its mortars and heavy machine guns reinforce the fire power of the rifle units and contribute to the attainment of fire superiority upon which their ability to advance depends. Curved trajectory weapons (mortars and grenades) are utilized at close and medium ranges to attack personnel protected against flat trajectory fire by defilade or cover. Shock action is provided by tanks which assist rifle units in dealing with organized resistance.

The automatic and antitank weapons of Infantry increase its defensive power even on extended fronts. This power is augmented by proper utilization of the terrain and by organization of the ground, thereby providing mobile reserves.

When the situation so requires, elements of other arms are attached to Infantry for combat.

■ **25. *Tank units* are organically assigned to GHQ reserve and habitually allotted by it to larger units for reallotment to divisions operating in terrain favorable for the employment of tanks.**

Ordinarily, tanks do not participate in phases of combat prior to the assault. To develop their full power tanks must be given a well-defined objective, launched with surprise and employed in mass; if engaged piecemeal, they suffer rapid destruction from the concentrated fire of artillery and anti-tank weapons.

■ 26. The combat action of tanks is essentially offensive. They constitute a powerful maneuvering force in the hands of a higher commander with which to influence the course of combat. In case of a break-through, they can penetrate deeply into the hostile position and attack the enemy's reserves and artillery. In the defense they constitute an effective means of counterattack.

As a rule, tanks are employed to assist the advance of infantry foot troops, either preceding or accompanying the infantry assault echelon. They attack successive objectives which coincide with those of the supported infantry foot troops; these objectives should include those terrain features which will mask the tanks from hostile view.

■ 27. Infantry can move in all kinds of terrain; its operative *mobility* can be greatly increased by the use of motor transport. 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. In both attack and defense, it can utilize the terrain so as to develop fully its own fire power and minimize the effect of hostile fire.

■ 28. Infantry has the hardest task in battle; its losses are also the greatest. Its *combat power* rests primarily on the morale and fighting ability of the individual soldier and the leadership of its subordinate commanders. The demands that are made on the physical and moral strength of Infantry during crises in operations require that at other times commanders take all possible measures to conserve its energies, stimulate its morale, and cultivate the initiative and fighting spirit of the infantry soldier.

CAVALRY

■ 29. *Cavalry* is characterized by a high degree of mobility; its special value is derived from the rapidity and ease with which its power can be displaced from one position or locality to another.

Cavalry finds its most intensive application under conditions which permit complete freedom of maneuver and the exercise of its power of mobility; its utility becomes limited as conditions are created tending to restrict freedom of maneuver.

■ 30. The *mobility* of cavalry enables it to operate on extended fronts and at considerable distances from the main friendly forces. It thus extends the scope of operations of large units and secures to them the necessary freedom of maneuver.

Cavalry executes the missions of reconnaissance, counter-reconnaissance, and security for large units. It delivers combat separately and in combination with the operations of other arms, extending and supplementing their action when speed, surprise, or distant action is required.

In cooperation with the Air Corps, Cavalry locates the enemy, maintains contact with him, and procures for the higher command the essential information which it requires. In its covering operations, Cavalry is employed to screen the movements of large units.

■ 31. Cavalry constitutes a mobile combat force in the hands of higher commanders. It is especially adapted to the execution of combat missions where rapidity of movement is required. This rapidity of movement enables Cavalry to take advantage of opportunities to strike a sudden blow at weak points in the hostile dispositions and to meet critical situations arising in the course of operations. The mobility and fire power of Cavalry make it an effective means of conducting delaying action over considerable fronts and depths.

■ 32. Cavalry fights on a relatively broad front and slight depth. In the smaller units, the greater part is in the combat echelon so that local reserves are reduced to a minimum. Strong reserves are, on the other hand, often held out by the

large cavalry units. In principle, relatively weak forces, deployed in groups, contain the enemy on the front while the principal forces, attacking with rapidity and by surprise, strike the hostile forces in flank and rear.

■ 33. Cavalry comprises both horse and mechanized units; they are used in combination so that the one supplements the other. *Horse Cavalry* can operate in almost any terrain except swamps; *mechanized Cavalry* seeks terrain that will permit the maximum development of its fire power and mobility.

■ 34. *Horse Cavalry* is equipped with weapons similar to those of Infantry and has considerable fire power; it is provided with means for observation and rapid communication, scout cars for reconnaissance and motor transport for supply.

Horse Cavalry habitually maneuvers mounted; it ordinarily fights on foot. Distant separation of troops from their mounts is avoided. As a rule, mounted action is combined with dismounted action. Mounted action by large cavalry units is exceptional. Small units may attack mounted when opposed to an inferior or demoralized enemy, or when the attack can be delivered from close range by surprise.

■ 35. *Mechanized Cavalry* is equipped with armored fighting vehicles; its weapons are similar to those of horse Cavalry and include a high percentage of automatic weapons. Its principal means of communication is radio. In combat, it is difficult to control; it is sensitive to obstacles and conditions of terrain, and is subject to neutralization by artillery fire and air attack.

Mechanized Cavalry finds its principal role in employment on distant missions covering a wide area. If properly supported it can seize an objective but cannot hold it for a prolonged period without the support of Infantry or horse Cavalry, and artillery.

Because of its great mobility, armor protection, and fire power, mechanized Cavalry is able to intervene rapidly at a decisive point in battle and produce a powerful effect. On the offensive, mechanized Cavalry is the essential combat means for exploitation of a success; on the defensive, it is particularly useful in a counterattack and in covering a

retirement. When held in reserve, it constitutes a powerful means in the hands of higher commanders to parry or execute an enveloping maneuver, to reestablish the continuity of a front, or to exploit a success.

■ 36. The efficiency of Cavalry depends in great measure upon the condition of its mounts and the maintenance of its mechanized vehicles. Adequate provision must be made for the rest and subsistence of animals and for the maintenance and upkeep of combat vehicles. The strength of Cavalry must not be frittered away in secondary undertakings so as to render it inadequate for the execution of its principal missions.

The vulnerability of large mounted and mechanized formations to air attack frequently imposes on Cavalry the necessity of executing its movements by night or of marching in several columns or tactical groups.

■ 37. Other arms are combined with Cavalry in the cavalry division.

Cavalry does not constitute an organic element of infantry divisions. Cavalry units are attached to large units from higher commands as required by the situation.

Several cavalry divisions may be combined into a cavalry corps for the execution of a special mission. Large cavalry units are frequently reinforced by motorized Infantry and additional Field Artillery; the attachment of these units is usually indicated when strong hostile resistance is anticipated.

FIELD ARTILLERY

■ 38. *Field Artillery* is an arm of relatively long-range combat. Fire is its sole means of combat. It contributes to the movement of the entire force through the fire support which it renders other arms; its own movement is to insure this support.

■ 39. Artillery fire possesses great power of destruction and neutralization. It is the principal means of attack against material objectives. Its curved trajectories enable fire to reach personnel defiladed against flat-trajectory weapons or protected by ordinary overhead cover. The wide radius of

effect of artillery projectiles compels hostile troops in the open to move in widely deployed formations. Artillery fire also produces great moral effect.

■ 40. Artillery fire possesses a high degree of *flexibility*. Field artillery is thus capable of intervening over a zone of great width and depth, and of rapidly shifting and concentrating its fire in accordance with the situation, without changing its positions. This characteristic makes it possible to concentrate the fire of large masses of field artillery under a common fire direction. Such heavy concentrations of fire are, under certain conditions, capable of being directed with annihilating effects against critical objectives in the zone of combat. Through the maneuver of artillery fire, higher commanders possess a powerful means of influencing the course of combat. The efficiency with which artillery fires are maneuvered is dependent upon adequate control, close liaison with supported troops, and efficient communication and observation. Deficient observation causes a great increase in consumption of ammunition; poor signal communication prevents concentration of fire both in time and place.

■ 41. Field Artillery has *two principal missions* in combat:

It supports Infantry and Cavalry by fire, engaging those targets which are most dangerous to the supported arms.

It gives depth to combat by counterbattery fire, by attacking hostile reserves, and by dislocating the enemy's communication system and agencies of command.

■ 42. In order to carry out its principal combat missions, the Field Artillery of a command is ordinarily subdivided for combat so that a part is assigned to the support of particular units and the remainder retained under the direction of the chief of artillery of the command.

In the division, certain field artillery units are assigned to the *direct support* of specified infantry or cavalry units, and the remainder are retained in *general support* of the division as a whole. In higher commands, field artillery units may be placed in support of component large units comprising the command.

The assignment of direct support missions to Field Artillery permits direct cooperation with the supported units, and enables it to act with greater promptness in meeting the requirements of the rapidly changing situation on the front of the supported units. Such assignment does not, however, imply subordination of the field artillery units to the commander of the unit supported. So long as the higher commander is able to exercise effective control of the fire of his Field Artillery through his chief of artillery, he does not delegate the command of any portion of it to subordinate commanders.

■ 43. As a fundamental principle, Field Artillery can be employed with more effect and greater economy under *centralized control*. When, however, as the result of unusual extension of frontage, restricted visibility of the terrain, or insufficiency of signal communication, the superior commander cannot efficiently direct the fire of the supporting artillery, he should promptly place it under the orders of the commanders of the units supported. Unity of command requires that the responsibility for the success of an operation be not divided.

The requirements of *decentralization* in the control of Field Artillery must be met in such a way that the ability to effect concentration of the entire artillery fire power of large units is retained in the largest possible measure. In cases where the direction of artillery fire has been decentralized, higher artillery commanders retain, as far as practicable, the power to resume centralized control except in cases where artillery elements have been attached to subordinate units by superior authority.

■ 44. The artillery missions of the several large units are adapted to the characteristics of the matériel with which they are equipped, and the relative importance of the objectives.

Division artillery is most effective in fire on personnel. Its principal mission is the support of the Infantry and Cavalry. It is also employed to neutralize enemy observation, to interdict hostile movements, and to assist the corps artillery in counterbattery.

The *corps artillery* has for its principal mission the neutralization or destruction of the hostile artillery, the destruction of hostile defenses, and long-range interdiction fire. It is also employed in reinforcement of the fires of division artillery. Special artillery observation units (sound and flash) are assigned to the corps artillery.

The *army artillery*, which includes only such units as can be employed effectively in support of the army as a whole, has for its principal missions distant interdiction and destruction fire, and the assistance of corps artillery.

The *artillery in GHQ reserve* includes field artillery units of various classes and special artillery observation units (sound and flash). These units are habitually allotted to armies for employment under the army commander or for reallotment to lower units.

45. Field Artillery is organized with a view to the most efficient development of its fire power and the constitution of suitable groupings for the execution of its supporting missions.

When occasion requires, particularly when there is a great massing of field artillery, temporary groupings of batteries, battalions, or regiments may be formed for convenience in the execution of missions. These groupings are based upon the nature of the mission to be executed rather than upon type or caliber. Tactical unity is, as far as practicable, respected in the composition of groupings.

COAST ARTILLERY CORPS

46. The *Coast Artillery Corps* is characterized by the great fire power it can deliver primarily against naval and aerial targets. Its armament comprises seacoast artillery, antiaircraft artillery, and submarine mines.

47. The missions of the Coast Artillery Corps are to attack enemy naval vessels by means of artillery fire and submarine mines, and to combat hostile aircraft by means of fire from the ground.

Cooperating in coastal frontier defense with the Navy off shore, the Coast Artillery Corps mans and serves the harbor defenses established in time of peace and augmented in time

of war. These harbor defenses are highly organized and strongly protected localities, organized administratively and tactically for the defense of a harbor or other water area.

■ 48. *Seacoast artillery* comprises all the artillery, whether fixed or mobile, employed against hostile naval vessels. It is classified according to caliber as primary armament which includes cannon of 12-inch or greater caliber, and secondary which includes all other armament.

Seacoast artillery has the same general characteristics of fire as Field Artillery (see pars. 39 and 40) except for its greater power and range, and the armor-piercing ability of its projectiles which, in general, are not suitable for use against land targets. It is provided with special equipment to facilitate the delivery of accurate fire on moving targets at sea.

Fixed seacoast artillery secures protection from naval and air attack by fortifications and other permanent structures; its operation and service are greatly facilitated by mechanical means; its stability permits great accuracy of fire. The provision of permanently installed communications, stations and fire control equipment makes possible the establishment of a common fire direction to exploit the flexibility of artillery fire to the maximum extent.

Mobile seacoast artillery comprises *railway* artillery and *tractor-drawn* artillery. Both types combine strategical mobility with a limited tactical mobility and require a considerable time for emplacement. Mobile seacoast artillery provides additional gun fire for existing harbor defenses and is used in conjunction with other forces to protect harbors or coastal areas for which no permanent defenses have been provided.

Seacoast artillery is organized into groups and groupments in order to develop the maximum fire power and provide efficient fire direction.

■ 49. The general mission of the *antiaircraft artillery* is to combat hostile aircraft. For this purpose, it is equipped with antiaircraft guns, machine guns, searchlights, sound-locators, and equipment required for observation, fire-control, and

signal communication. These means of antiaircraft defense are combined in the regiment.

Antiaircraft artillery operates both by day and by night. Because of the mobility of its matériel, antiaircraft artillery lends itself to rapid concentration in critical areas.

Antiaircraft artillery reinforces the antiaircraft measures of other troops and, in cooperation with our own aviation, operates especially against hostile aircraft flying beyond the range of the weapons of other troops. It provides protection for those vital elements of a command most likely to be subjected to hostile air observation or attack. It is employed also in harbor defenses and for the protection of airdromes and other sensitive points in the rear areas.

■ 50. The establishment of a coordinated antiaircraft defense is facilitated by *centralized control* of antiaircraft units. In some situations, however, such as during an advance, it may be necessary to decentralize control of part of the antiaircraft artillery to protect widely separated units or installations.

■ 51. An essential agency of antiaircraft artillery is its *intelligence service*. This service gathers and transmits information of the enemy's air activities necessary for the proper employment of the antiaircraft artillery units. It should not be confused with the *aircraft warning service* which is a regional service forming part of a theater, sector, or area, and serving all agencies of antiaircraft defense. The aircraft warning service operates directly under the control of the commander of a sector or area or the theater of operations concerned.

AIR CORPS

■ 52. The general mission of the *Air Corps* is the preparation for and execution of air operations as a part of the field forces.

■ 53. **Military aviation is characterized by an extremely high degree of mobility, the ability to move in three dimensions, and extreme range of fire power.** Air operations may be restricted by hostile counter air force operations and antiaircraft measures, by the availability of air bases, and by adverse weather conditions.

The mobility of aircraft enables them to cover great distances in a short period of time and makes possible their rapid intervention at critical points in a theater of operations and rapid movement between widely separated theaters.

The power of aircraft to move in any direction enables them to maneuver in altitudes beyond the range of ground weapons, to approach terrestrial objectives from such altitudes, and to make deep incursions into enemy territory.

The operating range and fire power of combat aircraft are reciprocal functions and depend upon the distribution of the useful load between fuel and ammunition.

■ 54. In general, air operations involve three fundamental tactical functions:

Air attack, which is the attack of objectives on the earth's surface by aircraft;

Air fighting, which is the act of fighting between aircraft in flight;

Air reconnaissance and *observation*, which is the gaining of information through visual and photographic means carried in aircraft.

■ 55. In accordance with the purpose for which aircraft are ordinarily employed, military aviation is divided as follows: combat; reconnaissance, observation, and liaison; transport; and training and special purpose aviation.

Combat aviation is organized, equipped, and trained to engage in offensive and defensive air operations by air attack and air fighting. Corresponding to the means with which equipped, combat aviation is organized into bombardment and pursuit units. Medium and long-range reconnaissance is performed by bombardment types of aircraft.

Reconnaissance, observation, and *liaison aviation* is organized, equipped, and trained to conduct air reconnaissance, observe fire, gain military information by visual and photographic means, and transmit instructions and reports in accordance with the orders of supported units to which organically assigned or attached. It includes both heavier-than-air aircraft and balloons. Although armed for their own protection, they are not suitable for air attack or air fighting.

Transport aviation is organized, equipped, and trained to carry personnel and cargo. It is indispensable for facilitating the operations of Air Corps units through the rapid transport of personnel and essential items of supply, and is particularly suitable for increasing the mobility of foot troops in an emergency.

Training and *special purpose aviation* is organized, equipped, and trained especially for the training of flying personnel and for other special purposes not connected with air operations; it is neither suited nor intended for combat use.

56. A knowledge of the powers and limitations of *combat aviation* is a prerequisite to sound employment. These powers and limitations are derived from the characteristics of its constituent aircraft. These characteristics change rapidly with the development of new aircraft.

Bombardment aviation is characterized by its ability to carry large loads of destructive agents to attack surface objectives. It includes light, medium, and heavy bombardment.

Light bombardment aviation constitutes the principal element of GHQ aviation which operates in direct support of ground forces. (See par. 65.) Its principal weapons are light bombs and chemicals. It is capable of applying these destructive agents to destroy light material objectives, to interdict routes of communication and supply, to render airdromes temporarily useless, and to attack troops in the open or under light shelter.

Medium and *heavy bombardment* aviation constitute the offensive power of the GHQ striking forces. (See par. 65.) They are designed to carry the maximum bomb loads to great distances and to conduct long-range strategic reconnaissance over land and sea. Their principal weapon is the heavy bomb. They rely primarily upon high altitude flying, speed, defensive fire power, darkness, and the cover of clouds for security. They are particularly suitable for the destruction of heavy material objectives. Their radius of action is such that they can strike objectives at a great distance from their base and still find service and security deep in friendly territory.

Pursuit aviation is characterized by its great speed and maneuverability in the air and by its ability to engage in air fighting. It includes interceptor and fighter pursuit.

Interceptor pursuit aviation is designed primarily for defensive missions in the antiaircraft security of important areas and ground installations, and the protection of ground troops and their observation aviation. It extends protection beyond the range of antiaircraft artillery and its operations are coordinated therewith. (See par. 65.)

Fighter pursuit aviation has greater range than interceptor pursuit and is designed to accompany and protect bombardment aviation exposed to attack by hostile combat aviation.

Although pursuit aviation is designed primarily for air fighting, it can also be used to attack troops and their transportation.

■ 57. *Balloons* constitute elevated observation posts and serve as a means for extending the field of view under continuous observation. They possess a considerable degree of mobility and can be moved frequently without material loss of efficiency. They are, however, vulnerable to attack by hostile combat aviation and antiaircraft artillery if within range of the latter.

For purposes of observing and adjusting artillery fire, the balloon or the observation airplane is employed, whenever practicable, in preference to the reconnaissance airplane which is provided for and intended to perform reconnaissance missions.

■ 58. The *fire power* of combat aircraft used in air attack is characterized by its potential concentration and cumulative effect. This effect depends upon the nature and extent of the objective, upon the enemy's measures for antiaircraft defense, and upon the number and charactertisics of combat aircraft used against the objective. The constant threat of air attack exerts a strong influence on surface movements and operations.

■ 59. Because of the speed and powers of evasion inherent in all aircraft, *air fighting* is generally of a brief duration and the results are often indecisive. As a result, pursuit aviation is incapable of controlling the air in the same sense that surface forces can control an area. Air fighting will, therefore, be carried on as necessary to limit hostile air operations.

■ 60. *Air reconnaissance* and *observation operations* are characterized by wide range and great depth, by the excellence and precision of the air photographs taken, and by the rapidity with which information is obtained and transmitted. They are limited by poor visibility, bad weather, antiaircraft fire, and the opposition of hostile combat aviation.

■ 61. All aircraft except balloons are equipped with two-way radio; balloons are able to communicate by telephone with the ground. Other means of communication between air and ground are dropped and picked-up messages, pyrotechnics, flares, and other visual signals.

■ 62. Much of the equipment pertaining to aircraft is of a complex and highly technical nature; its operation requires highly trained combat crews; its maintenance and repair require mechanics with specialized skill. As a consequence, all aircraft need constant care and maintenance and are vulnerable to air attack both in flight and on the ground. The fatigue of combat crews and the repair and reservicing of equipment and matériel require all aviation units to operate from air bases where the necessary facilities are provided for rest, replacement, maintenance, and repair.

The frequency of engagements of the elements of an aviation unit depends upon the urgency of the situation and the demands already made on the particular unit. It is essential that aviation units be conserved in their employment during less active periods of operations so that crews and equipment may be pushed to the limit of endurance during critical phases of operations.

■ 63. Air bases, suitably located, are essential for the operations of combat aviation. Without a suitable air base from which to operate, combat aviation soon becomes impotent.

An *air base* is an Air Corps command which comprises the landing facilities and the installations for shelter, supply, maintenance, and repair that are necessary to sustain the operations of combat aviation. Such a base will, as a rule, cover a considerable area. Its security requires a wide distribution of base facilities and installations and adequate means for their protection.

PROPERTY OF U. S. ARMY

■ **64. The basic administrative and tactical unit of the Air Corps is the squadron. The group, composed of two or more squadrons, is the principal tactical unit and contains all the essential elements necessary for operation, maneuver, and combat. The next higher Air Corps unit is the wing which may consist of two or more types of aviation but will rarely, if ever, operate tactically as a unit in the air.**

Military aviation is assigned to GHQ, to oversea departments, to large units (division and larger units), and to the zone of the interior or other important areas.

■ **65. GHQ aviation (see par. 6) comprises:**

Striking forces **which operate as strong offensive air units to extend air operations to a great distance from their operating bases.**

Defense forces **which provide the necessary antiaircraft defense of the most vulnerable and important areas of the zone of the interior.**

Support forces **which operate in direct support of the operations of the ground troops.**

Special forces **which meet the requirements for air operations in coastal defense and similar operations in minor theaters.**

■ **66. The *aviation* assigned to an *oversea department* conducts whatever air operations may be required incident to the application of the defense plans of the particular oversea department. It may be reinforced by GHQ aviation which then operates under the control of the department commander until returned to GHQ control.**

■ **67. The *aviation* organically assigned to *large units* is generally limited to reconnaissance, observation, and liaison types, suitable in range and speed to the missions to be executed. The organization of these Air Corps units is determined on the basis of the estimated minimum requirements in aviation of the several large units. When greater strength in aviation is required for any particular operation, the increase is provided by attaching additional units. A portion of GHQ aviation may be attached to or placed in support of larger units, the size and composition of such support forces depending upon the task or mission to be executed.**

■ 68. The *aviation* assigned to the *zone of the interior* comprises training and special purpose aviation and such other Air Corps units and establishments as are required for effective mobilization and training, and for replacement and maintenance of aviation in the theater of operations. A portion of GHQ aviation (defense forces, see par. 65) may be assigned for antiaircraft defense in the zone of the interior.

■ 69. The organization for combat of the aviation of a command is a function of the commander; each chief of aviation (air officer in the division) acts as adviser to his commander in the performance of this duty. This organization for combat is based on the consideration of the characteristics and the amount of aviation available, and a study of the air operations to be conducted in accordance with the situation. The organization should be such as to constitute a suitable task force to accomplish the mission, and render command, tactical control, communication, and supply most effective.

■ 70. The selection of objectives against which air operations are to be directed is of vital importance. Air operations must be pushed with energy and dispatch, using every opportunity to take full advantage of surprise. Since the replacement of flying personnel and equipment is both slow and expensive, economy of force is especially important (see par. 62). Combat aviation should be employed in mass against objectives of decisive importance for the accomplishment of the mission of the field forces, and not dispersed or dissipated in operations of minor or secondary importance.

Air operations beyond the sphere of action of the ground forces are undertaken in furtherance of the strategical plan of the commander of the field forces. These operations are discussed in FM 100–15.

■ 71. Combat aviation placed in support of large units operates to further the mission of the supported command. The superior commander under whom such support aviation is operating is responsible for the assignment of air missions or objectives, and for its employment within or beyond the sphere of action of ground forces.

In general, the greatest effectiveness of military aviation is secured through centralized control. When decentraliza-

tion of support aviation becomes necessary in situations requiring immediate tactical support of specified units, the superior commander attaches to or places a part or all of his support aviation in support of a specified large unit so that it may act with greater promptness and better understanding in meeting the requirements of the supported unit.

■ 72. In the hands of higher commanders, *support aviation* constitutes a powerful means for influencing the course of combat after the ground forces have become engaged. The increased application of motorization and mechanization extends the possibilities for air attack. The difficulty of gaining fire superiority over a well-organized defense points to an increasing need of air attack in support of ground troops, especially in critical situations when the available means of support on the ground are inadequate.

The hostile rear area is the normal zone of action of support aviation since operations in this area permit the full utilization of striking power against concentrated targets with the minimum losses and the maximum results. Ordinarily, the most effective results will be obtained from bombing attacks launched at altitudes above the effective range of ground weapons. Support aviation usually is not employed against objectives which can be effectively engaged by available ground weapons within the time required.

CORPS OF ENGINEERS

■ 73. The *Corps of Engineers* is essentially skilled in all work of construction in the field designed to increase the combat effectiveness of troops, facilitate their movement, and hinder the movement of the enemy.

Engineers contribute to the mobility of ground troops by the repair and maintenance of the routes of communication and the elimination of obstacles to movement; they impede the movement of hostile forces by the execution of demolitions and the creation of obstacles. They increase the combat power of other arms by technical assistance in the construction of protective works by furnishing them with the necessary supplies and matériel for the execution of field fortifications, and by the construction of works requiring special equipment and training.

Engineer troops assist in maintaining the effectiveness of troops by making the necessary provisions for their shelter and water supply, together with the incidental installations (except signal communication); they operate all utilities of general service to the troops except such as are specifically assigned to the services. They make and supply maps, air photographs, and map substitutes.

74. One of the most important engineer missions is the construction, improvement, and maintenance of routes of communication and movement. Upon the successful execution of this mission depend, in large part, the mobility of the field forces and their power of maneuver. Broad prevision of the scope of operations, careful planning, and the timely supply of the necessary matériel and labor are essential preliminary measures. Progressive reconnaissance must continue throughout the course of operations.

Of equal importance is the mission of hindering enemy movement. The mobility inherent in motorized and mechanized forces must be countered by an intensive use of military obstacles, natural and artificial. Engineer troops are equipped to execute demolitions by explosives and other means and to erect obstacles of every description. These may consist of hastily erected barriers, such as road blocks and mine fields, or of deliberately prepared zones of obstacles.

75. In principle, each arm is responsible for the execution of the works necessary to its own defense. Engineer troops are employed for the construction of defensive works of a special character and such other works as are essential to the general service of the command. They assist the other arms in the siting and construction of defenses, and supply the necessary engineer tools and material therefor. The siting and construction of rearward defensive positions are frequently delegated to the engineers.

76. Engineer troops are classified as *general* and *special*.

General engineer troops include divisional combat engineer units, and the general service regiments and separate battalions of larger units. Their duties are, in general, in the nature of a pioneer service and cover a wide field.

Special engineer troops include topographic, camouflage, railway operating, water supply, ponton, dump truck, depot, and shop units. They perform engineering duties which require specialized technical training and equipment. Most of these units are assigned to armies and to the communications zone. The requirements of units lower than the army are met by the attachment of special engineer troops or by the execution of the work under the direction of army headquarters.

■ 77. In principle, the engineers assigned to any large unit are responsible for such route improvement and construction, including bridging, as are necessary to facilitate the movement of the troops and transportation of that unit. Work of a more permanent nature and construction required for the passage of heavier loads than the maximum included in the composition of the leading units are undertaken by the engineers of higher units in order that the advancing troops may not be deprived of the services of their own engineers.

■ 78. As a rule, the best results are obtained when engineer troops operate under centralized control. They may, however, be attached to a subordinate unit when their work is intimately associated with the operation of that unit, or when distance and insufficient communication make direct control by the superior command difficult. Economy of time, personnel, and materials usually requires that engineer work be limited to bare necessities. In general, each unit to which engineers are assigned or attached performs only such engineer work as is essential to the operations of that unit; heavier or more elaborate engineer tasks are performed by the engineers of higher echelons.

■ 79. The elementary unit of combat engineers is the platoon which is the smallest unit to which engineer equipment and the means for its transportation are organically assigned. Larger combat engineer units are so organized and equipped as to meet the general engineering needs of the unit to which they are assigned and to make available suitable groups for attachment to its component units. Engineer units are given at least the same degree of mobility as the units to which they are assigned.

80. While the presence of other troops usually affords some security, engineer units are required to provide for their own immediate protection. For this purpose they are armed with the rifle. In an emergency, engineer units may be used as a combat reserve.

SIGNAL CORPS

81. *Signal Corps* troops have the combat mission of providing the signal communication of the large unit to which they are assigned. They are immediate agencies of the commander in whose services they provide channels of signal communication and transmit and receive orders, reports, and other messages.

82. *Wire* transmission (telephone, teletype, and telegraph) constitutes the basic means of signal communication. Other means of communication supplement and extend the service of the wire circuits.

Radio transmission is especially useful during movement in spanning great distances and in communication between air and ground. It is subject, however, to hostile interference and interception, and must often be silenced for tactical reasons or restricted because of congestion of frequency bands.

83. Signal troops install, maintain, and operate the signal communications which constitute the framework of the communication system of the field forces. The control points of this framework are the *command posts* (*message centers*) and *advanced message centers* of the large units. The system of signal communication thus defined is known as the *command system.*

84. The organization of signal units is adapted both to their technical employment and to their distribution for the execution of their various missions. Signal troops assigned to divisions, corps, and armies comprise *construction units* for the installation of wire circuits; *operating units* for the operation of message centers, messenger service, and wire, radio, and visual communication; and *supply units* for the supply of signal equipment. In addition, signal troops assigned to armies include units for employment with the signal *intelligence*, *photographic*, and *pigeon* service of the army.

■ 85. The *signal intelligence service* is charged with the interception of enemy wire and radio traffic, the location of enemy radio stations and airplanes by radio direction finding, the location of unauthorized radio stations, and with all matters pertaining to the preparation and solution of codes and ciphers. It is also the agency charged with the duty of intercepting the radio traffic of our own stations in order to safeguard against violations of radio procedure and of regulations governing the use of codes and ciphers.

■ 86. The Signal Corps exercises technical supervision over the entire signal service of the field forces. It supplies other arms and services with the technical equipment required for the installations of their own systems of signal communication.

■ 87. Technical control and coordination of the employment of signal communication in the field forces require the early issue of signal operation instructions. These instructions are prepared by the signal officer of the unit and are issued by authority of the unit commander prior to entry into action.

CHEMICAL WARFARE SERVICE

■ 88. While the Chemical Warfare Service is not classed as an arm, chemical troops supplement the arms in employing chemical agents. Chemical troops are employed to perform tasks for which they are especially trained and equipped.

■ 89. Chemical regiments, completely motorized, are assigned to the GHQ reserve. They are allocated to armies and lower units as the situation requires. They are profitably employed in large scale chemical operations during the preparatory phase of an operation by corps and higher units. For important chemical operations, chemical units ordinarily are held under control of the commander ordering the operation. In giving smoke support they may be attached to divisions or lower units.

CHAPTER 3

CONDUCT OF WAR

GENERAL PRINCIPLES

■ 90. The *conduct of war* is the art of employing the armed forces of a nation in combination with measures of economic and political constraint for the purpose of effecting a satisfactory peace. It is based on the skillful adaptation and application of the technique of modern science. New means are always giving it a different form. These developments must be anticipated, and their influence must be correctly evaluated and promptly exploited.

■ 91. The *ultimate objective* of all military operations is the destruction of the enemy's armed forces in battle. Decisive defeat in battle breaks the enemy's will to war and forces him to sue for peace which is the national aim. To attain this ultimate objective one or more *intermediate objectives* may have to be determined. These objectives must be well defined and must contribute toward the attainment of the ultimate objective.

■ 92. The situations that arise in war are numerous. They are subject to sudden and frequent change. Frictions and mistakes are common occurrences. Since the enemy is also free to act, situations seldom develop as expected. (See par. 181.) Imponderable factors often exercise a decisive influence. While certain principles, deduced from experience, serve as a useful guide, their application varies according to circumstances.

■ 93. Concentration of *superior forces*, both on the ground and in the air, at the decisive place and time, creates the conditions most essential to decisive victory and constitutes the best evidence of superior leadership.

The necessity for concentrating the greatest possible force at the point of decisive action 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.

■ 94. Only through *offensive* action can a commander exercise his initiative, preserve his freedom of action, and impose his will on the enemy. A *defensive* attitude may, however, be deliberately adopted as a temporary expedient while awaiting an opportunity for counteroffensive action, or for the purpose of economizing forces on a front where a decision is not sought.

In the offensive, the commander must focus his attention on the objective; in the defensive, on the front of greatest danger. In campaign, offensive action is occasional and for a limited period of time. Success comes from the ability of the commander to select the right time and place for offensive action.

Numerical inferiority does not necessarily commit a command to a defensive attitude. Superior hostile numbers may be overcome through greater mobility, more effective fire, higher morale, and better leadership. Superior leadership often enables a numerically inferior force to be stronger at the point of decisive action.

A strategically defensive mission is frequently most effectively executed through offensive action. It is often necessary for an inferior force to strike at an early moment in order to secure initial advantages or to prevent itself from being overwhelmed by a growing superiority in the hostile forces.

■ 95. *Unity of effort* is necessary to apply effectively the full combat power of the available forces. It is obtained through *unity of command*. Where this is impracticable, dependence must be placed upon *cooperation*.

■ 96. Whenever practicable, combat action should be based upon the effect of *surprise*. Surprise finds the enemy in a state of moral and material unpreparedness, prevents him from taking effective countermeasures, and often compensates for numerical inferiority of force. Surprise is sought not only in the initial stage of action but also throughout the action and by every echelon of command. Surprise applies to fire as well as to movement.

The effect of surprise is dependent upon rapidity of maneuver, the efficiency of counterinformation measures, and the

effectiveness of the means employed to deceive the enemy as to our own dispositions and intentions. It must be reinforced and exploited by fire superiority.

The effect of surprise is furthered by variation in the means and methods employed in combat. Fixed methods of procedure enable the enemy to estimate the character and object of an operation.

■ 97. The necessity for guarding against surprise requires adequate provision for the *security* and readiness for action of all units.

Each unit takes the necessary measures for its own local security as soon as the next higher unit has developed for action.

Provision for the security of flanks is of especial importance in combat.

■ 98. The task assigned to any unit must not involve a complicated maneuver. *Simple* and *direct* plans and methods are alone practicable in war. Simple action, promptly and thoroughly executed, is the best guarantee of success.

LEADERSHIP

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

■ 100. The *conduct* of the average man in battle is governed more by instinct than by reason. By instinct he is gregarious and prefers to fight in the group. He is beset with fear of the unknown, especially at night and when alone, and therefore seeks security in the group. He readily accepts symbolic ideals implanted by tradition and national culture and will fight for these ideals when he is aroused. His instinct of self-preservation will induce him to flee from danger but he is deterred from flight by the disgrace he feels in the eyes of his comrades. He wants to earn their respect and esteem as measured by the standard of military conduct accepted by

the group. In the training of the individual soldier, the essential considerations, therefore, are to integrate the individual into a group and to establish for that group a high standard of military conduct and performance of duty.

■ 101. War places a severe test on the *moral stamina* and *physical endurance* of the individual. It is not sufficient that he be well armed and equipped. Not only must the individual soldier be physically hardened, but he must be qualified to march, to use his weapons, and to care for himself and his transportation in the field.

The individual soldier must be fortified by *discipline* which is based on a high ideal of military conduct. This discipline must cause every man to have a horror of the disgrace that will be visited upon him and his unit if he succumbs to fear and endangers his comrades. An endeavor to dominate the instinct of self-preservation by the fear of a greater terror is resorted to only in extreme cases and then primarily for its salutary effect on the members of the group. As a rule it is far better to dominate demoralizing influences by inculcating in the individual a proper sense of duty, a conscious pride in his unit, and a feeling of mutual obligation to his comrades in the group. (See par. 106.)

■ 102. In spite of the advances in technique, the worth of the *individual* man is still decisive. His importance has risen due to the open order of combat. Every individual must be trained to exploit a situation with energy and boldness, imbued with the idea that success will depend upon his action.

The dispersion of troops in battle caused by the influence of modern weapons makes control more and more difficult. Modern combat, therefore, requires more than ever a strong cohesion within a unit in order to give it a *sense of unity*. This cohesion is promoted by good leadership, pride in the accomplishments and reputation of the unit, and by mutual confidence and comradeship among its members.

■ 103. *Troop leading* 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. (See par. 178.)

104. Troops are strongly influenced by the example and conduct of their commissioned and noncommissioned leaders. Will power, self-confidence, initiative and disregard of self will enable a leader to master the most difficult situation. A bold and determined leader will carry his troops with him no matter how difficult the enterprise. Mutual confidence between the leader and his men is the surest basis of discipline in an emergency. 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.

105. The *combat value* of a unit is determined by the soldierly qualities of its leader and members and its "will to fight." An outward mark of this combat value will be found in the set-up and appearance of the men, in the condition, care, and maintenance of their weapons and equipment, and in the readiness of the unit for action. Superior combat value will offset numerical inferiority. The greater the combat value of the troops, the more powerful will be the blow struck by the commander. Superior leadership combined with superior combat value of troops constitutes a reliable basis for success in battle.

106. A hastily or poorly trained unit is likely to fail in a critical moment due to demoralizing impressions caused by unexpected events in combat. This is particularly true in the first engagements of a unit. Therefore, training and discipline are of great importance. Every leader is obliged to take energetic action against indiscipline, panic, pillage, and other disruptive influences. *Discipline* is the cohesive force that binds the members of a unit and its strict enforcement is a benefit for all. Its constraint must be felt not so much in the fear of punishment which it evokes as in the moral obligation it imposes on the individual to heed the common interest of the group. (See par. 101.)

■ 107. 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 will then be able to judge their needs and combat value. A commander who unnecessarily taxes the endurance of his troops will only penalize himself. The expenditure of combat strength must be in proportion to the objective to be attained. Impossible demands only undermine the morale of troops and destroy their confidence in the leader.

Comradeship among officers and men is to be fostered by every available means. 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.

■ 108. A willingness to accept *responsibility* is the foremost trait of leadership. This willingness should not, however, manifest itself in a disregard of orders on the grounds of probably having a better knowledge of the situation than the higher commander. Independence must not be confused with personal caprice.

Officers and men of all grades are expected to exercise a certain independence in the execution of tasks assigned to them and to show initiative in meeting situations as they arise. *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 choice of the means.*

■ 109. A wise and capable commander will see that the men assigned to the component groups of his unit are compatible and that the composition of the groups is changed as little as possible. He will provide each group with a leader in whom its members have confidence. He will so regulate the interior economy of the unit that all groups perform the same amount of work and enjoy the same amount of leisure. 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.

■ 110. Good morale and a sense of unity in a command cannot be improvised; they must be thoroughly planned and systematically promoted. They are born of just and fair treatment, a constant concern for the soldier's welfare, thorough training in basic duties, comradeship among men, and pride in self, organization, and country. The establishment and maintenance of good morale are incumbent upon every commander and are marks of good leadership.

CHAPTER 4

COMMAND AND STAFF

COMMAND

■ 111. *Command* is the authority which an individual in the military service lawfully exercises over subordinates by virtue of rank or assignment. This authority is commensurate with the individual's responsibility, and must be sustained as long as the subordinate fulfills his lawful responsibility.

Command and *leadership* are inseparable. Whether the command be large or small, and whether the exercise of the functions of command be complex or simple, the commander must be the controlling head; his must be the master mind, and from him must flow the energy and the impulse which are to animate all under him.

■ 112. The commander should have three conceptions ever before him: the *moral* and *physical* state of his command as a whole, the *material conditions* under which he is operating, and the *capabilities of the enemy*. A good commander avoids subjecting his troops to useless hardships; he guards against dissipating their combat strength in inconsequential actions or harassing them through faulty staff management.

■ 113. In the exercise of his command functions, the commander should keep 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

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needs. He should promptly extend recognition for services well done, lend help where help is needed, and give encouragement in adversity. Nevertheless, he should not hesitate to exact whatever effort is necessary to attain the desired end. Considerate and devoted to those whom he commands, he should be faithful and loyal to those who command him.

■ 114. Commanders inspire confidence in their subordinates primarily by their ability to gain material advantage over the enemy with the least losses. A reputation for failure in a leader destroys morale. The morale of a unit is that of its leader; it is not defeated until he is defeated.

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

■ 116. All the troops assigned to the execution of a distinct mission should be placed under *one command*. So long as the commander can exercise effective control, he does not decentralize. Centralized control is indicated in the initial stages of an action, in more deliberate operations, or when powerful and concentrated action is desired. In the later stages of an action, in rapidly changing situations, when communications function with difficulty, or when visibility of the terrain is restricted, a certain degree of decentralization becomes necessary. As far as practicable, a commander retains the power to resume centralized control should this become necessary.

■ 117. All *orders* and *instructions* from a higher to a subordinate unit are given to the commander thereof, and all orders and instructions for any element or elements of a subordinate unit emanate from the immediate commander of such unit. By this means alone are authority and responsibility definitely fixed and the channels of command definitely established.

Decision as to a specific course of action in any given case is the responsibility of the commander alone and presupposes an analysis by him of pertinent facts and factors. It is the task of the staff to furnish the commander with such information, data, and advice as he may require in reaching his decision. It is also the *function of the staff* to elaborate the details necessary to carry the decision into effect. (See pars. 121 and 188.)

Personal conferences between the higher commander and the subordinates who are to execute his orders may at times be advisable, in order that the latter may arrive at a correct understanding of the plans and intentions of their superior, and may correctly interpret the orders issued. However, the purpose of such a conference is neither to criticize the orders or plans of the higher commander nor to influence the latter's action. The commander issuing the order cannot share the responsibility therefor with any of his subordinates. The decision, no matter how arrived at, is his alone.

■ 118. A commander of a subordinate unit cannot plead absence of orders or the nonreceipt of orders as an excuse for inactivity in a situation where action on his part is desirable, or where a change in the situation upon which the orders issued were based renders such orders impracticable or impossible of execution. If the subordinate commander understands the general plan and knows the end in view, lack of initiative on his part is inexcusable. (See par. 108.)

STAFF

■ 119. The *staff* assists the commander in the exercise of his command functions.

The staff may be subdivided into two groups—(1) the *general staff* and (2) the *special staff*. In large units these two staff groups are separate and distinct; while in smaller units they merge into each other, and one staff officer frequently is charged with duties pertaining to both staff groups.

■ 120. The *chief of staff* (executive in small units) renders professional aid and is the personal representative of the commander. He assists the commander in the supervision

and coordination of the command, and should enjoy his complete confidence and a considerable degree of independence in the performance of his duties. He is responsible for the working of the whole staff, and, under the orders of his commander, for the control and coordination of the operation of the troops. His powers of supervision, coordination, and control in the commander's name are coextensive with this responsibility and are exercised to the extent deemed necessary to its discharge. He directs the activities of the staff so as to relieve the commander of details.

■ 121. The *general staff* is a closely coordinated group of assistants to the commander, organized so as to comprehend the essential functions of command. Its duties are to render professional aid and assistance to the commander; to prepare detailed instructions for the execution of his plans and to supervise their execution; and to act as his agent in harmonizing and coordinating the plans, operations, and activities of the various units and agencies of the command. (See pars. 117 and 188.)

In large units, officers of the General Staff Corps are assigned to the general staff group while in smaller units the duties are performed by officers of the arm or service to which the unit belongs.

The general staff of a unit is organized into four or more subdivisions comprising the principal functions of command as follows: personnel, military intelligence, operations and training, and supply. In large units each of these subdivisions is headed by an assistant chief of staff who supervises the activities of his group in the name of the commander and solely with a view to unity of command.

■ 122. The *special staff* includes those officers of the various arms and services who may be assigned to a headquarters for technical, supply, and administrative purposes. Certain of these officers have no duties other than staff duties, while others have staff duties in addition to their primary functions as commanders of combat or service troops. It is the duty of each special staff officer to keep the commander and the general staff group constantly informed as to the conditions and capabilities of his particular arm or service.

123. For operations in the field, a staff is usually organized into two echelons or parties, one of which accompanies the commander. (See pars. 210 and 230.) The efficient operation of a staff depends largely on its proper functional organization and the distribution of work and cooperative spirit among its members. (See SOFM.)

124. To insure effective coordination *liaison officers* are often sent to subordinate and adjacent headquarters. They seek to learn the instructions and plans of the commander to whom accredited, and present their own commander's views concerning the situation and the conduct of operations.

Liaison officers are habitually sent from supporting to supported units. They act as advisers on the staff of the commander of the unit to which sent on matters concerning the supporting arm.

A liaison officer assists in keeping his own commander currently informed of the progress of the operations together with his impressions thereof. He does not return to his headquarters or unit until his mission is fulfilled or an immediate personal report becomes necessary. The presence of a liaison officer does not relieve a subordinate commander of the duty of keeping his superior informed of the situation through normal channels.

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

The organization, functions, and duties of the various divisions and sections of the general and special staffs of large units, and the corresponding staff subdivisions of smaller units are prescribed in SOFM.

CHAPTER 5

INTELLIGENCE AND COUNTERINFORMATION

INTELLIGENCE

■ 126. In order to plan and conduct operations, as well as to guard against surprise, a commander should know as much as possible about the theater of operations and particularly about the enemy's capabilities. The information on which this knowledge depends is gathered from many sources of varying credibility. Before information can be accepted, it must be studied, conflicting items weighed against each other, and the whole evaluated dispassionately. It then becomes *intelligence.*

From reliable and adequate military intelligence the commander is able to draw logical conclusions as to what possible lines of action are open to the enemy. Military intelligence is thus an essential factor in the estimate of the situation.

Information of the enemy will always be incomplete. The commander will have to take calculated risks; to postpone action on the plea of waiting for complete information encourages indecision and may result in lost opportunity.

■ 127. The information initially obtained concerning the enemy and the theater of operations is derived from War Department peacetime *intelligence studies.* This information is supplemented by more recent data obtained in the field by such means as air and ground reconnaissance and observation; troops in contact with the enemy; artillery intelligence sections; aircraft warning service; inhabitants, repatriates, deserters, prisoners, and agents; captured documents and equipment; interception of enemy communications; and enemy and neutral press and broadcasts.

In the combat zone commanders will be interested primarily in the following information about the enemy: Whether there are any enemy forces in a specified area at a particular time; the line of contact and the identification of the enemy's front line units; the location, size, and movements of hostile main forces and reserves; and whether the enemy is advancing, holding his position, or retiring.

Military intelligence procedure, functions, and organization are covered in detail in BFM, volume X.

■ 128. It is the duty of the commander to coordinate the action and to maintain a continuing supervision over all the information collecting agencies at his disposal in the search for *essential information*. The orientation of this search for information is assured by an *intelligence plan* which indicates the items of information of vital importance to the commander in the execution of his plan of action and in the security of his command. Based on these essential elements, instructions for the collection of the items of information are issued to the subordinate agencies, or requests are made on the higher and adjacent units. In small units, such instructions may be included in the field order; in large units they may be issued in the form of an *intelligence annex* (see BFM, vol. X, and SOFM).

In performing his duty of coordination and supervision of his collecting agencies, the commander is assisted by the *intelligence section* of his staff. The intelligence section recommends the detailed missions for the collecting agencies; collates, evaluates, and interprets the information received; and disseminates the resulting military intelligence to subordinate, adjacent, and higher units in the form of periodic reports as ordered by the commander. (For form of intelligence report, see SOFM.) It keeps the commander and interested staff officers informed of the enemy situation and of the deductions relative to the enemy's capabilities. When possible, it estimates the relative probability that the enemy will adopt certain lines of action.

■ 129. Information incorrectly interpreted and evaluated, or inaccurate or incomplete information, may lead to unsound conclusions. Therefore, the search for information by all echelons of the command must be unremitting and its evaluation must be logical.

Items of information that appear unimportant to a collecting agency may attain significant importance to a higher echelon when considered in conjunction with other information. On the other hand, unnecessary reports encumber the means of communication and may have a disturbing influence

on the commander. First contact with the enemy is always reported; new identifications are sent in by the most rapid means of communication available. It may be desirable to report confirmation of important items of enemy information. The effectiveness of a collecting agency is measured by the content and reliability of its reports rather than by their number.

Negative information, such as a report that a certain locality was not occupied by the enemy at a specified hour, is frequently important; likewise, confirmation of the information that the situation has remained unchanged during a specified period of time.

All agencies of a command are responsible that their immediate commander is promptly and fully informed of the situation. Adjacent units habitually exchange pertinent information.

■ 130. Front line troops are frequently so closely engaged in combat that they are unable to report as often as desired by the higher commander. Commanders make provision for obtaining prompt information by special reconnaissance and by sending liaison officers to subordinate or adjacent units. These provisions do not relieve subordinate commanders from making every effort to keep their superiors fully informed of the situation. (See par. 124.)

■ 131. During pauses in combat, or whenever the situation demands, subordinate commanders make brief reports on their own and the enemy situation to higher headquarters. At the conclusion of a phase of combat a concise report is made without delay stating what hostile troops are opposed, the line of contact, the enemy's attitude, the situation of our own troops including effective strength, and the status of supply, especially of ammunition.

■ 132. The best information will be of little use if it arrives too late at the headquarters for which it is intended. Orders for reconnaissance should indicate the time by which a report is desired by the commander or the intervals at which reports are to be made. Whether or not information arrives in time usually depends on the measures taken for its transmission.

In a critical situation, reports are made to the next higher commander and to adjacent units in immediate danger by the most rapid means of communication available.

COUNTERINFORMATION

■ 133. The success of operations and the security of the command depend to a large extent upon the effectiveness of measures taken to prevent the enemy from gaining information relative to our dispositions, movements, and plans. It is therefore the duty of all ranks to prevent leakage of information to the enemy.

Counterinformation measures comprise counterespionage, censorship, counterreconnaissance, night movements, the use of covered approaches and camouflage, the enforcement of secrecy discipline, and the observance of secrecy measures in the preparation and execution of plans of operations.

■ 134. The intelligence agencies of the several units control the *censorship* and *counterespionage* service in a theater of operations and maintain general supervision over all *secrecy measures*. In hostile territory the movements of inhabitants are strictly controlled; possession is promptly taken of radio, telegraph and telephone establishments, and other means of communication; and newspapers and postal communications are suppressed or censored.

Counterreconnaissance cannot be relied upon for complete protection from enemy observation and should therefore be supplemented by appropriate secrecy measures, including night marches, camouflage, and the use of cover to conceal the location of troops by day.

Secrecy discipline requires that all ranks refrain from discussing the military situation, plans, movements, etc., in the presence of civilians. Every soldier must be instructed that in case of capture he is required to give only his true name, grade, and Army serial number, and that any other information may prejudice the success of operations and endanger the lives of his comrades. Signal communication will be closely supervised to insure compliance with the regulations relative to the transmission of information and instructions. Only those orders, documents, or maps absolutely indispen-

able to operations will be taken into action, and every effort will be made to destroy all such papers when there is a risk of capture.

135. Special precautions are taken in the preparation of plans of operations to avoid their premature disclosure. In the various phases of their development only so much is communicated to subordinates as is necessary to the efficient execution of assigned missions. For reasons both of secrecy and of simplicity, it is generally undesirable that the operation orders of any unit reproduce in their entirety the provisions of the orders of superior units. (See par. 130.) Special precautions are taken in the safeguarding and transmission of secret and confidential documents. (See AR 380–5.)

136. Counterinformation is supplemented by positive measures designed to deceive or mislead the enemy as to our dispositions and intentions.

CHAPTER 6

RECONNAISSANCE

GENERAL PRINCIPLES

137. *Reconnaissance* is the operation of obtaining information in the field by troops sent out for that purpose. The information concerns the enemy, the terrain, and the resources of the theater of operations.

It is executed in conformity with the principle that contact with the enemy must be gained at the earliest practicable moment and once gained is never lost.

Depending on the location of the objective and the phase of operations, reconnaissance is classified as distant, close, and battle reconnaissance.

138. *Distant* reconnaissance is the mission of the aviation and the large cavalry units of the field forces. It procures the information upon which the strategical and operative decisions and the plans of the high command are based. The information gained by the medium and long-range reconnaissance aviation of the army and higher command enables

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the commander of the field forces to give the proper orientation to the reconnaissance activities of the cavalry. Distant reconnaissance is dealt with in FM 100–15.

■ 139. *Close* reconnaissance begins as the opposing ground forces approach contact. It furnishes the commander with the information upon which he makes his tactical decisions, and constitutes the basis for engagement with the enemy. Close reconnaissance is executed by the aviation and cavalry assigned to large units and by reconnaissance detachments of other arms which supplement the general reconnaissance of the aviation and cavalry. The forces employed in close reconnaissance may vary in strength from a single observation airplane or patrol to a force composed of all arms.

■ 140. *Battle* reconnaissance includes the continuous observation of the activity of all enemy forces engaged in combat or in immediate contact with our principal forces both before and after battle. It aims chiefly to obtain information relative to the combat value and tactical disposition of the enemy and the possibilities of the terrain and fire. Battle reconnaissance is executed by all arms.

■ 141. Due *economy of force* is observed in the assignment of reconnaissance missions. Effective reconnaissance requires concentration of the available means against objectives of decisive importance. In other directions the means employed are reduced to the absolute minimum requirements.

Depending on the situation, some reconnaissance elements are held available in reserve to reinforce or extend the reconnaissance in progress of execution, or to project reconnaissance in a new direction.

■ 142. The commander coordinates the employment of the reconnaissance agencies at his disposal by formulating a well-conceived *plan of reconnaissance.* Duplication of effort is avoided by the assignment of reconnaissance missions and objectives and by informing subordinates concerning reconnaissances to be executed by agencies of higher commanders.

In the absence of instructions, each unit executes the reconnaissance necessary to its own operations within its own zone of action and toward any unsupported flanks.

■ 143. *Superiority of force* in the zone of reconnaissance facilitates the execution of tactical reconnaissance and makes correspondingly more difficult the reconnaissance activities of the enemy. Superiority is gained by the active and aggressive action of patrols and by the early seizure of important localities and critical terrain lines in the zone of reconnaissance.

In principle, combat is avoided which is not necessary for gaining essential information or superiority over hostile reconnaissance. Essential information can frequently be obtained only through attack. Reconnaissance units do not hesitate to attack when their mission requires it.

If the enemy is superior, the reconnaissance mission is often more easily accomplished by containing the enemy's reconnaissance or security forces in front while pushing reconnaissance around the enemy's flanks.

■ 144. A certain amount of *security* is assured by a successful reconnaissance. Since a security mission ties a force to a definite area, a dual mission of reconnaissance and counterreconnaissance should not be assigned to the same force. If this is unavoidable, the instructions must state explicitly which mission has priority.

When it is of especial importance to screen the dispositions of our own troops from hostile investigation, the necessary forces are assigned to counterreconnaissance missions on the indicated front or flank (see pars. 168–174).

■ 145. A commander regulates the employment of the available reconnaissance agencies in such a manner that they will supplement and assist one another. Until battle reconnaissance is begun, the principal reconnaissance agencies available are his reconnaissance aviation and the cavalry reconnaissance units, horsed and mechanized.

Under favorable conditions, *reconnaissance aviation* can furnish early information of the enemy's general dispositions and movements to a considerable depth in rear of his security forces. It is also valuable for orienting and directing ground reconnaissance agencies. It cannot, however, provide continuous or detailed information since it is subject to definite limitations of inclement weather, darkness, covered terrain, antiaircraft fire, and the activities of hostile combat aviation.

Cavalry, on the other hand, cannot obtain a complete picture of the enemy situation to any great depth in rear of the hostile reconnaissance screen. Cavalry needs the cooperation of reconnaissance aviation in order to conserve its combat strength and direct its ground reconnaissance in the decisive direction and area. Cavalry can maintain continuous contact, operate under weather conditions which preclude air reconnaissance, and determine details of enemy activity, strength, composition, and combat value.

■ 146. The indiscriminate mixing of horse and mechanized cavalry units results in a reduction in the efficiency of both. To each is assigned the reconnaissance mission for which it is best suited according to its characteristics.

Reconnaissance units of *horse cavalry* have the advantage of greater mobility across country and freedom of conditions of weather, terrain, and supply. Their speed and range of action are, however, limited. The great value of horse cavalry on reconnaissance missions lies in its ability to determine details of information, to observe the enemy where secrecy is essential, and to establish a closely knit reconnaissance screen.

Mechanized reconnaissance units, because of their road speed, are useful for quickly seizing widely separated and distant localities. Their mobility is comparatively sensitive to terrain and weather. They are dependent upon conditions of roads and weather and the replenishment of gasoline and oil. The great value of mechanized cavalry lies in its ability to execute a distant reconnaissance mission when time is a vital factor, and to establish an extensive reconnaissance screen over a wide area.

■ 147. Reconnaissance missions must be clearly defined. The *essential items of information* desired by the commander and their relative importance must be explicitly stated in his instructions for reconnaissance. (See pars. 127–128, and pt. one, BFM, vol. X.)

The commander regulates the establishment and maintenance of signal communication so as to insure the prompt and reliable transmission of the results of reconnaissance. He coordinates the communication to be used between air

and ground reconnnaissance agencies and between horse and mechanized cavalry units. To enable air reconnaissance to give proper direction to ground reconnaissance, he may find it necessary to establish an *advanced center of information* near the command post of the cavalry unit. When there is danger of hostile interception he may sharply restrict the use of radio in the interest of secrecy or impose a radio silence.

■ 148. Instructions for the execution of reconnaissance are included in field orders or in an accompanying *intelligence annex*. They may also be issued separately, in complete or fragmentary form, as instructions for reconnaissance. (See BFM, vol. X, and SOFM.)

EXECUTION OF RECONNAISSANCE

■ 149. CLOSE RECONNAISSANCE.—As the opposing forces approach their probable zone of contact, the reconnaissance agencies, air and ground, endeavor to determine the contour and identification of the enemy's leading elements, the frontage and depth of the enemy's movement, his assembly positions, the enemy's measures for antiaircraft defense, and the location of his airdromes, detraining stations, and principal supply establishments.

■ 150. On the march in proximity to the enemy, the zone of the corps reconnaissance aviation usually extends to a distance beyond the objective of the command at least equal to the distance of its rearmost combat unit to the objective. Timely reports of hostile motorized and mechanized columns are of especial importance.

The nearer the approach to the enemy, the more intensive is the reconnaissance. More detailed information will be required at points of decisive importance near the probable or actual zone of contact of the ground forces.

■ 151. The primary mission of *air reconnaissance* is to extend in depth the zone under observation by ground reconnaissance and to secure information which will enable ground units to give effective direction to their reconnaissance activities.

The principal objectives of reconnaissance aviation are roads, railroad centers, and exits of woods and villages.

These objectives are closely observed both day and night with a view to discovering the location of the enemy's main forces and their direction of movement. Reconnaissance flights made shortly after dawn and before dark offer a favorable opportunity for discovery of night movements.

■ 152. As a general rule, agreements as to *cooperation* and *direct communication* between air and ground reconnaissance agencies must be made each day prior to the execution of the reconnaissance mission. This agreement is made through the air officer of the command or through an air liaison officer, who must be able to inform the commander of the reconnaissance aviation unit of the routes of advance of the principal reconnaissance detachments, the location of the command post, and the advanced center of information of the higher command; and the location of any intermediate dropping grounds or temporary landing fields.

■ 153. Cavalry units charged with the execution of close reconnaissance regulate their activity by their mission and the activity of the enemy. They usually operate under direction of the corps commander who fixes the reconnaissance tasks to be performed and regulates the distance at which they are to operate in front of the leading divisions.

A cavalry unit assigned to a reconnaissance mission generally details separate forces for the execution of reconnaissance and for its own security.

Zones of reconnaissance are assigned to *reconnaissance detachments* which vary in strength and composition according to the opposition expected and the mission to be executed. Greater strength and a more aggressive mission are given to the detachments operating in the more decisive zones.

When contact with the enemy is expected, the *advance* is made *by bounds* from one terrain line to another. The length of bounds is determined by the road net and the distance apart of the successive critical terrain lines. As the distance to the enemy decreases, the bounds are made shorter.

■ 154. Ground forces assigned to reconnaissance missions secure information chiefly through the use of patrols. *Mechanized cavalry* patrols are used to gain contact with hostile forces reported by air reconnaissance and to seize distant

localities along the main routes leading to the objective. They do not replace the reconnaissance detachments but are means of extending and facilitating the work of these detachments. For rest and security, mechanized patrols when in hostile territory must usually be recalled at night, returning to their unit preferably by routes other than the ones used in the advance.

The commander of a reconnaissance detachment keeps his *mounted patrols* well in hand and at such a distance that he can effectively support their action. This is accomplished in part by a regulated advance to successive terrain lines and by the assignment of close objectives and definite missions. The reconnaissance detachment supports by attack the action of its patrols held up by stronger hostile forces.

■ 155. Reconnaissance detachments which have established contact with the enemy main forces keep them under surveillance through their patrols and follow the enemy's movements. They take advantage of the discovery of gaps between hostile elements to penetrate within the enemy's lines, explore the gap, and reconnoiter the enemy's dispositions.

■ 156. When the distance between the main bodies of the two opposing forces is so reduced that there is no longer room for the operations of reconnaissance detachments, they are assembled under corps control for the execution of the various missions required by the situation, or distributed as *divisional cavalry* to the leading infantry divisions for missions of close reconnaissance.

■ 157. Under the protection of the cavalry reconnaissance detachments, *reconnaissance parties* are sent forward by the *artillery, infantry,* and *engineers* with a view to preparations for their own operations. Their reconnaissance is conducted in connection with that of the *command reconnaissance* of the commander or a designated staff officer. It bears especially on the routes and covered areas available for the development of the command, the terrain obstacles and barriers for antimechanized defense, the defiles requiring antiaircraft protection, the location of suitable position areas for the artillery and covered assembly positions for the infantry, the general location of the zone of resistance for the organization

of the defense or of a covering position to cover the development of the command, and the sources of water supply to be used by the troops.

158. BATTLE RECONNAISSANCE.—Battle reconnaissance commences when the troop columns begin to develop for combat. Provision is made for the further employment of the cavalry in the orders for the development. In case of the withdrawal of the cavalry from the front, reconnaissance zones are assigned to subordinate units of the command.

159. *Corps and divisional cavalry* is employed as required by the situation to cover the flanks of the command, to fill gaps, to hold important localities until relieved, or to execute reconnaissance against the enemy's flanks. It particularly reconnoiters hostile movements in extension of the wings, the existence of any gaps which may develop in the enemy's dispositions, and the location and movement of hostile reserves.

In case no orders are received, corps and divisional cavalry maintains contact with the enemy, executes detailed reconnaissance essential to the development for combat of the leading divisions, and screens the advance of the main columns until forced to withdraw by the enemy.

160. *Reconnaissance aviation* is employed principally in the reconnaissance and surveillance of areas beyond the zone of reconnaissance of front line troops and the corps and divisional cavalry. Its purpose is to obtain for the superior commander the information on which he will base his tactical decisions. The reconnaissance of movements of hostile troops in rear and on the flanks of battle and the surveillance of hostile detrucking points and detraining stations are of especial importance.

161. For *observation* and *liaison aviation*, battle reconnaissance comprises artillery missions, infantry missions, and command and liaison missions. Whenever practicable, the airplane is reserved for missions involving the observation of objectives which are beyond the effective view of observation posts and balloons or are defiladed from their view. The most important employment of the balloon is in observation missions for the artillery.

Artillery missions include the location of artillery targets, adjustment of artillery fire, report of effect of fire, and general surveillance of scheduled artillery fires and enemy activity. Airplanes assigned to artillery missions operate under the direction of the artillery commander.

Infantry missions include the location of the opposing front lines, observation of the progress of combat, location of hostile resistance holding up our advance or of enemy penetrations into our position, and assembly of hostile troops for attack or counterattack.

Command and *liaison missions* include the transmission of information and instructions between the superior commander and his artillery, infantry, and other subordinate commanders, and all observation missions executed for the especial information of the superior commander. They may be ordered for the purpose of obtaining or verifying information as to the situation of the troops engaged or to obtain urgent information when the actual situation is in doubt.

Detailed instructions concerning the methods of identification and communication between air and ground units are contained in the field manuals of the arms.

■ 162. The amount of battle reconnaissance executed by reconnaissance and observation aviation is largely dependent on the air situation. In the assignment of reconnaissance missions, consideration is given to the number of missions that can be effectively executed with the aviation available under the existing air situation.

The methods to be employed in the execution of air reconnaissance and observation are normally left to the decision of the air officer.

■ 163. Close and intensive *battle reconnaissance* by *infantry, artillery* and *engineer* units supplements the battle reconnaissance of the aviation and cavalry. Infantry reconnaissance assumes especial importance when cavalry is lacking or is deficient in strength, and when the conditions of terrain or the proximity of the enemy's main forces preclude the use of cavalry.

■ 164. Orders for the development of a command frequently assign zones of reconnaissance to subordinate units. Each unit becomes responsible for battle reconnaissance within its zone of advance or action. Flank units are likewise responsible for battle reconnaissance on their open flanks.

■ 165. Terrain features that afford an insight into the hostile dispositions constitute especial objectives of reconnaissance. When hostile resistance is encountered which cannot be brushed aside or enveloped, a *reconnaissance in force* constitutes the best means of clearing up an uncertain situation. This applies especially when advanced enemy detachments deny information to our patrols. These patrols must then be reinforced sufficiently to brush aside the hostile detachments, or the main body must take over the reconnaissance in force.

For troops engaged in a reconnaissance in force, the combat action usually consists of a local attack with a limited objective and requires a concentration of means and unity of effort. 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 also be prepared for the eventuality that the reconnaissance may bring on a general engagement.

■ 166. The battle reconnaissance of the several arms is conducted to serve their particular needs. To obtain the full benefit of the results of reconnaissance, careful consideration must be given to the element of time when planning a reconnaissance.

Infantry units cover their front and open flanks by reconnaissance detachments and combat patrols. The mission of these elements is to locate advanced enemy groups, break through the hostile screen, and gain contact with the enemy's principal forces. They also reconnoiter covered routes of approach for the advance of their units into action. After battle, infantry units maintain contact with the enemy by similar means.

Artillery details conduct reconnaissance for the location of objectives, observation posts and firing positions, and the exploration of routes of approach. To expedite their entry

into action, artillery units send forward reconnaissance details under officers with the advanced elements of the command (divisional cavalry, advance guard) on the march. (See par. 157.)

The observation of the combat zone by the observation posts and liaison observers of the artillery is of great value in battle reconnaissance. They are often in a position to give to the higher commander early reports of important combat events concerning which information may be delayed in transmission from front line units.

Engineer parties execute timely reconnaissance with a view to the preparation of the necessary measures for the execution of engineer work. Their most important reconnaissance mission is in connection with antimechanized defense and the maintenance of routes of communication and movement. Upon the successful execution of this mission depend in large part the mobility of the field forces and their power of maneuver. These measures must be supplemented by progressive reconnaissance continuing throughout the course of operations.

■ 167. The methods of reconnaissance employed by the several arms are described in their respective field manuals.

COUNTERRECONNAISSANCE

■ 168. *Counterreconnaissance* includes all measures to screen a command from hostile observation. It is executed principally by the Air Corps, antiaircraft artillery, Cavalry, and security detachments. The commander coordinates the action of all of his counterreconnaissance agencies by assigning to each a mission in accordance with its capabilities.

As a rule, special measures for counterreconnaissance are indicated in any operation where secrecy is important. The later that counterreconnaissance measures are recognized as such by the enemy, the more effectively have they accomplished their purpose.

■ 169. Counterreconnaissance cannot be relied upon for complete protection from enemy observation. It must be supplemented by other measures, including night marches, radio

secrecy, counterespionage, concealment of the forces in woods, villages, and other cover; passive measures of antiaircraft defense; and the use of masks, camouflage, and smoke.

170. *Pursuit aviation,* if available, is employed for counterreconnaissance on fronts where it is important to conceal our own activity from hostile air reconnaissance. It seeks to defeat such reconnaissance by attacking hostile reconnaissance and observation aviation. *Combat aviation* may contribute materially to counterreconnaissance by attacking hostile airdromes.

Due to the inability of our own combat aviation to remain constantly in the air, complete elimination of hostile air reconnaissance cannot be expected; ground forces must in any case take the necessary measures to conceal their movements and dispositions.

171. The operation of combat aviation in counterreconnaissance is supplemented by the action of *antiaircraft artillery* and the weapons of other units. 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.

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

Offensive counterreconnaissance is most effectively executed by the defeat of the hostile reconnaissance forces. The activity of hostile patrols is most completely eliminated by the defeat of the stronger detachments which support them.

Defensive counterreconnaissance is most effective when the screen can be established behind an obstacle which must be crossed by hostile reconnaissance forces. Cavalry forces engaged in defensive counterreconnaissance are, when necessary, reinforced by infantry, chemical troops, and artillery. Infantry is assigned to those sectors where the strongest resistance must be offered. Dummy works have a great de-

ceptive value. Cavalry sends forward reconnaissance detachments which obtain information, attack advanced enemy detachments, or obstruct their operations.

When a broad front must be covered, it will be necessary to resort to *delaying action* as a means of temporarily impeding the operations of hostile reconnaissance forces.

The aviation assists cavalry on counterreconnaissance by attacking hostile aviation attempting to cross the zone of counterreconnaissance and by reporting hostile ground movements, especially the movement of approaching cavalry and motorized units.

■ 173. The *counterreconnaissance screen* established by cavalry may be either *moving* or *stationary*. A *moving screen* is applicable to situations where the movement of a force over a wide front must be screened; a *stationary screen* is used to screen the dispositions or concentration of troops or prevent the enemy from reconnoitering an area.

■ 174. All *security detachments* are charged with the mission of counterreconnaissance. They take the necessary measures to prevent hostile ground forces from observing the main body. They devote especial attention to observation points affording views into its dispositions.

■ 175. A counterreconnaissance mission lends especial importance to the action of the intelligence service of the Signal Corps, to deceptive radio communication, and to strict supervision or complete silence of radio traffic. (See pars. 82 and 85.)

CHAPTER 7

TROOP LEADING

GENERAL PRINCIPLES

■ 176. *Troop leading* is the art of commanding troops in campaign. In general, it comprises the methods employed in fighting and supplying troops in the field and the processes followed in the conduct of operations.

■ 177. The basis of troop leading is the commander's *decision* which is derived from the *mission* and the *situation*. The

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When a broad front must be covered, it will be necessary to resort to *delaying action* as a means of temporarily impeding the operations of hostile reconnaissance forces.

The aviation assists cavalry on counterreconnaissance by attacking hostile aviation attempting to cross the zone of counterreconnaissance and by reporting hostile ground movements, especially the movement of approaching cavalry and motorized units.

■ 173. The *counterreconnaissance screen* established by cavalry may be either *moving* or *stationary*. A *moving screen* is applicable to situations where the movement of a force over a wide front must be screened; a *stationary screen* is used to screen the dispositions or concentration of troops or prevent the enemy from reconnoitering an area.

■ 174. All *security detachments* are charged with the mission of counterreconnaissance. They take the necessary measures to prevent hostile ground forces from observing the main body. They devote especial attention to observation points affording views into its dispositions.

■ 175. A counterreconnaissance mission lends especial importance to the action of the intelligence service of the Signal Corps, to deceptive radio communication, and to strict supervision or complete silence of radio traffic. (See pars. 82 and 85.)

CHAPTER 7

TROOP LEADING

GENERAL PRINCIPLES

■ 176. *Troop leading* is the art of commanding troops in campaign. In general, it comprises the methods employed in fighting and supplying troops in the field and the processes followed in the conduct of operations.

■ 177. The basis of troop leading is the commander's *decision* which is derived from the *mission* and the *situation*. The

mission should be clearly stated and constantly kept in mind by a commander. A multiple mission distracts attention from the principal or ultimate objective.

In campaign, exact conclusions concerning the enemy can seldom be drawn. The commander must make every effort to clarify the situation by reconnaissance. To delay action in an emergency because of insufficient information indicates a lack of energy in troop leading. (See par. 126.) The proper evaluation and utilization of the terrain reduce the disadvantage of a lack of information of the enemy.

■ 178. A *decision* once made is not changed without some compelling reason. In combat the will and energy of the commander must persist until the objective is attained. (See par. 103.) Changed conditions may, however, call for a new decision; too stubborn an adherence to a previous decision may result in failure. The art of troop leading also lies in knowing when to make a new decision. (See par. 189.)

■ 179. Every advantage gained over the enemy increases a commander's freedom of action. A correct evaluation of the terrain and the time and space factors enables a commander to recognize a favorable situation quickly and to exploit it promptly and resolutely. Prompt action deprives the enemy of time to initiate effective countermeasures and exploits any surprise which has been attained. Rapidity of action is increased by favorable conditions of weather, terrain, and road net, by good physical condition of the troops, by adequate means for moving them, and above all by a smoothly working staff.

■ 180. The duration of a tactical operation can seldom be predicted. Successful engagements often progress so slowly that the gains made are not immediately recognized.

Troops are used up rapidly in the decisive phases of combat. This attrition must be anticipated by the commander and he must direct his staff to take timely measures for replacement of men, transport, and weapons, and for replenishment of ammunition and other supplies. Units that have been heavily engaged cannot be depended upon for effective action on a new mission until they have been rested and reorganized.

■ 181. In spite of the most careful planning and anticipation, unexpected obstacles and frictions will arise in combat. A commander must school himself to regard these events as commonplace and not permit their occurrence to frustrate him in the accomplishment of his mission. (See par. 92.)

■ 182. For the control of troops in battle, certain processes in troop leading are essential in order to obtain unity of effort. They are carried out in such detail and with such speed as is permitted by the situation. The guiding principle is that troop leading must expedite and facilitate the effective employment of the troops, and not delay or impede them. (See par. 205.)

In any tactical operation, the first duty of the commander is to evaluate quickly all the available information bearing on his task, estimate the situation, and reach a *decision*. (See pars. 184–189.)

The commander then makes a simple *plan* which does not require too distant an objective and is based on the most effective combination of surprise, fire power, maneuver, and use of terrain. The plan is communicated to subordinates directly by brief, clear, and concise oral *orders*, or to the staff by a *directive* sufficiently complete to enable it to work out the details and issue the orders.

Having issued his orders, the commander should take personal counsel and consider the *future lines of action* that may develop in accordance with the capabilities of the enemy. Based on this study he confers with his chief of staff and orients him as to further plans to be made or measures to be taken in anticipation of future contingencies.

After issuing his orders, the commander places himself where he can best *control* the course of action and exert his *leadership*. His command post affords the advantage of complete communication and control of his unit as a whole. However, when opportunity offers and when his presence at the command post is not urgently required, he *visits* his subordinate commanders and his troops in order to inspire confidence and to assure himself that his orders are understood and properly executed. (See par. 235.) He gives his subordinates appropriate freedom of action so long as this

does not jeopardize his plans. In case of inexperienced or newly organized units a closer supervision is required.

183. A commander exercises the greatest influence on the course of action by the use he makes of his reserve, including such aviation as may be at his disposal, and the measures he takes to concentrate the fire of his artillery and increase the volume of fire of other weapons at the decisive place. The extent to which he can do this will depend largely on the mobility of his reserve, the flexibility of artillery fire, and the adequacy of the ammunition supply.

ESTIMATE OF THE SITUATION—DECISION

184. Before arriving at a decision a commander must make an *estimate of the situation* based on a consideration of all the *factors* bearing thereon. When time is pressing, this estimate requires rapid thinking, simple and logical reasoning, with consideration necessarily limited to the most essential factors. (See SOFM.)

185. In estimating a situation, a commander first considers the *mission* assigned to him, studying its import to be sure that he understands what is required of him. His next step is to study the terrain and weather and gain an appreciation of their influence on the task that confronts him.

A consideration of the conditions affecting his own command will establish the location of his own troops and their availability for combat, the status of their ammunition supply, the physical effort that may be expected from them, the proximity of adjacent or supporting troops and the assistance that may be expected from or needed by them.

From a study of the intelligence reports and other information on hand, the commander estimates the enemy's strength, position, and distribution, his capabilities for movement and combat, and any other factors insofar as they affect the particular situation.

The commander then compares the various lines of action open to him and weighs the prospect of success which they offer. In this connection he must not fail to examine into the capabilities of the enemy to interfere with his plans. *Above*

all, the commander must guard against believing that he has discovered the enemy's intentions. So long as the situation does not clearly indicate the enemy's probable action, it is prudent for the commander to ascribe to the enemy that line of action which will be most harmful to the accomplishment of his own mission.

■ 186. In larger operations such factors as the enemy's road, railway, and signal communication nets, and the activities of the enemy's aviation, antiaircraft artillery, and mechanized forces assume an increasing importance in estimating the enemy's capabilities.

A commander's decision may be influenced by his knowledge of the enemy's leadership, racial characteristics, or methods of combat. However, too much should not be taken for granted unless a reliable index of these factors has been gained through previous combat.

■ 187. Having weighed and compared the various *lines of action* that are open to him, the commander decides upon a *plan* that will best enable him to accomplish his mission. This plan should be clear and simple so as to reduce to a minimum the confusion resulting from misunderstandings and complex orders.

■ 188. In general, it is the function of the staff to furnish the commander with the combat intelligence and such information as he may require in reaching a decision, and to elaborate the details necessary to carry this decision into effect. (See pars. 117 and 121.)

■ 189. The estimate of the situation is a *continuous process* for the commander and his staff, and is subject to revision in accordance with the changes that occur in the situation. This possibility emphasizes the importance of a simple plan (see pars. 182 and 187) which will readily lend itself to a variant to meet the changes in the situation.

If the mission turns out to be inadequate or if the situation on which it is predicated has changed, these altered conditions must be considered by the commander. (See par. 178.) Should he decide to defer his mission or change his line of

action, this fact must be reported to the superior without delay. In any event the subordinate assumes full responsibility for the consequences of his decision. The criterion by which he judges the soundness of his decision is that it will further the intentions of the higher commander. (See pars. 108 and 118.)

ORDERS

■ 190. The authority to issue orders is an inherent function of command. (See par. 111.) It is exercised by a commander to give effect to his decisions.

■ 191. The orders issued by a commander come under two categories:

a. Those which regulate the discipline, welfare, interior economy, and daily life of a command. They include *general* and *special orders*, *bulletins*, and *circulars*. Due to their standing nature and wide distribution, these routine orders are printed or mimeographed. They are governed by AR 310–50.

b. Those orders or instructions of any kind which pertain to operations in the field. Their object is to regulate the operative and tactical action of troops in accordance with the intentions of the commander. They include *field orders*, *administrative orders*, and *letters of instruction*. For instructions governing field and administrative orders, see SOFM. Letters of instruction deal with the strategical phases of operations of larger units and regulate operations over a large area for a considerable period of time. (See FM 100–15.)

■ 192. Orders may be *written*, *dictated*, or *oral*. Those of smaller units are usually dictated or oral.

Written orders of large units are issued in the form of typed or duplicate copies. Very often their context is dictated over the telephone or dispatched by some other technical signal means, in which case a written copy is transmitted by messenger.

Oral orders transmitted by telephone or messenger are required to be repeated. The content of important oral and dictated orders is made of record by the headquarters of issue.

■ 103. The time required for orders to permeate through the various echelons of command is frequently underestimated. To give subordinate leaders an opportunity to reconnoiter, to estimate the situation, and to issue their own instructions, orders should reach them in ample time.

■ 104. 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, but nothing more.

Orders must be clear and explicit and as brief as is consistent with clarity; short sentences are easily understood. The more urgent the situation, the greater the need for brevity 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, do not inspire confidence and have no place in field order. Trivial and meaningless expressions divide responsibility and lead to the adoption of half measures by subordinates. Exaggerated and bombastic phrases invite ridicule and weaken the force of an order.

An order must be simple and understandable, being framed to suit the intelligence and understanding of the recipient. Above all it must be adapted to the circumstances under which it will be received and executed.

■ 105. Orders should prescribe only so far as conditions can be foreseen. When an attempt is made to arrange details too far in advance, orders usually have to be countermanded. Such changes overload the means of signal communication, cause confusion and misunderstanding, impose needless hardships on the troops, and injure their morale.

Orders issued by subordinates should not be mere repetition of those from higher authority with additions of their own. New orders are clearer and more satisfactory.

■ 106. As a rule it is desirable to keep contemplated movements secret as long as possible and to confine knowledge thereof to a few staff officers and senior commanders. (See par. 135.) However, upon entry into action no unit should be in doubt as to what the commander wants it to do.

Whenever knowledge of his intentions is necessary to insure the cooperation of the units engaged, a commander does not hesitate to disclose them to all concerned. In case of a withdrawal, it may be expedient to inform confidentially only the next subordinate commander and a few staff officers of the contemplated operation.

A commander may find it necessary to clarify his intentions by explaining them orally to subordinate commanders. In doing so he must not give the impression of justifying his decision, or of depending upon his subordinates for approval. The commander can share the responsibility for the decision and the order with no one. (See par. 117.)

■ 197. *Oral* and *dictated orders* have particular application to smaller units. Whenever practicable, they are given by pointing out and identifying localities and terrain features on the ground.

The assembling of commanders or their representatives to receive orders is advisable only when the situation permits their absence from their units.

■ 198. To enable the will of the commander to be quickly understood to preclude omissions and for ready reference, field orders are required to follow a *standard sequence.* This sequence divides the field order into the following principal parts: Heading, Distribution of troops (in certain orders); Body; Ending. In the body the following sequence should be observed:

1. Information of the enemy and friendly troops.
2. Decision of the commander and general plan of maneuver.
3. Tactical instructions to subordinate units.
4. Administrative provisions as far as they need be known to troop units, or a reference to an administrative order if it accompanies the field order.
5. Instructions for signal communication and location of command posts.

For further details see SOFM.

■ 199. In certain situations it may be necessary or desirable to issue a *warning order.* A warning order usually consists of a brief message giving information which will enable sub-

ordinate commanders to make the necessary preparations for a contemplated operation. Its principal purpose is to gain time for preparatory measures and to conserve the energy of the troops.

■ 200. In the division and smaller units, orders are frequently issued in fragmentary form in order to expedite operations. Such *fragmentary orders* may be extracts from the complete order or may cover the various phases of an operation successively. The instructions must contain all that is necessary for the unit concerned to know at the moment in order to carry out its mission.

■ 201. It is impossible to prescribe forms of orders to fit every tactical situation. To attempt to do so would result in a rigid form and a routine style of expression which would not be in accord with the tactical requirements presented by the diverse situations that arise in war. (See par. 92.)

How much is to be included in a field order depends upon the situation in each case. Information of the enemy need be included only in case it has not been covered adequately in intelligence previously disseminated. Only so much of the administrative provisions are covered in field orders as must be known to subordinate units.

Whether the order be issued orally or in written form, as a complete order or in fragmentary form, the order must provide for the combined and coordinated action of all parts of the command.

■ 202. *Administrative orders* are employed by large units for issuing instructions relative to traffic, supply, evacuation, and other administrative matters. They are issued under circumstances where such instructions are too voluminous to be embodied in the field order, and at other times under circumstances which do not require field orders. Their number and context can be greatly reduced by the adoption of standing procedures. (See par. 205.)

The heading and ending are similar to those of field orders. If the administrative order is to accompany a field order, the heading contains the reference: To accompany FO ——.

The body of the administrative order contains information and instructions for the command as a whole relative to the

following items: supply, evacuation, traffic, trains, personnel, and miscellaneous. For instructions governing these orders, see SOFM.

■ 203. When an operation is prepared deliberately and in great detail, *annexes* covering particular aspects are used to amplify the orders of large units if the volume of detail is too great for inclusion in the orders themselves. As a rule, such annexes are of importance to a particular arm, service, or agency, but not to the command as a whole. Annexes find little or no application in mobile operations, principally because of the impracticability of their timely preparation and distribution. For instructions governing annexes, see SOFM.

Where an annex has but limited distribution, certain instructions contained therein may have to be repeated in the field order in order to insure coordination.

■ 204. Field and administrative orders and their annexes can be abbreviated and clarified by using *appendices* in the form of sketches, maps, or overlays, and appropriate charts and tables. The use of such graphic means should be fully exploited. For further details see SOFM.

■ 205. In every unit it is important that a *standing operating procedure* be prescribed by the commander whenever practicable in order to reduce the volume of orders and instructions, and to establish in the command a common understanding of routine operations to be executed. The adoption of such a procedure will save time in the preparation and issuance of orders, minimize the chances for confusion and errors when under stress of combat, and greatly simplify and expedite the execution of operations in the field.

COMMUNICATION

■ 206. *General.*—The efficient exercise of command and the prompt transmission of information and instructions require the establishment of reliable means of communication. Communication is effected by technical signal means and by messengers. Entire dependence cannot be placed upon any one means of communication; alternative means must be provided.

In principle, orders and messages are transmitted through the channels of command. In urgent cases requiring devia-

tion from this principle, intermediate commanders are informed as soon as practicable as to the purport of orders or messages delivered directly.

■ 207. Every commander is responsible for the establishment and maintenance of the communication system of his unit and for its efficient operation as a part of the communication system of the next higher command. Signal systems must be simple, flexible, and properly used by the command.

The establishment and maintenance of communication between subordinate and superior units is 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 communication with supported units.

■ 208. The various means of communication are so employed that they mutually supplement each other. Those requiring the greatest expenditure of effort and matériel are not put into action when the service required can be effectively performed by the less elaborate means.

When headquarters are in movement, communication is maintained between and within columns by means of vehicular radio and motorcycle, motor car, or mounted messengers. When distances between columns are great, aviation may be used to relay radio messages.

■ 209. The command posts and advanced message centers constituting the command system of a unit (see par. 83) are the control points in the initial installation of the signal communication system. (See pars. 229–234.) Early information is given to the signal or communication officer of a unit relative to projected operations and the location and movement of command posts. (See pars. 230–233.)

In accordance with the directions of the commander, the unit signal or communication officer prepares the instructions for the establishment of the signal communication of the command. These instructions contain the necessary information to enable the communication officers of subordinate units to establish signal communication within their units and to connect with the command system. Communication offi-

cers of subordinate units maintain close cooperation with the signal officer of the higher unit.

■ 210. The prompt establishment of signal communication is facilitated by the early designation of command posts and advanced message centers and the early arrival of signal units in the combat area.

Signal units usually move and operate by echelon corresponding to the echelons in which a unit headquarters is subdivided in combat. (See par. 123.) Signal agencies are installed and put in operation at a new command post or location before similar agencies are discontinued at the former location. (See par. 231.)

■ 211. *Message centers* are operated at the command posts, and at the rear echelon of the headquarters of the large units by the signal communication personnel of the command. *Advanced message* centers for the reception and relay of messages are employed to facilitate communication with advanced units or units operating on a flank.

Message centers assist the command and staff by coordinating the transmission of outgoing orders, reports, and messages with the available signal communication agencies, and by expediting the delivery of incoming messages. In general, cryptographing and decryptographing of messages are the responsibility of the message center.

■ 212. Messages between staff sections of the same headquarters, when the sections are located at the same place, do not normally pass through the message center.

■ 213. The message center transmits messages in accordance with the classification indicated by the sender, as follows: "urgent," "priority," "routine," or "deferred."

Urgent messages.—The urgent classification is reserved for messages requiring the greatest speed in handling. Ordinarily the urgent classification is used only in combat or when combat is imminent. It may be used when reporting serious damage or distress during peace or war.

Priority messages.—The priority classification is used for messages which must be given this classification in order to reach the addressees in time for effective action.

Routine messages.—The routine classification is used for messages which require no special precedence.

Deferred messages.—The deferred classification is used for those messages whose delivery to the addressees may be delayed until the beginning of office hours of the morning following the day on which they are filed.

■ 214. The message center employs the most suitable means available for the transmission of any message. The originator does not ordinarily designate the particular means by which a message is to be sent. If he desires the physical transmission of the message, he will mark it "By messenger," and it will be so transmitted.

■ 215. *Advanced message centers* are established whenever needed for the reception and relay of messages. Information as to their location is always transmitted to the troops.

Advanced message centers are frequently employed in the reconnaissance operations of cavalry divisions as collecting points for messages of several reconnaissance detachments. (See pars. 147 and 152.)

■ 216. *Transmission by technical means* includes wire, radio, visual and sound signals, and homing pigeons.

■ 217. *Wire transmission* (telephone, telegraph, and teletype) constitutes the basic means of signal communication. It will not, however, always be available for communication between forces operating at a considerable distance from each other, between troop units and the higher command on the march, and between the advanced troops and the rear in combat. Rapidly changing situations such as a pursuit or retreat greatly restrict the practicability of its employment. The possibility of failure to function in critical situations must also be reckoned with. A wire system must, therefore, be supplemented by other means of communication.

Although wire transmission is a relatively safe means, there is always the possibility of hostile interception. It should not be employed in interchanges relative to plans of operation which are not to be executed immediately. Code language is frequently prescribed for use in telephonic interchanges subject to enemy interception.

The general plan of the wire system and its proposed extension during combat is fixed by the *axis of signal communication* of a unit, announced in the field order. (See par. 232.)

■ 218. *Radio transmission* is especially applicable to employment in spanning distances between widely separated mobile forces and in communication between ground and air. It possesses the advantage of being less vulnerable than wire transmission to the effects of hostile fire, and is, therefore, a valuable supplement to wire systems in combat; it is subject, however, to hostile interference.

Radio permits of the simultaneous transmission of a message to several recipients. Interception of radio messages must, however, be presumed; code is therefore used for the transmission of all messages which contain information of value to the enemy. 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 to the enemy of information contained therein.

■ 219. *Airplanes* find especial application as a means of communication when distance, intervening obstacles on the ground, or other factors of the situation prevent the use of other means, or when more rapid transmission is required than can be accomplished by other available means. They are thus used to span gaps between widely separated forces, between the command and the infantry, between the artillery and the infantry in combat, and between the command and various elements of columns on the march.

Communication between air and ground is effected through radio, visual signals, and dropped and pick-up messages. In combat, dropping and pick-up grounds are established near the command posts of large units, and those of infantry and artillery commanders; on the march, they are established near the location of higher commanders and at various points along the route of march. Dropping and pick-up grounds are identified by the display of panels. (See FM 24–5.) Moving vehicles designated to receive dropped messages are identified by prearranged marking of the top.

■ 220. *Visual signals* are generally used to supplement other means. They are not suitable for long messages but find especial application in communication by a few short signals in accordance with a prearranged code. (See FM 24–5.)

The use of signal lamps is limited by the consideration that the light flashes must be concealed from hostile observation. The discovery of their location draws hostile fire and may give the enemy information as to the distribution of the troops. Their utility is, therefore, for the most part, limited to communication from front to rear and to short conventional messages.

Communication by signal flags is similar in application to lamp signaling but is more restricted in scope.

Pyrotechnic signals (rockets, flares, special dischargers, etc.) are valuable for communication between the infantry and the artillery in battle and for transmitting to the command information of the arrival of the leading battalions at important terrain lines or points. Pyrotechnic signals of the leading units are, when necessary, repeated by message centers of the higher unit to which they pertain.

Panels are used only for communication from ground to airplane.

■ 221. *Sound signals* are of value chiefly for spreading an alarm, as a means of attracting attention, and for the transmission of short conventional messages and orders.

■ 222. *Homing pigeons* find their principal application as a means of communication from the combat echelon to the rear when other means have failed. They are trained to return to their lofts which are located far enough to the rear to avoid frequent change.

■ 223. TRANSMISSION BY MESSENGER.—Sole reliance cannot be placed upon the technical means of signal communication. Their absence or failure to function does not relieve a commander of his responsibility of keeping superiors and adjacent units informed as to the situation. Independently of the technical means, each commander provides for the transmission of orders, information, and reports by means of messengers.

224. In transmission by messengers, the most efficient means of transport available is employed. In hostile territory it may be advantageous to use airplanes or armored cars, or to provide an armed escort.

225. In combat, communication by *mounted messengers, motorcyclists,* or *cyclists* is maintained as far forward as the hostile fire and the nature of the terrain will permit. *Runners* are used extensively in the more advanced units; they may operate singly or in relays of runner posts. The latter method is necessary when heavily shelled areas must be crossed and great rapidity of movement is required. Runner relays between the message center of a unit and lower units are established by the higher unit.

226. For covering long distances, *courier airplanes* or *relay lines* of cyclists or motorcyclists may become necessary. When relay lines are established, connecting posts are generally placed on the roads at well-marked points such as crossroads, bridges, etc.

227. Important messages are often sent by two or more messengers. It may be advisable to send duplicate messages by different routes. Officers are employed for the transmission of important messages when explanation relative to the situation or additional information may be required.

228. The officer or noncommissioned officer directing the transmission of a message gives the messenger the instructions necessary to the accomplishment of his mission (destination, route, rate of movement, dangerous points to be avoided, place where he is to report after the delivery of the message).

Messengers have the right-of-way and must be given all practicable assistance. In crossing an outpost or other line established by a security detachment, a messenger reports his destination to the nearest leader who is required to orient the messenger and lend aid, if such is necessary, to expedite transmission.

COMMAND POSTS

229. The *command post* of a unit is the station of its headquarters. It is the place where the staff does its work

and where contact with the commander can always be secured. All agencies of signal communication center at the command post.

■ 230. For convenience of operation in campaign, the headquarters of a large unit is divided into a *forward* and a *rear echelon*. (See par. 123.) The forward echelon then constitutes the command post.

The *forward echelon* consists of the staff agencies immediately required by the commander for assistance in tactical operations; the *rear echelon* consists of the remaining staff agencies required for control of administrative and supply activities.

■ 231. In the selection of a command post, consideration is given to the disposition of troops, routes of communication, the requirements of signal communication, ample space for staff activities, cover, and concealment.

Remote location of a command post with respect to subordinate units places an unnecessary burden on the means of signal communication and delays the transmission of orders and information. Another consequence of such remoteness is that the commander and his staff lack full knowledge of the terrain and the progress of operations.

Through the use of motor transport a command post can be moved quickly over a considerable distance. As a general rule, frequent changes in the location of the command post are avoided. Before a change of location is made, the necessary technical means of communication to the new command post must be established. (See par. 210.)

■ 232. During operations requiring movement of command posts, each large unit designates an *axis of signal communication* by naming the probable successive locations of its command post in the direction of contemplated movement. It also assigns an axis of signal communication to each of its major subordinate units.

A commander must keep superior and subordinate units informed of the location and contemplated displacement of his command post.

■ 233. On the march, the command post of a large unit usually advances by displacement along a designated axis; command posts of subordinate divisional units continue to function while moving at the head of their march columns.

On the offensive, command posts are well forward, in a location that offers good facilities for communication and is protected from effective hostile fire. For small units proximity to a good observation post, and for large units proximity to a suitable landing field are desirable.

On the defensive, command posts are located farther to the rear due to the wider frontage and greater depth of deployment of units.

■ 234. All command posts and routes thereto are marked to enable messengers to find them by day and night. Security measures are taken to protect the command posts against surprise attack by hostile aviation, mechanized cavalry, or other mobile ground forces.

■ 235. The personal influence of the commander on the troops is of the utmost importance. (See par. 182.) He must be near his troops when they are engaged in combat. When he leaves the command post he is accompanied by a small staff party.

In an advance, column commanders and their staff parties are well forward. If the advance is made in several columns, the division commander is with the principal column or with the column along which the axis of signal communication is being established. Ordinarily, he and his staff party move forward by bounds to successive stations where messages may reach the commander without delay.

When combat is in prospect, the division commander joins the advance guard of that column which will probably have the most important task. His location must be easily found and reached.

During the decisive phase of battle, the place of the commander is near the critical point of action. He should remain until he is assured that his orders and intentions are understood and that the subordinate commander has taken proper measures for their execution.